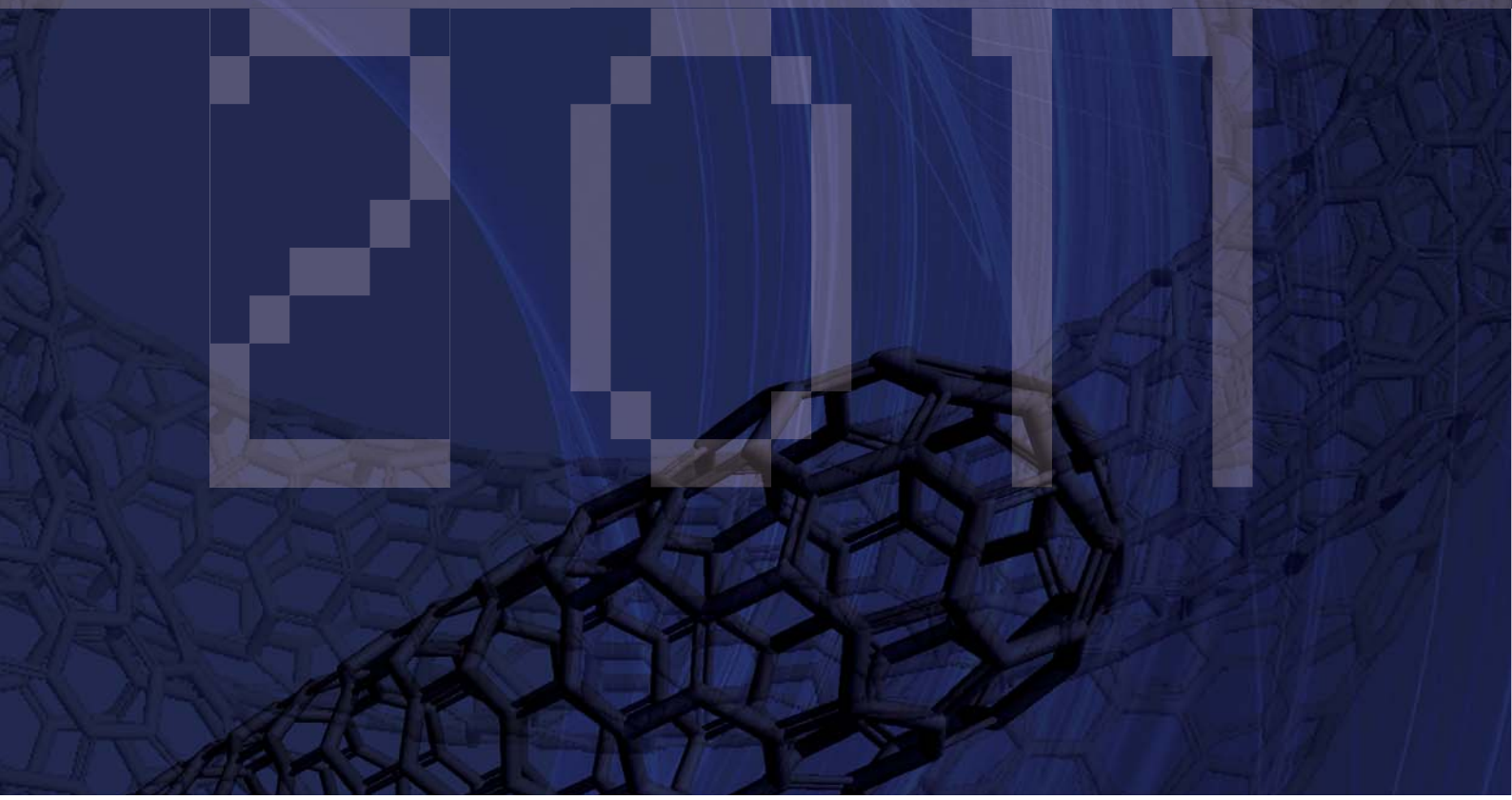
12th International Conference on the Science and Application of Nanotubes

10th-16th July
Cambridge



TrinityCollegeCambridge

THOMAS SWAN
PERFORMANCE & SPECIALITY CHEMICALS

Cambridge CNT Society

AMERICAN ELEMENTS

CIKC CAMBRIDGE INTEGRATED KNOWLEDGE CENTRE
Advanced Manufacturing Technologies for Photonics and Electronics – Exploiting Molecular and Macromolecular Materials

RSC Publishing

Q-FLO
Bringing Nano to Market

	Sunday 10th July Corn Exchange	Monday 11th July Corn Exchange	Tuesday 12th July Corn Exchange	Wednesday 13th July Corn Exchange	Thursday 14th July Corn Exchange
8:00		**Registration** (from 7am Mon & Fri only)	**Registration**	**Registration**	**Registration**
9:00		**Opening Lord Rees**	**K3** Heinz	**K4** Coleman	**K5** Ruoff
10.00	**Registration Opens** Babbage Foyer moves to Corn Exchange Mon 7:00-19:00 Tu-Th 8:00-19:00 moves back to Babbage Fri 7:00-19:00 Sat 8:00-19:00	**K1** Yakobson **CT1** Loiseau Posters 1 Coffee/Tea	**CT12**: Nakamura **CT13**: Yanagi Posters 3 Coffee/Tea	**CT25**: Mizutani **CT26**: Kurkina **CT27**: Tobias Posters 5 Coffee/Tea	**CT30**: J-K Kim **CT31**: Hu Posters 7 Coffee/Tea
11.00		**I1** Hata	**I3** Reich	**I6** Kataura	**I8** Baik
12.00		**CT2**: Launois **CT3**: Shiratori **CT4**: Jiang	**CT14**: Cheong **CT15**: Kalbac **CT16**: Saito	**CT28**: Vijayaraghavan **CT29**: Nakashima	**CT32**: Ansaldo **CT33**: Jost **CT34**: T-H Kim
13.00	**Tutorial A** Hirsch	Posters 2 Lunch	Posters 4 Lunch	**K7** Stone Posters 6 Lunch	Posters 8 Lunch
14.00	**Tutorial B** Bleloch	**I2** Koziol	**I4** Journet		**I9** Zhang
15.00	Break	**CT5**: Hasegawa **CT6**: Endo **CT7**: Zhong **CT8**: Fallahgilvaei	**CT17**: Grove-Rasmussen **CT18**: Datta **CT19**: Elkin **CT20**: Cullinan		**CT35**: De Greef **CT36**: Kletschka **CT37**: Yoder **CT38**: Yap
16.00	**Tutorial C** Giustino **Tutorial D** Hong	Posters 1 Coffee/Tea	Posters 3 Coffee/Tea	Free Time in Cambridge or Early Coach Duxford	Posters 7 Coffee/Tea
17.00		**K2** Rao	**I5** Martel		**K6** Novoselov
18.00	**Registration Closes** 18:00	**CT9**: Kawabata **CT10**: Volodin **CT11**: Ganzhorn	**CT21**: Nojeh **CT22**: Menna **CT23**: Hijazi **CT24**: Ricci		**CT39**: Malic **CT40**: Torrisi **CT41**: Charlier
19.00	**Welcome Reception** (Trinity College) Sponsored by Q-Flo Ltd.	**Sponsored Reception** (Pembroke College) "AIXTRON EVENT"		Late Coach Duxford Pre-Banquet Reception Sponsored by Thomas Swan Ltd. BANQUET (return after banquet)	**Poster Awards** **Conference Summary** (Millie Dresselhaus) **NT12 Preview** **Conference Closure**
19.30					

	Friday 15th July	Saturday 16th July
8:00	Registration	Registration
	Satellites	Satellites
9:00		
	Graphene: Babbage site **Composites:** Winstanley (Trinity) **Computation:** Arts School A **Nano Bio:** Arts School B **Metrology:** Cockcroft	**Graphene:** Babbage site **Composites:** Winstanley (Trinity) **Computation:** Arts School A **Nano Bio:** Arts School B **Metrology:** Cockcroft
10.00		
11.00		
12.00		
13.00	Lunch	Lunch
14.00	Satellites	Satellites
15.00		
	Graphene: Babbage site **Composites:** Winstanley (Trinity) **Computation:** Arts School A **Nano Bio:** Arts School B **Metrology:** Cockcroft	**Graphene:** Babbage site **Composites:** Winstanley (Trinity) **Computation:** Arts School A **Nano Bio:** Arts School B **Metrology:** Cockcroft
16.00		
17.00		
18.00		
19.00	Satellites Dinner (by tickets only)	
19.30		

Welcome from the NT11 Organising Committee

Dear NT11 Participant,

Welcome to Cambridge, welcome to NT11, the twelfth in this series of international annual conferences. They rotate between the Americas, Europe and Australasia, and next year, we will be off to Brisbane for NT12. We have a great conference ready to go, with a collection of lectures and posters which continue to represent the cutting edge of the field. As is our tradition, the conference is based on a single plenary session throughout, so the community is enhanced and strengthened. The same applies to the poster sessions with all posters being available to all participants, the posters themes being mixed on the ground yet colour coded with respect to themes. Overall we have 6 Keynote lectures, 9 invited lectures, and 41 contributed oral lectures. However, as before the major exercise in information transfer and probably discussion too, falls to the selected poster papers of which there are more than 350.

The tutorials, covering the topics of, applications, 'the era of carbon allotropes', fundamentals of electron microscopy of carbon nanostructures and the basic concepts of nanomaterial simulations, will be held on the afternoon of Sunday 10th July, immediately before the main conference.

This year the Satellite sessions, will follow on from the main conference on Friday 15th and Saturday 16th July. Do stay for one or more of these parallel events if you are able. This year there are five, the new arrival being the satellite devoted to nano carbon composites (NCC). Much of the energy behind this new satellite has been provided by a biennial European symposium on carbon nanotube materials (CNT Net)

The satellite line-up is thus:

CNBMT11	Carbon Nanomaterial Biology, Toxicology and Medicine
CCTN11	Computational Challenges and Tools for Nanotubes
GSS11	Graphene Technology: Production, Assembly and Applications
MSIGN11	Metrology, Standardization and Industrial Quality of Graphene and Nanotubes
NCC11	Nano Carbon Composites

We are privileged to have with us two senior figures of the field. Millie Dresselhaus, of MIT, the doyenne of the field, who will be summing-up NT11 in her own inimitable style, and David Tomanek, the founder of the NT series way back in 99, with a meeting in Michigan, run, we understand, off his own personal credit card.

Cambridge, of course, has its own attractions. It is a beautiful University city, with Colleges as old as the University itself (~850 years). It also has its own river, the Cam, which is a centre for relaxation, if not study.

We have done all we can to ensure that the conference runs smoothly, however its success is in your hands, speakers, poster presenters and participants alike. Please make the most of it, a feast of carbon nanotube science and technology in a unique setting.

We look forward to extending this welcome in person.

Yours sincerely,

NT 11 organisers

Eleanor Campbell	Edinburgh University
James Elliott	Cambridge University
Andrea Ferrari	Cambridge University
Nicole Grobert	Oxford University
Ian Kinloch	Manchester University
John Robertson	Cambridge University
Milo Shaffer	Imperial College, London
Alan Windle (chair)	Cambridge University

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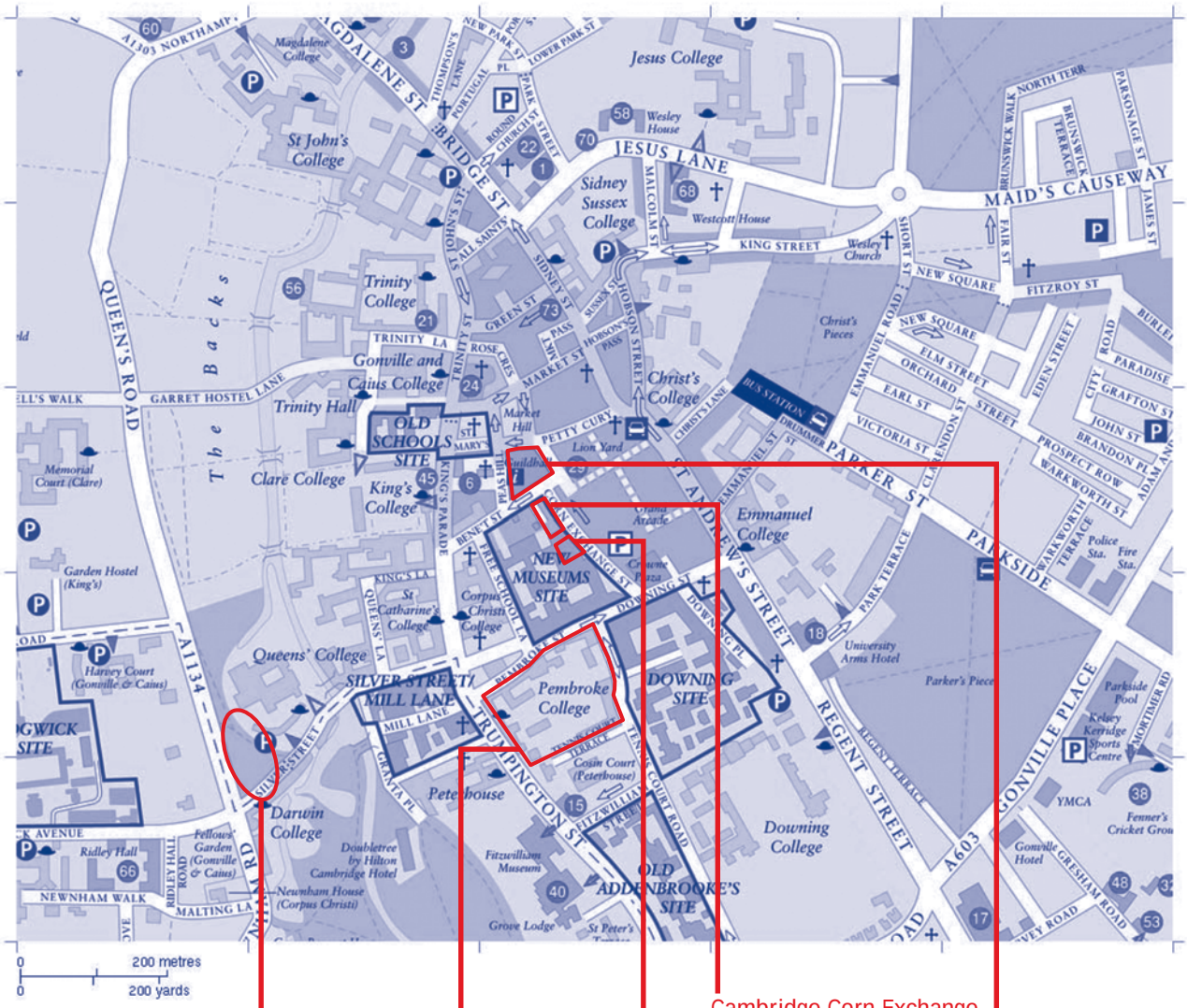
Main conference locations



Cambridge Corn Exchange
(main symposium venue)

Queens' Green
(coach pick up point)

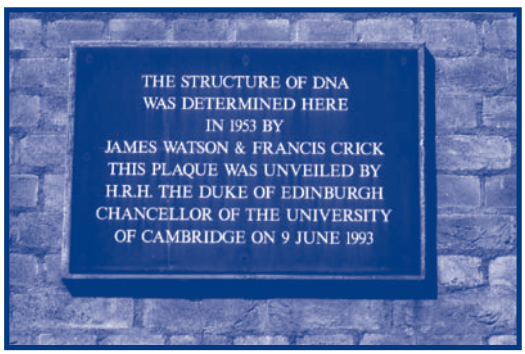
Pembroke College
(lunches)

Babbage lecture theatre
(registration)

Guild Hall
(Poster presentations and
Tea/coffee)

Old Botanic Garden Site, 1784

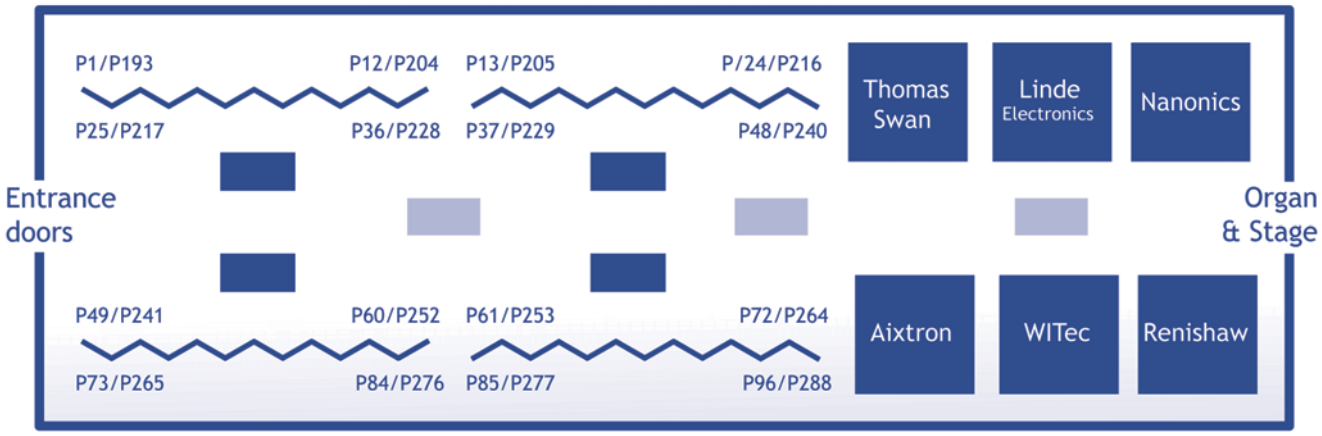
College accommodation locations



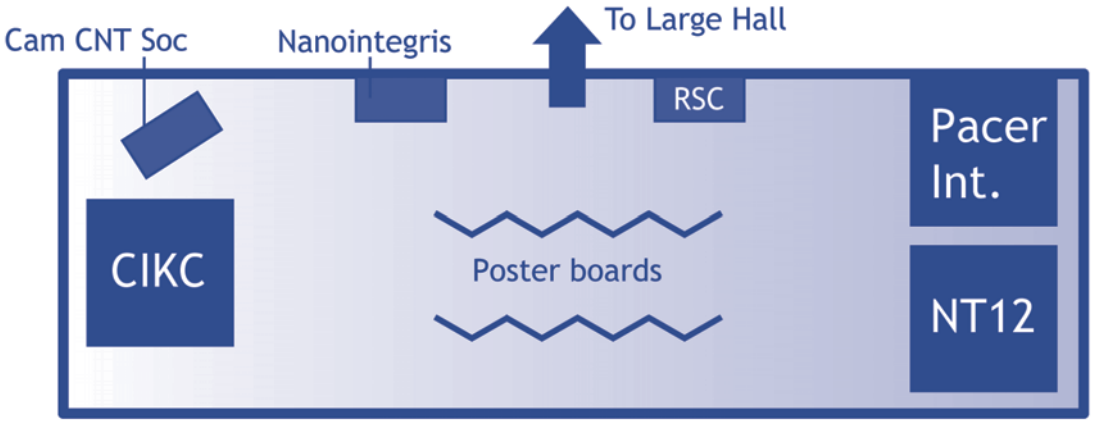
Free School Lane, Cambridge

Poster session floor plans

Guildhall: *Large Hall*



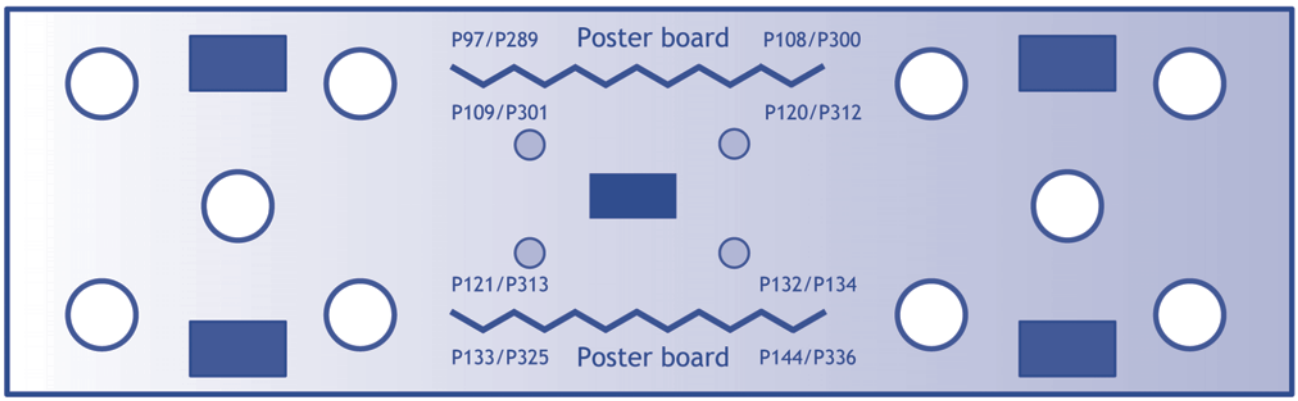
Guildhall: *Small Hall*



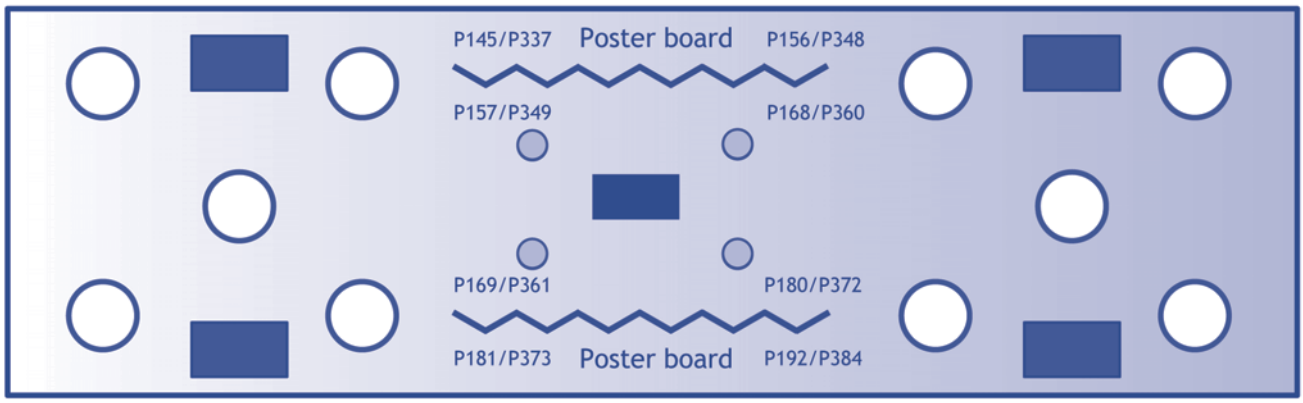
Key

Poster session floor plans

Pembroke: *Marquee One*



Pembroke: *Marquee Two*



Key

List of Sponsors

The NT11 Conference is pleased to be sponsored by the following:

NT10 Conference on Carbon Nanotubes	*Thomas Swan & Co. Ltd*
Trinity College, Cambridge	*Cambridge Integrated Knowledge Centre (CIKC)*
Cambridge CNT Society	*Q-Flo Ltd.*
RSC Publishing	*American Elements*
NanoIntegris Inc.	*US Office of Naval Research Global*

List of Exhibitors

The NT11 Conference is pleased to welcome the following as exhibitors:

AIXTRON

Nanonics Imaging Ltd.

Witec GmbH

Cambridge Integrated Knowledge Centre (CIKC)

NT12 conference

Linde Nanomaterials

Renishaw plc

Pacer International

Thomas Swan & Co. Ltd

Cambridge & Duxford Excursion Details

"Cambridge has been voted as one of the top 5 UK holiday destinations.

The city was voted as the 4th most popular UK destination for tourists, as part of the 2011 Travellers' Choice Awards by Tripadvisor.co.uk"

There is much to see and do in Cambridge whether it is a stroll around the historic Colleges, a punt along the River Cam or to sit in one of the many tea- shops and watch the world go by.

For more information on what Cambridge has to offer please see the Visit Cambridge website:
http://www.visitcambridge.org/VisitCambridge/Home.aspx.

Staff on the Registration Desk will be glad to assist with any queries.

A list of restaurants, bars and pubs can be found in this booklet.

Excursion to Imperial War Museum

Delegates have the opportunity to visit Imperial War Museum at Duxford during the afternoon of Wednesday 13th July 2011. Spaces are limited to 250. If you wish to visit this interesting museum prior to the Conference dinner please sign up at the Registration Desk by 12:00 noon on Monday 11th July 2011.

Coach Travel

Transport to Duxford will be by coach. Richmond Coaches will depart from Queen's Green at 14:30, and will be clearly marked NT11. Coaches will leave promptly, please do not be late.

Please note: Coaches will return to Cambridge after the Conference Dinner.

Conference Dinner – Under the Wings of Concorde

The Conference Dinner will be held at the Imperial War Museum. Delegates will begin the evening with a welcome drink in the American Hangar. The dinner itself will take place "Under the Wings of Concorde" in the AirSpace Hangar.

Coach Travel

Transport to Duxford will be by coach. Richmond Coaches will depart from Queen's Green at 17:30, and will be clearly marked NT11. Coaches will leave promptly, please do not be late.

Photographs courtesy of Imperial War Museum

Places to eat

The Alexandra Arms: 22 Gwydir Street. D

The Anchor: Silver Street. Tel: (01223) 353554

Children (supervised) allowed until 21:00(children's meals available), Sunday Roasts, Riverfront Terrace

The Avery: 69-73 Regent Street. Tel: (01223) 323405. D, Satellite TV, Pool Tables, Sunday Roasts

B Bar: Market Passage. Tel: (01223) 309796. D, Over 21's only, smart dress code, live bands on Thursdays/Jazz

The Bakers Arms: 176 East Road, CB1 1BG. Tel: (01223) 304121

The Baron Of Beef: Bridge Street. Tel: (01223) 505022

The Bath Ale House: Benet Street. Tel: (01223) 350969. Children allowed. Food served all day everyday.

The Boat House: Chesterton Road. Tel: (01223) 460905. D, Outdoor beer garden, Children allowed before 20:00

Burleigh Arms: 9 Newmarket Road. Tel: (01223) 301547

Satellite TV, Pool, Sunday Roast, patio garden.

The Cambridge Blue: Gwydir Street. Tel: (01223) 361382. Children allowed in conservatory and beer garden, real ales.
The Castle: Regent Street. Tel: (01223) 307477. Children allowed, Regular Jazz nights, Occasional salsa nights

The Castle Inn: Castle Street. Tel: (01223) 353194

Children allowed during the day, Beer Garden, Sunday Roasts

The Champion Of The Thames: King Street. Tel: (01223) 352043. Children allowed in small bar until 20:30 daily

The Clarendon Arms: Clarendon Street. Tel: (01223) 313937. Children allowed, Beer garden/courtyard, Sunday roasts,

The Corner House: 231 Newmarket Road. Tel: (01223) 352047

Live bands (check for details), Sunday Roasts, Children allowed until 21.00, Gluten free food.

The County Arms: 43 Castle Street. Tel: (01223) 566696. Sunday roasts, Quiz nights on Monday, take-away service available.

The Cow: Wheeler Street. Tel: (01223) 308871. D

The Eagle: Bene't Street. Tel: (01223) 505020. 15th century Coaching Inn, famous for its WWII Graffiti, Children allowed until 20.00.

The Fountain: Regent Street. Tel: (01223) 366540. Satellite TV (Sports), Children welcome until 21.00, DJs on Fridays and Saturdays, wireless internet access, late night bar.

The King Street Run: King Street. Tel: (01223) 328900. Satellite Big Screen TV, Pool Tables, Table Football.

The Mill: Mill Lane. Tel: (01223) 357026. Children allowed until 19:00, Sunday Roasts

The Mitre Tavern: Bridge Street. Tel: (01223) 358403. D, Children allowed before 18:00

The Pickerel: Magdalene Street. Tel: (01223) 355068. No children allowed, Sunday Roasts, wireless Internet access

The Prince Regent: Regent Street. Tel: (01223) 505030. Children allowed until 20:00, Conservatory & Patio Area, Sunday Roasts.

The Regal (Wetherspoons): 38-39 St Andrew's Street. Tel:(01223) 366459. D, Children allowed in family area if eating until 20:00, Children's menu, baby changing facilities available, Steak night on Tuesday, Curry night on Thursday, Patio Area, music after 20:00

River Bar + Kitchen: off the Boardwalk, Quayside. Tel: (01223) 307030. Children allowed only in the restaurant, DJ's at the weekend

Sir Isaac Newton: Castle Street. Tel: (01223) 305555

Saint Radegund: King Street. Tel: (01223) 311794

The Snug: 67 Lensfield Road. Tel: (01223) 367684. Children welcome, Breakfast served all day, Live Music Tuesday and Sunday

Ta Bouche: 10-15 Market Passage, Sidney Street. Tel: (01223) 462277. Children allowed until 18:00 (menu available)

The Tivoli: (Wetherspoon) 16, Chesterton Road. Tel: (01223) 310450

The Vaults: 14 Trinity Street. Tel: (01223). Gluten-Free Menu, Children's menu

The Waterman: 32 Chesterton Road. Tel: (01223) 323813. Children welcome, Satellite TV, D: Disabled Toilet

Bars

All Bar One: 36-37 St Andrews Street, CB2 3AR. Tel: (01223) 371081. D V (Over 21's only)

B Bar: Market Passage, CB2 3PF. Tel: (01223) 309796. D V (Over 21's Only)

Bun Shop: 1 King Street, CB1 1LH. Tel: (01223) 366866

D'Arrys Wine Shop: 2-4 King Street, CB1 1LN. Tel: (01223) 505015

Granta Bar: University Centre, Granta Place, Mill Lane, CB2 1RU. Tel: (01223) 337754

La Raza: 4 Rose Crescent, CB2 3LL. Tel: (01223) 464550. V

Parkers Bar: De Vere University Arms Hotel, Regent Street, CB2 1AD. Tel: (01223) 351241. D V

Ta Bouche: 10-15 Market Passage, Sidney Street, CB2 3PF. Tel: (01223) 462277. C (until 19:30) D V

Vaults: 14 Trinity Street, CB2 1TB. Tel: (01223) 506090. Gluten-free menu, live music every Friday 22:30-01:00

The Snug: 67 Lensfield Road, CB2 1EN. Tel: (01223) 367684
Classic Cult movies shown every Monday evening

Chinese and Oriental

Charlie Chan: 14 Regent Street, CB2 1DB. Tel: (01223) 361763 V C

DoJo Noodle Bar: (Chinese, Japanese, S.E Asian) 1-2 Millers Yard, Mill Lane, CB2 1RQ. Tel: (01223) 363471 V

Jinling:11 Peas Hill, CB2 3QB. Tel: (01223) 566188 V C

Lanhong House:10, Lensfield Rd, Cambridge, CB2 1EG Tel: (01223) 355227. V C

Teri-Aki Restaurant & Bar: 6-8 Quay Side, CB5 8AB. Tel: (01223) 882288.V D C (Japanese)

The Ugly Duckling: (Chinese) 12 St. John's Street, CB2 1TW. Tel: (01223) 358281. V C (highchair)

Wagamama: 36a St Andrews Street, CB2 3AX. Tel: (01223) 462354. C

Yippee Noodle Bar: 7-9 King Street, CB1 1LH. Tel: (01223) 518111. D V C

Yo Sushi: 1 – 2 Petty Cury, CB2 3NE Tel: (01223) 363350

English Traditional

Browns: 23 Trumpington Street, CB2 1QA. Tel: (01223) 461655. V D C

Cambridge Chop House: 1, Kings Parade, CB2 1SJ. Tel: (01223) 359506.C V

St John's Chop House: 21–24 Northampton St, Cambridge, CB3 0AD. Tel: (01223) 353110. (Map Ref: D5). C V D Sunday Roasts

English Modern

Back Street Bistro: 2 Sturton Street, CB1 2AQ. Tel: (01223) 306306. **V**

Oak Bistro: 6 Lensfield Road, Cambridge, CB2 1EG. Tel: (01223) 323361.

Riverside Restaurant: University Centre, Granta Place, Mill Lane, CB2 1RU. Tel: (01223) 337759. **V D C**

The Bun Shop: 1 King Street, CB1 1LH. Tel: (01223) 366866

French

Brasserie Chez Gerard: 27-28 Bridge Street, CB2 1UJ. Tel: (01223) 448620. **V D C**

Cafe Rouge: 24/26 Bridge Street, CB2 1UJ. Tel: (01223) 364961. **V C**

Cote: 21/24 Bridge Street, Cambridge, CB2 1UF. Tel: (01223) 311053.

Galleria: 33 Bridge Street, CB2 1UW. Tel: (01223) 362054.

Midsummer House: Midsummer Common, CB4 1HA. Tel: (01223) 369299 2 Michelin Stars. Closed Sun & Mon. (Advanced reservation advisable) **V C**

Gastro-Pubs

Kingston Arms: 33 Kingston Street, CB1 2NU. Tel: (01223) 319414

The Punter: 3 Pound Hill, CB3 0AE. Tel: (01223) 363322

Hotel Restaurants

Arundel House Hotel: 53 Chesterton Road, CB4 3AN. Tel: (01223) 367701. **V D C** Traditional Sunday Roast

Best Western Gonville Hotel: Gonville Place, CB1 1LY. Tel: (01223) 366611. **V D C**

Bloomsburys Restaurant, Crowne Plaza: Downing Street, CB2 3DT. Tel: (01223) 464440. **V D C**

Graffiti Restaurant: Hotel Felix, Whitehouse Lane, Huntingdon Road, CB3 0LX. Tel: (01223) 277977. **V D**

High Table Restaurant: Royal Cambridge Hotel, Trumpington Street, CB2 1PY. Tel: (01223) 351631. **V D C**

Hilton Double Tree: Granta Place, CB2 1RT. Tel: (01223) 259988. **V D C**

Restaurant 17: University Arms Hotel Regent Street, CB2 1AD. Tel: (01223) 273007. (Map Ref: F3) **V D C** (childrens portions)

Indian

Bombay Brasserie: 3/5 Millers Yard, Mill Lane, CB2 1RQ. Tel: (01223) 360409

Café Naz: 45-47 Castle Street, CB3 0AH. Tel: (01223) 363666. **V C**

Cocum: 71 Castle Street, CB3 0AH. Tel: (01223) 312569. **V D**

Curry Garden: 106 Regent Street, CB2 1DP. Tel: (01223) 301071

Curry House Tandoori Restaurant: 71 Castle Street, CB3 0AH. Tel: (01223) 312569. **V**

The Gandhi: 72 Regent Street, CB2 1DP. Tel: (01223) 353942. **V C**

Maharajah Indian Tandoori: 9/13 Castle Street, CB3 0AH. Tel: (01223) 358399.

Raj Malabar: 71 Castle Street, CB3 0AH. Tel: (01223) 312569

The Rice Boat: 37 Newnham Road, CB3 9EY. Tel: (01223) 302800. Authentic Keralan cuisine.

Italian & Mediterranean

Ask: Bridge Street, CB2 1UF. Tel: (01223) 364917. **V D**

Bella Italia: The Mill, Newnham Road, CB3 9EY. Tel: (01223) 367507. **C V**

Caffe Uno: 32 Bridge Street, CB2 1UJ. Tel: (01223) 314954. **V C**

Carluccio's: 1 Fisher Square, The Grand Arcade, Cambridge, CB2 3QF. Tel: (01223) 307046. **C V D**

De Luca Cucina & Bar: 83 Regent Street, CB2 1AW. Tel: (01223) 356666

Don Pasquale Restaurant: 12a Market Hill, CB2 3NJ. Tel: (01223) 350106. **V C**

Eraina Taverna: Free School Lane, CB2 3QA. Tel: (01223) 368786. **V** Greek Cuisine

Jamie's Italian: The Old Library, Wheeler Street, Cambridge, CB2 3QB. Tel (01223) 654094.

La Margherita: 15 Magdalene Street, CB3 0AF. Tel: (01223) 315232. **V C**

La Mimosa: Thompsons Lane, CB5 8AQ. Tel: (01223) 362525

La Tasca: 14–16 Bridge Street, Cambridge, CB2 1UF. Tel: (01223)464630

Stazione: 1 & 3a Market Hill & 39/41 Petty Cury, CB2 3NJ. Tel: (01223) 352607. **V C**

Strada: 17 Trinity Street, CB2 1TB. Tel: (01223) 352166

Varsity Restaurant: 35 St Andrew's Street, CB2 3AR.

Middle Eastern and Turkish

Agora @ The Copper Kettle: 4 King's Parade, CB2 1SJ. Tel: (01223) 308448

Anatolia: 30 Bridge Street, CB2 1UJ. Tel: (01223) 362372. **V C**

Efes: 78-80 King Street, CB1 1LN. Tel: (01223) 500005. **V C**

Shiraz: 84 Regent Street, CB2 1DP. Tel: (01223) 307581

Mexican

Mannamexico: 33a Regent Street. CB2 1AB. Tel: (01223) 36 3439

Pizzerias

Pizza Express: 26-28 Regent Street, CB2 1DB. Tel: (01223) 306777. **V C D**

Pizza Express: 7a Jesus Lane, CB5 8BA. Tel: (01223) 324033. **V C D**

Pizza Hut: 19/21 Regent Street, CB2 1AB. Tel: (01223) 323737. ***V C D***

Seafood

Loch Fyne: 37 Trumpington Street, CB2 1QI (01223) 362433. **C**

Tea & Coffee Shops

Auntie's Tea Shop: 1 St Mary's Passage, CB2 3PQ. Tel: (01223) 315641. **C V**

Benet's: 4 Benet Street, CB2 3QN. Tel: (01223) 311000

Botanic Garden Cafe: The Gilmour Building, Bateman Street, CB2 1JF. Tel: (01223) 336265. **D C**

Café Carrington: 23 Market Street, CB2 3NZ. Tel: (01223) 361792. **V C**

Caffe Nero:11 Market Street, CB2 3PA. Tel: (01223) 307728. **D C V**

Clowns: 54 King Street, CB1 1LN. Tel: (01223) 355711. **D C**

Courtyard Café at the Fitzwilliam Museum: Trumpington Street, CB2 1RB. Tel: (01223) 764402. **D V**

Fair Shares Café: Emmanuel United Reformed Church, Trumpington Street, CB2 1RR. Tel: (01223) 351174. **D V**

Indigo Coffee House: 8 St Edwards Passage, CB2 3PJ. Tel: (01223) 368753. **V C**

Infusion Tea Rooms: The Regent Hotel, 41 Regent Street, CB2 1AB. Tel: (01223) 351470

Livingstones Coffee Shop: St Andrews Baptist Church, 43 St Andrews Street, CB2 3AR. Tel: (01223) 566030. **V**

Martin's Coffee House: 4 Trumpington Street, CB2 1QA. Tel: (01223) 361757. **C V**

Michaelhouse Café: Trinity Street, CB2 1SU. Tel: (01223) 309147. **D C V**

Nadias Patisserie: 16 Silver Street, CB3 9EL. Tel: (01223) 568335. **V C**

Starbucks: 18 Market Street, CB2 3PA. Tel: (01223) 328575. **D V**

Tatties: 11 Sussex Street, CB1 1PA. Tel: (01223) 323399. **V C**

Tatties: 15 Trinity Street, CB2 1TB. Tel: (01223) 357766. **V C**

Trockel Ulmann und Freunde: 13 Pembroke Street, CB2 3QY. Tel: (01223) 460923. **V C**

Thai and Vietnamese

Bangkok City: 24 Green Street, CB2 3JX. Tel: (01223) 354382. **C V Thai**

Big Buddha: 67a Bridge Street, CB2 1UR. Tel: (01223) 358944. **C V Thai**

Thai Regent: 108 Regent Street, CB2 1DP, Tel: (01223) 464355. **V Thai**

Mai Thai: Hobbs Pavillion, Parkers Piece, CB1 1JH. Tel: (01223) 367480. Thai

P.H.O: 33a Regent Street, CB2 1AB. Tel: (01223) 462080 **Vietnamese**

Sala Thong Thai Restaurant: 35 Newnham Road, CB3 9EY. Tel: (01223) 323178. **C V Thai**

Siam Thai: 83 Regent Street, CB2 1AW. Tel: (01223) 356666. **V Thai**

Thanh Binh: 17 Magdalene Street, CB3 0AF. Tel: (01223) 362456. **C V Vietnamese**

Vegetarian

Rainbow Vegetarian Cafe: 9a King's Parade, CB2 1SJ. Tel: (01223) 321551. **C Vegetarian, Vegan and Gluten-Free dishes**

ALL ESTABLISHMENTS ARE NON-SMOKING

C= Children's options available.

D=Disabled Friendly (Has a Disabled Toilet)

V= Vegetarian options

List prepared by the Tourist Information Centre, Peas Hill, Cambridge.

Tel: (0871 2268006) These calls are charged at a local rate. Whilst every effort is made to ensure accuracy, no responsibility can be accepted for any errors or omissions. Jan 2010

Opening hours of registration and secretariat

Sunday 10th	***Babbage Foyer***	***10:00 - 15:00***
Monday 11th	***Corn Exchange***	***07:00 - 19:00***
Tuesday 12th	***Corn Exchange***	***08:00 - 19:00***
Wednesday 13th	***Corn Exchange***	***08:00 - 19:00***
Thursday 14th	***Corn Exchange***	***08:00 - 19:00***
Friday 15th	***Babbage Foyer***	***07:00 - 19:00***
Saturday 16th	***Babbage Foyer***	***08:00 - 19:00***

Session information

Sunday 10th July

10:00-13:00 Registration opens in Babbage Foyer

13:00-14:00 Tutorial A

The Era of Carbon Allotropes

Andreas Hirsch, Department of Chemistry and Pharmacy, University of Erlangen-Nürnberg, Erlangen, Germany

14:00-15:00 Tutorial B

Fundamentals of EM Techniques - New Possibilities with Aberration Corrected Electron Microscopy

Andrew Bleloch, Halcyon Molecular, California, US

15:00-15:30 Break

15:30-16:30 Tutorial C

Computational Modelling of Carbon Nanostructures from First Principles: How to Use Computers to Understand and Design Nanomaterials

Feliciano Giustino, University of Oxford, Oxford, UK

16:30-17:30 Tutorial D

Technology Roadmap of Carbon Nanomaterials

Byung Hee Hong, Department of Chemistry, and SKKU Advanced Institute of Nanotechnology (SAINT), Suwon, Korea

18:00 Registration closes

18:00-19:30 Welcome Reception (Trinity College) sponsored by Q-Flo Ltd.

Monday 11th July

7:00-19:00 Registration in Corn Exchange

9:00-9:15 Conference Opening Ceremony, Lord Martin Rees

- ***Synthesis and Mechanism 1 (chair: James Elliott)***

9:15-10:00 Keynote K1

The atomistics of nanotubes and graphene growth - Can we win in carbon Tetris?

Boris I. Yakobson, Rice University, ME&MS Dept., Chemistry Dept., and Richard Smalley Inst., Houston, USA

10:00-10:15 Contributed Talk CT1

Understanding The Correlation Between The Catalyst Particles and C-SWNT Diameter: A First Step Towards The Chirality Control

Annick Loiseau, Laboratoire d'Etude des Microstructures, CNRS-ONERA, Chatillon, France. **Marie-Faith Fiawoo**, Laboratoire d'Etude des Microstructures, CNRS-ONERA, Chatillon, France. **Anne-Marie Bonnot**, Institut Louis Néel, CNRS, Grenoble, France. **Hakim Amara**, Laboratoire d'Etude des Microstructures, CNRS-ONERA, Chatillon, France. **Christophe Bichara**, CINAM, CNRS, Marseille, France.

10:15-11:15 Coffee & Poster Session 1 (Guildhall)

- ***Synthesis and Mechanism 2 (chair: James Elliott)***

11:15-11:45 Invited Speaker I1

Advances in SWNT Forests: Growth, Characterization, Applications, and a Pilot Plant

Kenji Hata, Nanotube Research Center, AIST, Tsukuba, Japan.

11:45-12:00 Contributed Talk CT2

Nanotube Synthesis: Nature Of Catalyst Nanoparticles And Nanotube Alignment Revealed By In-Situ Time-Resolved X-Ray Diffraction

Pascale Launois, Laboratoire de Physique des Solides, UMR CNRS 8502, Université de Paris Sud 11, Orsay, France. **Périne Landois**, Laboratoire de Physique des Solides, UMR CNRS 8502, Université de Paris Sud 11, Orsay, France. CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, URA 2453, Gif-sur-Yvette, France. **Mathieu Pinault**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, URA 2453, Gif-sur-Yvette, France. **Stéphan Rouzière**, Laboratoire de Physique des Solides, UMR CNRS 8502, Université de Paris Sud 11, Orsay, France. **Dominique Porterat**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, URA 2453, Gif-sur-Yvette, France. **Cristian Mocuta**, Synchrotron SOLEIL, Gif-sur-Yvette, France. **Erik Elkaim**, Synchrotron SOLEIL, Gif-sur-Yvette, France. **Martine Mayne-L'Hermite**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, URA 2453, Gif-sur-Yvette, France.

12:00-12:15 Contributed Talk CT3

Sub-Second Growth of Carbon Nanotube Arrays on Glasses and Their Field Emission Properties

Yosuke Shiratori, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. **Kotaro Sekiguchi**, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. **Suguru Noda**, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan.

12:15-12:30 Contributed Talk CT4

In-situ TEM Observation of the Gasification and Growth of Carbon Nanotubes through Iron Catalysts

Kaili Jiang, Department of Physics,Tsinghua University, Beijing, China. **Xiaofeng Feng**, Department of Physics,Tsinghua University, Beijing, China. **See Wee Chee**, Leroy Eyring Center for Solid State Science, Arizona State University, Tempe, AZ 85287, USA. **Renu Sharma**, Leroy Eyring Center for Solid State Science, Arizona State University, Tempe, AZ 85287, USA. **Kai Liu**, Department of Physics,Tsinghua University, Beijing, China. **Xiaofeng Feng**, Department of Physics,Tsinghua University, Beijing, China. **Xu Xie**, Department of Physics,Tsinghua University, Beijing, China. **Qunqing Li**, Department of Physics,Tsinghua University, Beijing, China. **Shoushan Fan**, Department of Physics,Tsinghua University, Beijing, China.

12:30-14:30 Lunch & Poster Session 2 (Pembroke College)

- ***Synthesis and Mechanism 3 (chair: Ian Kinloch)***

14:30-15:00 Invited Speaker I2

Continuous Spinning Of Fibres Of Metallic Single Wall Carbon Nanotubes

Krzysztof Koziol, University of Cambridge, Department of Materials Science, Pembroke Street, Cambridge, UK. **Rajyashree Sundaram,** University of Cambridge, Department of Materials Science, Pembroke Street, Cambridge, UK. **Agnieszka Lekawa-Raus,** University of Cambridge, Department of Materials Science, Pembroke Street, Cambridge, UK. **Alan Windle,** University of Cambridge,

Department of Materials Science, Pembroke Street, Cambridge, UK.

15:00-15:15 Contributed Talk CT5

Half-Centimeter-Tall Single-Walled Carbon Nanotubes Grown at Low Temperature Regime of the Growth Window

Kei Hasegawa, Deptartment of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. **Suguru Noda**, Deptartment of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. PRESTO, Japan Science and Technology Agency, Saitama, Japan.

15:15-15:30 Contributed Talk CT6

Small-Diameter and Highly Crystalline Double- and Triple-Walled Carbon Nanotubes

Morinobu Endo, Shinshu University, Japan. **Hiroyuki Muramatsu**, Shinshu University, Japan. **Daisuke Shimamoto**, Shinshu University, Japan. **Yoong Ahm Kim**, Shinshu University, Japan. **Takuya Hayashi**, Shinshu University, Japan. **Mauricio Terrones**, The Pennsylvania State University, USA. **Mildred Dresselhaus**, The Pennsylvania State University, USA.

15:30-15:45 Contributed Talk CT7

Synthesis of Ultra-High-Density Single-Walled Carbon Nanotube Forests

Guofang Zhong, Department of Engineering, University of Cambridge, Cambridge, UK. **Jamie H. Warner**, Department of Materials, University of Oxford, Oxford, UK. **Feng Yan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Bingan Chen,** Department of Engineering, University of Cambridge, Cambridge, UK. **John Robertson**, Department of Engineering, University of Cambridge, Cambridge, UK.

15:45-16:00 Contributed Talk CT8

Separation Force Spectroscopy of Brush-like Carbon Nanotubes

Ahmadreza Fallahgilvaei, Department of Mechanical Engineering, Graduate School of Engineering, Osaka University, Osaka, Japan. **Kaori Hirahara**, Department of Mechanical Engineering, Graduate School of Engineering, Osaka University, Osaka, Japan. Frontier Research Base for Global Young Researchers, Graduate School of Engineer, Osaka, Japan. **Yoshikazu Nakayama**, Department of Mechanical Engineering, Graduate School of Engineering, Osaka University, Osaka, Japan.

16:00-17:00 Coffee & Poster Session 1 (Guildhall)

- ***Structure, and Processing (chair: Ian Kinloch)***

17:00-17:45 Keynote K2

Fascination for Nanotubes

C.N.R. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India.

17:45-18:00 Contributed Talk CT9

Carbon nanotube and graphene contact structure analysis by using cross sectional TEM-EELS

Akio Kawabata, **Haruhisa Nakano, Makoto Takahashi, Motonobu Sato, Mizuhisa Nihei, Naoki Yokoyama.** Collaborative Research Team Green Nanoelectronics Center, AIST, TSUKUBA, Japan.

18:00-18:15 Contributed Talk CT10

Magnetic Resonance Nanoactuation of As Grown Arrays of Carbon Nanotubes Loaded with Ni

Alexander Volodin, Katholieke Universiteit Leuven, Leuven, Belgium. **Claudia Santini**, Katholieke Universiteit Leuven, Leuven, Belgium. Interuniversity Microelectronic Centre, Leuven, Belgium. **Philippe Vereecken,** Katholieke Universiteit Leuven, Leuven, Belgium. Interuniversity Microelectronic Centre, Leuven, Belgium. **Stefan De Gendt**, Katholieke Universiteit Leuven, Leuven, Belgium. Interuniversity Microelectronic Centre, Leuven, Belgium. **Chris Van Haesendonck**, Katholieke Universiteit Leuven, Leuven, Belgium.

18:15-18:30 Contributed Talk CT11

Carbon Nanotube Based NEMS as Magnetic Force Detector

Marc Ganzhorn, Institut Néel, CNRS, Grenoble, France. **Matias Urdampilleta**, Institut Néel, CNRS, Grenoble, France. **Antoine Reserbat-Plantey,** Institut Néel, CNRS, Grenoble, France. **Viet Ngoc Nguyen,** Institut Néel, CNRS, Grenoble, France. **Jean-Pierre Cleuziou,** Institut Néel, CNRS, Grenoble, France. **Wolfgang Wernsdorfer,** Institut Néel, CNRS, Grenoble, France.

18:30-19:30 Sponsored Reception (Pembroke College)
"AIXTRON EVENT"

Tuesday 12th July

- ***Structure and Characterization 1 (chair: Andrea Ferrari)***

8:00-19:00 Registration in Corn Exchange

8:30-9:15 Keynote K3

Tuning the Band Structure and Optical Properties of Graphene

Tony Heinz, Columbia University, New York, USA.

9:15-9:30 Contributed Talk CT12

Photoluminescence due to Exciton Recombination in Metallic Single-Walled Carbon Nanotubes

Arao Nakamura, Department of Applied Physics, Nagoya University, Japan. **Takeshi Koyama**, Department of Applied Physics, Nagoya University, Japan. **Satoru Shimizu**, Department of Applied Physics, Nagoya University, Japan. Takeshi Saito, Research Center for Advanced Carbon Materials, AIST. **Yasumitsu Miyata**, Department of Chemistry, Nagoya, Japan. **Hisanori Shinohara**, Department of Chemistry, Nagoya, Japan.

9:30-9:45 Contributed Talk CT13

All Carbon Nanotube Electrochromic Device: Controllable Visible Color Changes in Metallic Single-Wall Carbon Nanotubes

Kazuhiro Yanagi, Dept. of Phys., Hachioji Metropolitan University, Tokyo, Japan. **Rieko Moriya,** Dept. of Phys., Tokyo Metropolitan University, Hachioji, Japan. **Yohei Yomogida**, IMR, Tohoku University, Sendai, Japan. **Taishi Takenobu,** Dept. of Appl. Phys., Waseda University, Shinjyuku, Japan. **Yasuhisa Naitoh**, AIST, Tsukuba, Japan. **Takao Ishida**, AIST, Tsukuba, Japan. **Hiromichi Kataura**, AIST, Tsukuba, Japan. **Kazuyuki Matsuda**, Dept. of Phys., Hachioji Metropolitan University, Tokyo, Japan. **Yutaka Maniwa**, Dept. of Phys., Hachioji Metropolitan University, Tokyo, Japan.

9:45-10:45 Coffee & Poster Session 3 (Guildhall)

- ***Structure and Characterization 2 (chair: Andrea Ferrari)***

10:45-11:15 Invited Speaker I3

Vibrational and Optical Excitations of Nanocarbons under External Pertubation

Stephanie Reich, Freie Universitat Berlin, Berlin, Germany.

11:15-11:30 Contributed Talk CT14

Origin of Strain-Dependent Splitting of the Double-Resonance Raman Scattering Band in Graphene

Hyeonsik Cheong, Department of Physics, Sogang University, Seoul, Korea. **Duhee Yoon**, Department of Physics, Sogang University, Seoul, Korea. **Young-Woo Son**, School of Computational Sciences, Korea Institute for Advanced Study, Seoul, Korea.

11:30-11:45 Contributed Talk CT15

Probing charge transfer between shells of double-walled carbon nanotubes sorted by outer-wall

Martin Kalbac, J. Heyrovský Institute of Physical Chemistry, ASCR, Prague, Czech Republic. **Alexander Green**, Northwestern University, Evanston, US. **Mark Hersam**, Northwestern University, Evanston, US. **Ladislav Kavan**, J. Heyrovský Institute of Physical Chemistry, ASCR, Prague, Czech Republic.

11:45-12:00 Contributed Talk CT16

Coherent phonon spectroscopy of single wall carbon nanotubes

Riichiro Saito, Department of Physics, Tohoku University, Japan. **Ahmad R. T. Nugraha**, Department of Physics, Tohoku University, Japan. **Kentaro Sato**, Department of Physics, Tohoku University, Japan. **Gary D. Sanders**, Department of Physics, University of Florida, Gainesville, FL 32611-8440, USA. **Christopher J. Stanton**, Department of Physics, University of Florida, Gainesville, FL 32611-8440, USA. **Gene Dresselhaus**, Massachussetts Institute of Technology, Cambridge, MA 02139-4307, USA. **Mildred S.Dresselhaus**, Massachussetts Institute of Technology, Cambridge, MA 02139-4307, USA.

12:00-14:00 Lunch and Poster Session 4 (Pembroke College)

- ***Devices and Physics 1 (chair: Eleanor Campbell)***

14:00-14:30 Invited Speaker I4

Nanotubes Spin As They Grow During Field Emission

Catherine Journet, Université Claude Bernard Lyon 1 & CNRS, Villeurbanne, France. **A. Derouet**, Université Claude Bernard Lyon 1 & CNRS, Villeurbanne, France. **A. Pascale**, Université Claude Bernard Lyon 1 & CNRS, Villeurbanne, France. **S.T. Purcell**, Université Claude Bernard Lyon 1 & CNRS, Villeurbanne, France.

14:30-14:45 Contributed Talk CT17

Gate-Dependent Spin-Orbit Coupling In Multi-Electron Carbon Nanotubes

Kasper Grove-Rasmussen, Niels Bohr Institute & Nano-Science Center, University of Copenhagen, Copenhagen, Denmark. NTT Basic Research Laboratories, NTT Corporation, Atsugi, Japan. **Thomas Sand Jespersen**, Niels Bohr Institute & Nano-Science Center, University of Copenhagen, Copenhagen, Denmark. **Jens Paaske**, Niels Bohr Institute & Nano-Science Center, University of Copenhagen, Copenhagen, Denmark. **Koji Muraki**, NTT Basic Research Laboratories, NTT Corporation, Atsugi, Japan. **Toshimasa Fujisawa**, Tokyo Institute of Technology, Tokyo, Japan. **Jesper Nygård**, Niels Bohr Institute & Nano-Science Center, University of Copenhagen, Copenhagen, Denmark. **Karsten Flensberg**, Niels Bohr Institute & Nano-Science Center, University of Copenhagen, Copenhagen, Denmark.

14:45-15:00 Contributed Talk CT18

Electrical Transport Properties of Double-wall Carbon Nanotube

Subhadeep Datta, Neel Institute, CNRS, Joseph Fourier University, BP 166, 25 Avenue des Martiers, Grenoble, France. **Shidong Wang**, Department of Mechanical Engineering and Materials Science, Duke University, Durham, USA. **Carmen Timaciu**, CNRS, Institut Carnot Cirimat, 31062 Toulouse, France. **Emmanuel Flahaut**, CNRS, Institut Carnot Cirimat, 31062 Toulouse, France. **Laetitia Marty**, Neel Institute, CNRS, Joseph Fourier University, BP 166, 25 Avenue des Martiers, Grenoble, France. **Milena Grifoni, Wolfgang Wernsdorfer.**

15:00-15:15 Contributed Talk CT19

Spin-Transport In Carbon Nanotube Quantum Dots

Mark Elkin, The University of Leeds, Leeds, UK. **Chris Allen** The University of Leeds, Leeds, UK. **Bryan Hickey,** The University of Leeds, Leeds, UK. **Andreas Baumgartner**, The University of Basel, Basel, Switzerland. **Christian Schönenberger,** The University of Basel, Basel, Switzerland.

15:15-15:30 Contributed Talk CT20

Effects of Chirality and Impurities on the Performance of Carbon Nanotube-Based Piezoresistive

Michael Cullinan, Massachusetts Institute of Technology, Cambridge, USA. **Martin Culpepper**, Massachusetts Institute of Technology, Cambridge, USA.

15:30-16:30 Coffee and Poster Session 3 (Guildhall)

- ***Devices and Physics 2 (chair: Eleanor Campbell)***

16:30-17:00 Invited Speaker I5

Thermoelectric Properties and Environmental Effects in Carbon Nanotube Devices

Richard Martel, Université de Montréal, Montréal, Canada.

17:00-17:15 Contributed Talk CT21

Trapping Heat in a Conductor: Unusual Light-Induced-Heat Localization in Carbon Nanotube Forests

Alireza Nojeh, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Mehran Vahdani Moghaddam**, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Alireza Nojeh**, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada.

- ***Chemistry and Biology (chair: Eleanor Campbell)***

17:15-17:30 Contributed Talk CT22

Designing the interaction between organic chromophores and carbon nanotubes

Enzo Menna, Dipartimento di Scienze Chimiche and ITM-CNR, Padova, Italy. **Patrizio Salice**, Dipartimento di Scienze

Chimiche and ITM-CNR, Padova, Italy. **Michele Maggini**, Dipartimento di Scienze Chimiche and ITM-CNR, Padova, Italy. **Tommaso Carofiglio**, Dipartimento di Scienze Chimiche and ITM-CNR, Padova, Italy.

17:30-17:45 Contributed Talk CT23

Synthesis and Characterisation of Photoactive Systems Combining Carbon Nanotubes

Ismail Hijazi, Laboratoire d'Electronique Moléculaire, SPEC (URA 2464), CEA Saclay, Gif sur Yvette, France. **Khanh-Hy LE HO,** Laboratoire d'Electronique Moléculaire, SPEC (URA 2464), CEA Saclay, Gif sur Yvette, France. **Guillaume CLAVE**, Laboratoire d'Electronique Moléculaire, SPEC (URA 2464), CEA Saclay, Gif sur Yvette, France. **Arianna FILORAMO**, Laboratoire d'Electronique Moléculaire, SPEC (URA 2464), CEA Saclay, Gif sur Yvette, France. **Stéphane CAMPIDELLI**, Laboratoire d'Electronique Moléculaire, SPEC (URA 2464), CEA Saclay, Gif sur Yvette, France.

17:45-18:00 Contributed Talk CT24

Carbon Nanotubes directly grown on Sharp Neural Microelectrodes Enable Electrochemical and Electrophysiological Performance

Davide Ricci, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genova, Italy. **Alberto Ansaldo**, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genova, Italy. **Elisa Castagnola**, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genova, Italy. **Emma Maggiolini**, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genova, Italy. **Luciano Fadiga**, Section of Human Physiology, University of Ferrara, Ferrara, Italy.

Wednesday 13th July

8:00-19:00 Registration in Corn Exchange

- ***Processing, Devices and Biology 1 (chair: John Robertson)***

8:30-9:15 Keynote K4

Liquid Phase Exfoliation of Low Dimensional Nanostructures: From Nanotubes and Graphene to Bismuth Telluride

Jonathan Coleman, School of Physics & CRANN, Trinity College Dublin, Dublin, Ireland.

9:15-9:30 Contributed Talk CT25

High-Performance Medium-Scale Integrated Circuits Using Carbon Nanotube Thin-Film Transistors

Takashi Mizutani, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Yuki Okigawa,** Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Yuki Ono**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Shigeru Kishimoto**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. Venture Business Laboratory, Nagoya University, Nagoya, Japan. **Yutaka Ohno**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan.

9:30-9:45 Contributed Talk CT26

Label-free Electrical Detection of Few Copies of DNA Based on Electrochemically Functionalized Single Wall Carbon Nanotubes

Tetiana Kurkina, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Alexis Vlandas**, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Ashraf Ahmad**, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Klaus Kern,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. **Kannan Balasubramanian**, Max-Planck-Institute for Solid State Research, Stuttgart, Germany.

9:45-10:00 Contributed Talk CT27

Development of Carbon Nanocapsules for Therapy and Ultrasensitive Imaging

Gerard Tobias, Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Bellaterra (Barcelona), Spain. **Lidong Shao**, Inorganic Chemistry Laboratory, University of Oxford, Oxford, UK. **Belén Ballesteros**, Centre d'Investigació en Nanociència i Nanotecnologia (ICN-CSIC), Bellaterra (Barcelona), Spain. **Patraporn Luksirikul**, Inorganic Chemistry Laboratory, University of Oxford, Oxford, UK. **Malcolm L.H. Green**, Inorganic Chemistry Laboratory, University of Oxford, Oxford, UK. **Mark G. Moloney**, Chemistry Research Laboratory, University of Oxford, Oxford, UK. **Sung You Hong**, Chemistry Research Laboratory, University of Oxford, Oxford, UK. **Benjamin G. Davis**, Chemistry Research Laboratory, University of Oxford, Oxford, UK. **Khuloud T. Al-Jamal**, The School of Pharmacy, University of London, London, UK. **Kostas Kostarelos**, The School of Pharmacy, University of London, London, UK.

10:00-11:00 Coffee & Poster Session 5 (Guildhall)

- ***Processing, Devices and Biology 2 (chair: Nicole Grobert)***

11:00-11:30 Invited Speaker I6

Separation of Single-Wall Carbon Nanotubes using Gel Chromatography

Hiromichi Kataura, Nanosystem Research Institute, AIST, Tsukuba, Japan. CREST, JST, Kawaguchi, Japan. **Huaping Liu**, Nanosystem Research Institute, AIST, Tsukuba, Japan. CREST, JST, Kawaguchi, Japan. **Daisuke Nishide**, Nanosystem Research Institute, AIST, Tsukuba, Japan. CREST, JST, Kawaguchi, Japan. **Shunjiro Fujii**, Nanosystem Research Institute, AIST, Tsukuba, Japan. CREST, JST, Kawaguchi, Japan. **Takeshi Tanaka**, Nanosystem Research Institute, AIST, Tsukuba, Japan.

11:30-11:45 Contributed Talk CT28

Assembly, Characterization and Applications of Chirality-Sorted Carbon Nanotube Device Arrays

Aravind Vijayaraghavan, The University of Manchester, Manchester, UK. Karlsruhe Institute of Technology, Karlsruhe, DE. **Marc Ganzhorn**, Karlsruhe Institute of Technology, Karlsruhe, DE. **Ninette Stuerzl**, Karlsruhe Institute of Technology, Karlsruhe, DE. **Simone Dehm**, Karlsruhe Institute of Technology, Karlsruhe, DE. **Frank Hennrich**, Karlsruhe Institute of Technology, Karlsruhe, DE. **Ralph Krupke**, Karlsruhe Institute of Technology, Karlsruhe, DE.

11:45-12:00 Contributed Talk CT29

A Rational Concept to Recognize Single-Walled Carbon Nanotubes with a Specific Chirality

Naotoshi Nakashima, Kyushu University, Fukuoka, Japan. **Hiroaki Ozawa**, Kyushu University, Fukuoka, Japan. **Tsuyohiko Fujugaya,** Kyushu, University, Fukuoka, Japan. **Yasuro Niidome**, Kyushu, University, Fukuoka, Japan. **Naosuke Hotta**, Nara Institute of Science and Technology, Nara, Japan. **Michiya Fujiki**, Nara Institute of Science and Technology, Nara, Japan.

12:00-12:30 Invited Speaker I7

The Toxicology Of Fibre-like Nanomaterials

Vicki Stone, School of Life Sciences, Heriot-Watt University, Edinburgh, UK. **Matthew Boyles**, School of Life Sciences, Heriot-Watt University, Edinburgh, UK.

12:30-14:30 Lunch & Poster Session 6

14:30 Free Time in Cambridge or Early Coach to Duxford for Excursion (limited to 250) and Banquet

17:30 Late Coach to Duxford for Banquet only

18:30-19:30 Pre-Banquet Reception Sponsorted by Thomas Swan Ltd.

19:30-22:00 Conference Banquet

22:30 Return to Cambridge

Thursday 14th July

8:00-19:00 Registration in Corn Exchange

- ***Applications and Devices 1 (chair: Milo Shaffer)***

8:30-9:15 Keynote K5

Graphene-based Materials: lessons at the interface

Rodney Ruoff, University of Texas at Austin, Texas, USA.

9:15-9:30 Contributed Talk CT30

Graphene and Carbon Nanotube Hybrid Papers for Electrodes in Li Ion Batteries and Supercapacitors

Jang Kyo Kim, Hong Kong University of Science and Technology, Hong Kong, China. **Biao Zhang**, Hong Kong University of Science and Technology, Hong Kong, China. **Zhen Dong Huang**, Hong Kong University of Science and Technology, Hong Kong, China. **Qing Bin Zheng**, Hong Kong University of Science and Technology, Hong Kong, China. **Nariman Yousefi**, Hong Kong University of Science and Technology, Hong Kong, China.

9:15-9:30 Contributed Talk CT31

Noncovalent Functionalization of Carbon Nanostructures: A DFT Investigation of Charge Transfer with Electron Donor-Acceptor Molecules and Protonation by Superacid

Tao Hu, Université de Toulouse; INSA, UPS, CNRS; LPCNO Toulouse, France. **Romuald Poteau**, Université de Toulouse; INSA, UPS, CNRS; LPCNO Toulouse, France. **Pascal Puech**, Université de Toulouse; UPS, CNRS; CEMES, Toulouse, France. **Iann Gerber**, Université de Toulouse; INSA, UPS, CNRS; LPCNO, Toulouse, France.

9:45-10:45 Coffee & Poster Session 7 (Guildhall)

- ***Structure and Composites (chair: Milo Shaffer)***

10:45-11:15 Invited Speaker I8

Carbon Nanotube-Incorporated Conductive Composites: Epoxy Matrix Pastes, Stretchable Conductive Films, and Further Applications

Seunghyun Baik, Department of Energy Science and Mechanical Engineering, Sungkyunkwan University, Suwon, Korea.

11:15-11:30 Contributed Talk CT32

Boosting Bucky Gel Actuators: Cross-Linked CNTs and Linear Motion

Alberto Ansaldo, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genoa, Italy. **Maurizio Biso**, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genoa, Italy. Luca Ceseracciu, Nanophysics, Italian Institute of Technology, Genoa, Italy. **Don N. Futaba**, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan. **Kenji Hata**, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan. **Alberto C. Barone**, Italian Institute of Technology, Genoa, Italy. **Davide Ricci**, Robotics, Brain & Cognitive Sciences Dept., Italian Institute of Technology, Genoa, Italy.

11:30-11:45 Contributed Talk CT33

A Novel 'Seamless Integration' Technology Platform For Dielectric Elastomer Actuators

Oliver Jost, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Esther Roch Talens**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **René Luther**, Chair of Polymeric Microsystems, Dresden University of Technology, Dresden, Germany. **Falko Schlenkrich**, Fraunhofer Institute for Ceramic Technologies and Systems, Dresden, Germany. **Tilo Köckritz**, Chair of Laser and Surface Technology, Dresden University of Technology, Dresden, Germany. **Lutz Seffner**, Fraunhofer Institute for Ceramic Technologies and Systems, Dresden, Germany. **Irene Jansen**, Chair of Laser and Surface Technology, Dresden University of Technology, Dresden, Germany. **Andreas Schönecker**, Fraunhofer Institute for Ceramic Technologies and Systems, Dresden, Germany. **Andreas Richter,** Chair of Polymeric Microsystems, Dresden University of Technology, Dresden, Germany.

11:45-12:00 Contributed Talk CT34

Inkjet-printed Single Walled Carbon Nanotube Electrode of Supercapacitors for Flexible Application

Tae-Hoon Kim, Department of Electrical Engineering and Computer Science, Seoul National Univ., Seoul, South Korea. **Hyun D. Yoo**, Department of Chemical and Biological Engineering, Seoul National Univ., Seoul, South Korea. **Seung M. Oh**, Department of Electrical Engineering and Computer Science, Seoul National Univ., Seoul, South Korea. **Yongtaek Hong**, Department of Electrical Engineering and Computer Science, Seoul National Univ., Seoul, South Korea.

12:00-14:00 Lunch & Poster Session 8 (Pembroke)

- ***Applications and Devices 2 (chair: Alan Windle)***

14:00-14:30 Invited Speaker I9

Nucleation and Growth of SWNTs with Controlled Structure: From Metal Catalysts to Carbon Nanomaterials Seeds

Jin Zhang, College of Chemistry and Molecular Engineering, Peking University, Beijing, China

14:30-14:45 Contributed Talk CT35

Grafting Carbon Nanotubes On Carbon Fibers: Influence Of The Growth Parameters On The Mechanical Properties

Niels De Greef, Dept. Metallurgy and Materials Engineering, Katholieke Universiteit Leuven (KUL), B-3001 Heverlee, Belgium. **Edina Couteau,** Laboratory of Solid-State Physics and Magnetism, Katholieke Universiteit Leuven, B-3001 Heverlee, Belgium. **Arnaud Magrez**, Institute of Condensed Matter Physics, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland. **Jin Won Seo**, Dept.

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14:45-15:00 Contributed Talk CT36

Balloon Launched on Multiwall Carbon Nanotube Tether in Antarctica

Gunther Kletetschka, Institute of Geology ASCR, Prague, Czech Republic. Catholic University of America, Washington DC, USA. **Emerald McKinney,** MIT, Cambridge, USA. **Darja Kawasumiova**, Catholic University of America, Washington DC, USA. **Morihiro Okada**, Shizuoka University, Hamamatsu, Japan. **Yoku Inoue**, Shizuoka University, Hamamatsu, Japan.

15:00-15:15 Contributed Talk CT37

Monodisperse SWNT: Applications and Device Performance

Nathan Yoder, NanoIntegris Inc., Skokie, USA. Northwestern University, Evanston, IL, USA. **Mark Hersam**, Northwestern University, Evanston, IL, USA.

15:15-15:30 Contributed Talk CT38

Hetero-junctions of Carbon Nanotubes and Boron Nitride Nanotubes

Yoke Khin Yap, Department of Physics, Michigan Technological Univerity, Houghton, U.S.A. **Jiesheng Wang**, Department of Physics, Michigan Technological Univerity, Houghton, U.S.A. **Chee Huei Lee**, Department of Physics, Michigan Technological Univerity, Houghton, U.S.A.

15:30-16:30 Coffee & Poster Session 7 (Guildhall)

- ***Nanotube-related structures and Applications (chair: Alan Windle)***

16:30-17:15 Keynote K6

Materials in the Flatland

Kostya Novoselov, University of Manchester, Manchester, UK.

17:15-17:30 Contributed Talk CT39

Auger-Induced Carrier Multiplication in Graphene

Ermin Malic, Technical University Berlin, Berlin, Germany. **Torben Winzer**, Technical University Berlin, Berlin, Germany. **Andreas Knorr**, Technical University Berlin, Berlin, Germany.

17:30-17:45 Contributed Talk CT40

Ink-Jet Printed Graphene Electronics

Felice Torrisi, Department of Engineering, University of Cambridge, UK. **Tawfique Hasan**, Department of Engineering, University of Cambridge, UK. **Weiping Wu**, Department of Engineering, University of Cambridge, UK. **Zhipei Sun**, Department of Engineering, University of Cambridge, UK. **Antonio Lombardo**, Department of Engineering, University of Cambridge, UK. **Tero Kulmala**, Department of Engineering, University of Cambridge, UK. **Gien W. Hsieh**, Department of Engineering, University of Cambridge, UK. **Francesco Bonaccorso**, Department of Engineering, University of Cambridge, UK. **DaPing Chu**, Department of Engineering, University of Cambridge, UK. **Andrea C. Ferrari,** Department of Engineering, University of Cambridge, UK.

17:45-18:00 Contributed Talk CT41

Ab Initio Quantum Transport in Defective and Chemically-modified Graphene

Jean-Christophe Charlier, University of Louvain, Institute of Condensed Matter and Nanosciences, Louvain-la-Neuve, Belgium.

18:00- 18:15 Poster Awards

18:15-18:45 Conference Summary

18:45-19:00 NT12 Preview and Conference Closing, **Mildred Dresselhaus**

Poster Session 1 (Guildhall)

- ***Structure, Mechanism and Devices 1***

Controlling The Function Of Carbon Nanotube Devices With Lithographically Defined Charge Patterns (P1)

Landon Prisbrey, Department of Physics, Oregon State University, Corvallis, USA. **Tristan Deborde**, Department of Physics, Oregon State University, Corvallis, USA. **Ji-Yong Park**, Division of Energy Systems Research and Deparment of Physics, Ajou University, Suwon, South Korea. **Ethan Minot**, Department of Physics, Oregon State University, Corvallis, USA.

Dissipation And Breakdown In Carbon Nanotube Network Transistors (P3)

David Estrada, Electrical and Computer Engineering Dept., Univ. of Illinois at Urbana-Champaign, Urbana, USA. **Chun-Ming Chin**, Electrical and Computer Engineering Dept., Univ. of Illinois at Urbana-Champaign, Urbana, USA. **Dominic Ortigara**, Electrical and Computer Engineering Dept., Univ. of Illinois at Urbana-Champaign, Urbana, USA. **Eric Pop**, Electrical and Computer Engineering Dept., Univ. of Illinois at Urbana-Champaign, Urbana, USA. Micro and Nanotechnology Laboratory, Univ. of Illinois at Urbana-Champaign, Urbana, USA. Beckman Institute for Advanced Studies, Univ. of Illinois at Urbana-Champaign, Urbana, USA.

Carbon Nanotube Based Device For The Highly Responsive And Selective Detection Of Terahertz Radiation (P5)

Yury Stebunov, Moscow Institute of Physics and Technology, Dolgoprudny, Russia. **Aleksey Arsenin**, Moscow Institute of Physics and Technology, Dolgoprudny, Russia. **Anatoliy Gladun**, Moscow Institute of Physics and Technology, Dolgoprudny, Russia. **Vyacheslav Semenenko**, Moscow Institute of Physics and Technology, Dolgoprudny, Russia. **Vladimir Leiman**, Moscow Institute of Physics and Technology, Dolgoprudny, Russia. Victor Ryzhii, University of Aizu Aizu-Wakamatsu, Japan. Japan Science and Technology Agency, CREST, Tokyo, Japan.

Polyaniline-Nanotube Single Molecular Field Effect Transistor (P7)

Ivan Bobrinetskiy, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Vladimir Nevolin**, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Alexey Romashkin**, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation.

High-Performance SWCNT Thin Film Transistors: Correlation between Alignment and Transport Characteristics (P9)

Shunjiro Fujii, Nanosystem Research Institute, National Institute of Advanced Industrial Science, Tsukuba, Japan. JST, CREST, Kawaguchi, Japan. **Takeshi Tanaka**, Nanosystem Research Institute, National Institute of Advanced Industrial Science, Tsukuba, Japan. **Hiromichi Kataura**, Nanosystem Research Institute, National Institute of Advanced Industrial Science, Tsukuba, Japan. JST, CREST, Kawaguchi, Japan.

Light Emission From Carbon Nanotubes in Silicon (P11)

Nicolas Izard, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. **Etienne Gaufrès**, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. Groupe R. Martel, University Montréal, Montréal, Canada. **Xavier Le Roux**, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. **Alexandre Beck**, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. **Adrien Noury**, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. **Delphine Marris-Morini**, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. Eric Cassan, Institut d'Electronique Fondamentale (IEF), CNRS-UMR 8622, Univ. Paris-Sud, Orsay, France. **Laurent Vivien**.

High-performance, Functional Carbon Nanotube Integrated Circuits On Plastic (P13)

Dong-ming Sun, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Marina Y. Timmermans**, Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Ying Tian**, Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Albert G. Nasibulin**, Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Esko I. Kauppinen**, Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Shigeru Kishimoto**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Takashi Mizutani**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Yutaka Ohno**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan.

Electrical Properties Of Vertically Aligned Carbon Nanotubes For Strain Measurements (P15)

Svenja Riekeberg, Institute of Microsystems Technology/ Hamburg University of Technology, Hamburg, Germany. **Joerg Mueller**, Institute of Microsystems Technology/ Hamburg University of Technology, Hamburg, Germany.

Flexible, Transparent, and Metal-Free Single-Walled Carbon Nanotube Field-Effect (P17)

Shinya Aikawa, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. Department of Electrical Engineering, Tokyo University of Science, Tokyo, Japan. **Erik Einarsson**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. Global COE for Mechanical Systems Innovation, The University of Tokyo, Tokyo, Japan. **Taiki Inoue**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Junichiro Shiomi**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Eiichi Nishikawa**, Department of Electrical Engineering, Tokyo University of Science, Tokyo, Japan. **Shigeo Maruyama**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan.

Complementary logic circuits by inkjet print viologen doping on semiconducting carbon nanotubes transistor (P19)

Siyoung Lee, **Sangwon Lee**, **Soomin Kim**, **WooJong**, **Youngwoo Jo**, **Younghee Lee**, BK21 Physics Division, Suwon, Korea. Department of Energy Science, Suwon, Korea. Center for Nanotubes and Nanostructured Composites, Suwon, Korea. Sungkyunkwan Advanced Institute of Nanotechnology, Suwon, Korea.

Torsional Actuator Based on Transition between Flattened and Tubular States in Carbon Nanotubes (P21)

Ryosuke Senga, Graduate School of Engineering, Osaka University, Osaka, Japan. JSPS Research Fellow, Japan. **Kaori Hirahara**, Graduate School of Engineering, Osaka University, Osaka, Japan. **Yasutaka Yamaguchi**, Graduate School of Engineering, Osaka University, Osaka, Japan. **Yoshikazu Nakayama**, Graduate School of Engineering, Osaka University, Osaka, Japan.

Development of Glucose Sensor Using CNT Compound Materials (P23)

Takamichi Hirata, Graduate School of Engineering, Tokyo City University, Tokyo, Japan. Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan. **Akira Katahira**, Graduate School of Engineering, Tokyo City University, Tokyo, Japan. **Chihiro Tsutsui**, Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan. **Masahiro Akiya**, Graduate School of Engineering, Tokyo City University, Tokyo, Japan. Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan.

Rims Of Carbon Nanotubes: A Possible Path To Chiral Selective Growth? (P25)

Heiko Dumlich, Freie Universität Berlin, 14195 Berlin, Berlin, Germany. **Stephanie Reich**, Freie Universität Berlin, 14195 Berlin, Berlin, Germany.

Dynamic And Charge Doping Effects On The Phonon Dispersion Of Graphene And Metallic Carbon Nanotubes: A Theoretical Study (P27)

Valentin Popov, Faculty of Physics, University of Sofia, Sofia, Bulgaria. **Philippe Lambin**, Research Center in Physics of Matter and Radiation, University of Namur, Namur. Belgium

Understanding Carbon Nanotube Chirality through Molecular Dynamic and Kinetic Monte Carlo Simulations (P29)

Feng Ding, ITC, Hong Kong Polytechnic Univervsity, Hong Kong, China.

Carbon Nanotubes As Substrates For Molecular Switches (P31)

Ermin Malic, Technical University Berlin, Berlin, Germany. **Andreas Knorr**, Technical University Berlin, Berlin, Germany.

Plasmon Generation By Optically Excited Excitons In Individual Single Wall Carbon Nanotubes (P33)

Igor Bondarev, Department of Physics, North Carolina Central University, Durham, USA. **Todor Antonijevic**, Department of Physics, North Carolina Central University, Durham, USA.

Monte Carlo Simulation of Water Nanosorption in Carbon Nanotubes (P35)

Vlasis Mavrantzas, University of Patras and FORTH-ICE/HT, Patras, Greece. **Orestis Alexiadis**, University of Patras and FORTH-ICE/HT, Patras, Greece. **Elena Karahaliou**, University of Patras and FORTH-ICE/HT, Patras, Greece.

Selective-area-grown Graphene Transistor by Thermal Chemical Vapor Deposition Method (P37)

Makoto Okai, Hitachi Research Lab., Hitachi Ltd., Hitachi, Japan. **Kumiko Tokumoto**, Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Takashi Kyotani,** Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Masahide Tokuda**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Ken Tsutsui**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Yasuo Wada**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan.

Determination of the Quantum Capacitance of Gated Bilayer Graphene Using a Five-Nearest Neighbor Tight-Binding Model (P39)

Elie Moujaes, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. **Ricardo Wagner Nunes,** Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. **Marcos Pimenta**, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil.

Electronic Structure of Graphene Adsorbed on (0001) Surfaces of SiO_{2} Substrate (P41)

Thanh Cuong Nguyen, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. Japan Science and Technology Agency, CREST, Tokyo, Japan. **Minoru Otani**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. Japan Science and Technology Agency, CREST, Tokyo, Japan. **Susumu Okada**, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan. Japan Science and Technology Agency, CREST, Tokyo, Japan.

Functionalization of graphene using nitrogen ion (P43)

Ki-Jeong Kim, Beamline Research Division, Pohang Accelerator Laboratory (PAL), Pohang 790-784, Republic of Korea. **Sena Yang**, Department of Chemistry, Sookmyung Women's University, Seoul 140-742, Republic of Korea. **Sunmin Park**, Department of Chemistry, Sookmyung Women's University, Seoul 140-742, Republic of Korea. **Hae Kyung Jung**, Department of Physics, Daegu University, Gyeongsan, Republic of Korea. **Bongsoo Kim**, Beamline Research Division, Pohang Accelerator Laboratory (PAL), Pohang 790-784, Republic of Korea. **Hangil Lee**, Department of Chemistry, SookmyungWomen's University, Seoul 140-742, Republic of Korea.

Resonant Raman Spectroscopy on ^{13}C Enriched Carbon Nanomaterials (P45)

Sara Costa, Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Cristiano Fantini**, Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Ariete Righi**, Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Alicja Bachmatiuk**, Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Mark H. Rümmeli**, Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Riichiro Saito**, Physics department of Tohoku University, Sendai, Miyagi, Japan. **Yu Feng Hao**, Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Carl Magnuson**, Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Rod Ruoff**, Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Marcos A. Pimenta**, Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil.

Element Mapping of Coated Multiwall Carbon Nanotubes (P47)

Meiken Falke, Bruker Nano GmbH, Berlin, Germany. **Andi Käppel**, Bruker Nano GmbH, Berlin, Germany. Mhairi Gass, SuperSTEM Laboratory, STFC Daresbury, UK. **Sascha Herrmann**, Chemnitz University of Technology, Center for Microstechnologies, Germany. **Thomas Waechtler**, Chemnitz University of Technology, Center for Microstechnologies, Germany. **Stefan Schulz**, Chemnitz University of Technology, Center for Microstechnologies, Germany.

Gate-Induced Blueshift and Quenching of Photoluminescence in Suspended Single-Walled Carbon Nanotubes (P49)

Yuichiro Kato, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Satoshi Yasukochi**, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Tomoaki Murai**, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shigeru Moritsubo**, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Takashi Shimada**, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Shigeo**

Maruyama, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan.

Length Analysis Of Single-Wall Carbon Nanotubes Cut By Sonication (P51)

Shigekazu Ohmori, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Takeshi Saito**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Kazuki Ihara**, Green Innovation Research Laboratories, NEC Corporation, Tsukuba, Japan. Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Yuki Asada**, Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Fumiyuki Nihey**, Green Innovation Research Laboratories, NEC Corporation, Tsukuba, Japan. Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Motoo Yumura**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Sumio Iijima**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

Quantum Conductance in Carbon Nanotube Systems (P53)

Mark Baxendale, Queen Mary Univesity of London, London UK.

Photocurrent Imaging Of Ultra Clean Suspended Carbon Nanotubes (P55)

Maria Barkelid, Quantum Transport Group, Delft University of Technology, Delft, The Netherlands. **Gilles Buchs**, Quantum Transport Group, Delft University of Technology, Delft, The Netherlands. **Gary A. Steele**, Molecular Electronics and Devices, Delft University of Technology, Delft, The Netherlands. **Valery Zwiller**, Quantum Transport Group, Delft University of Technology, Delft, The Netherlands.

STM Images of Carbon-Nanotube Quantum Dots: Seeing a Wigner Molecule of Correlated Electrons (P57)

Massimo Rontani, CNR-NANO Research Center S3, Modena, Italy. **Andrea Secchi**, CNR-NANO Research Center S3, Modena, Italy. University of Modena, Modena, Italy.

Two Time Scales Translational Dynamics of a One-Dimensional File of C60 Fullerenes Encapsulated Inside Single-Walled Carbon Nanotubes (P59)

Pascale Launois, AIST, Tsukuba, Japan. **Colin Bousige**, Institut Laue Langevin, Grenoble, France. AIST, Tsukuba, Japan. **Stéphane Rols**, Institut Laue Langevin, Grenoble, France. **Hiro Kataura**, Laboratoire de Physique des Solides, UMR Université-CNRS 8502, Orsay, France.

Photocatalytic Activity MWCNT/TiO2 Nanocomposites (P61)

Silvana Da Dalt, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Annelise Alves**, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Carlos Bergmann**, Federal University of Rio Grande do Sul, Porto Alegre, Brazil.

Phonon-Assisted Electron Emission From Individual Carbon Nanotube Shells (P63)

Xianlong Wei, Department of Electronics, Peking University, Beijing, P. R. China. MANA, National Institute for Materials Science (NIMS), Tsukuba, Japan. **Dmitri Golberg,** MANA, National Institute for Materials Science (NIMS), Tsukuba, Japan. **Qing Chen**, Department of Electronics, Peking University, Beijing, P. R. China. **Yoshio Bando**, MANA, National Institute for Materials Science (NIMS), Tsukuba, Japan. **Lian-Mao Peng**, Department of Electronics, Peking University, Beijing, P. R. China.

Real Time Manipulation and Characterization of Individual Boron Nitride Nanotubes by SPM-TEM (P65)

Yoke Khin Yap, Department of Physics, Michigan Technological University, Houghton, U.S.A. **Hessam M. Ghassemi**, Department of Mechanical Eng.- Eng. Mechanics, Michigan Technological University, Houghton, U.S.A. **Chee Huei Lee**, Department of Physics, Michigan Technological University, Houghton, U.S.A. **Reza S. Yassar,** Department of Mechanical Eng.- Eng. Mechanics, Michigan Technological University, Houghton, U.S.A.

Physicochemical Properties of Aluminum Oxide Substrates Probed with AFM, XPS and Contact Angle Goniometry (P67)

Placidus Amama, Air Force Research Laboratory, RXB, Wright-Patterson AFB, USA. University of Dayton Research Institute, Dayton, USA. Universal Technology Corporation, Dayton, USA. **Shawn Putnam**, Air Force Research Laboratory, RXB, Wright-Patterson AFB, USA. University of Dayton Research Institute, Dayton, USA. Universal Technology Corporation, Dayton, USA. **Benji Maruyama**, Air Force Research Laboratory, RXB, Wright-Patterson AFB, USA. University of Dayton Research Institute, Dayton, USA. Universal Technology Corporation, Dayton, USA.

Strength of Nanotubes, Filaments, and Nanowires From Sonication-Induced Scission (P69)

Yan Yan Shery Huang, Cavendish Laboratory, University of Cambridge, UK. **Tuomas Knowles**, Cavendish Laboratory, University of Cambridge, UK. **Eugene Terentjev**, Cavendish Laboratory, University of Cambridge, UK.

Transparent Electrode with a Nanostructured Coating (P71)

Yan Yan Shery Huang, Cavendish Laboratory, University of Cambridge, UK. **Eugene Terentjev**, Cavendish Laboratory, University of Cambridge, UK.

Auger Electron Emission From Carbon Nanotubes: An Atomistic Approach (P73)

Antonello Sindona, Dipartimento di Fisica, Università della Calabria, Via P. Bucci, Cubo 30C, Rende (CS), Italy. **Michele Pisarra**, Dipartimento di Fisica, Università della Calabria, Via P. Bucci, Cubo 30C, Rende (CS), Italy. **PierFrancesco Riccardi**, Dipartimento di Fisica, Università della Calabria, Via P. Bucci, Cubo 30C, Rende (CS), Italy. **Giovanni Falcone**, Dipartimento di Fisica, Università della Calabria, Via P. Bucci, Cubo 30C, Rende (CS), Italy.

Direct Growth Of Vertically Aligned Carbon Nanotubes On Aluminium Foils Over Large Areas (P75)

Raghunandan Ummethala, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany. **Vyacheslav Khavrus**, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany. **Maria Grazia Salvaggio**, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany. University of Messina, Messina, Italy. **Albrecht Leonhardt**, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany.

Growth of Carbon Nanotube Inside Diamond (P77)

Clément Hébert, Neel Institute, CNRS. CEA Grenoble. Joseph Fourier University Grenoble. **Sébastien Ruffinatto**, Neel Institute, CNRS. CEA Grenoble. Joseph Fourier University Grenoble. **David Eon**, Joseph Fourier University Grenoble. Neel Institute, CNRS. **Omnès Franck**, Neel Institute, CNRS. **Mailley Pascal**, CEA Grenoble, Joseph Fourier University, Grenoble.

In situ Evidence for Chirality-Dependent Growth Rates of Individual Carbon Nanotubes (P79)

Benji Maruyama, US Air Force Research Laboratory, Materials & Manufacturing Directorate, WPAFB, USA. **Rahul Rao**, US Air Force Research Laboratory, Materials & Manufacturing Directorate, WPAFB, USA. National Acadamy of Sciences, NRC Wash. DC, USA. **Tonya Cherukuri**, US Air Force Research Laboratory, Materials & Manufacturing Directorate, WPAFB, USA. National Acadamy of Sciences, NRC Wash. DC, USA. **David Liptak**, UES Inc., Dayton, USA. **Boris Yakobson**, Rice University, Houston, USA.

Characterization of Forest-like Carbon Nanotubes Synthesis Using Hexane (P81)

Luiz Acauan, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. **Carlos Bergmann**, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. **Rafael Silva**, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil.

Synthesis of nitrogen-doped carbon nanotubes by CVD correlating Raman spectroscopy and XPS (P83)

Tiva Sharifi, Umeå University, Umeå, Sweden. **Florian Nitze**, Umeå University, Umeå, Sweden. **HamidReza Barzegar**, Umeå University, Umeå, Sweden. **Thomas Wågberg**, Umeå University, Umeå, Sweden.

Controllable Growth of Vertically Aligned Few-Walled Carbon Nanotubes from FePt Catalyst: A Comparative Study with Fe Catalyst (P85)

Shisheng Li, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Chang Liu**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Libo Gao**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Bilu Liu**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Lili Zhang**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Pengxiang Hou**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. Man Song, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China. **Hui-ming Cheng**, 72 Wenhua Road, Shenyang 110016, P.R. China., Shenyang, China.

Separate Control of Catalyst Particle Formation and Single-Walled Carbon Nanotube Growth in Floating Catalyst Synthesis (P87)

Yoshikuni Sato, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. **Toshio Osawa**, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. **Suguru Noda**, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan.

Boron Nitride Nanotube Films Grown From Ink painting (P89)

Luhua Li, Deakin University, Geelong, Australia. **Ying Chen**, Deakin University, Geelong, Australia. **Alexey Glushenkov**, Deakin University, Geelong, Australia.

Electronic and Mechanical Modification of Single-Walled Carbon Nanotubes by Binding to Porphyrin Oligomers (P91)

Samuel Stranks, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Johannes Sprafke**, Department of Chemistry, University of Oxford, Chemistry Research Laboratory, Oxford, UK. **Harry Anderson**, Department of Chemistry, University of Oxford, Chemistry Research Laboratory, Oxford, UK. **Robin Nicholas**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK.

Novel Single-Walled Carbon Nanotube – Dual Polymer Nanostructures (P93)

Samuel Stranks, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Chaw-Keong Yong**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Christian Weisspfennig**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Anton Baker,** Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Jack Alexander-Webber**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Michael Johnston**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Laura Herz**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK. **Robin Nicholas**, Department of Physics, University of Oxford, Clarendon Laboratory, Oxford, UK.

Poster Session 2 (Pembroke College)

- ***Structure, Mechanism and Devices 2***

Semiconducting Polymer/Carbon Nanotube Blends for Ambipolar Light-Emitting Field-Effect Transistors (P97)

Jana Zaumseil, Institute of Polymer Materials, University Erlangen-Nuremberg, Erlangen, Germany. **Michael C. Gwinner**, Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, UK. **Florian Jakubka**, Institute of Polymer Materials, University Erlangen-Nuremberg, Erlangen, Germany. **Florentina Niebelschütz**, Institute of Polymer Materials, University Erlangen-Nuremberg, Erlangen, Germany. **Henning Sirringhaus**, Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, UK.

Measurement of the Defect-induced Barirer Height in Metallic CNTs (P99)

Yuki Okigawa, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Yutaka Ono**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Shigeru Kishimoto**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. Venture Business Laboratory, Nagoya University, Nagoya, Japan. **Takashi Mizutani**, Department of Quantum Engineering, Nagoya University, Nagoya, Japan.

Time-Dependent Gray-Body Thermal Emission from Pulsed Laser Irradiated Vertically Aligned Carbon Nanotube Arrays (P101)

Christopher Davis, ECE Department, The University of Maryland, College Park, USA. **Raul Fainchtein**, The Johns Hopkins University Applied Physics Laboratory, Laurel, USA. **David Brown**, The Johns Hopkins University Applied Physics Laboratory, Laurel, USA. **Karen Siegrist**, The Johns Hopkins University Applied Physics Laboratory, Laurel, USA. **Andrew Monica**, The Johns Hopkins University Applied Physics Laboratory, Laurel, USA. **Ehren Hwang**, ECE Department, The University of Maryland, College Park, USA. **Stuart Milner**, ECE Department, The University of Maryland, College Park, USA.

Optimizing Carbon Nanotube Network Morphology for Thin Film Transistors (P103)

Marina Y. Timmermans, Aalto University School of Science,Dept. of Applied Physics, NanoMaterials Group, Espoo, Finland. **David Estrada**, University of Illinois at Urbana-Champaign, Dept. of Electrical and Computer Eng., Urbana, Illinois, USA. **Dong-Ming Sun**, Department of

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Photoemission Study of Energy Band Alignment of CNT/SiC Heterostructure Formed by Surface Decomposition (P105)

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Direct Conversion Neutron Detection with Nanotubes (P107)

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Electronic and Optical Properties of Carbon Nanotubes Films (P109)

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Effect Of Design Architecture On The Performance Of CNT Supercapacitors (P111)

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Low Cost Roll To Roll Fabrication Of Flexible Carbon Nanotube Based Field Effect Devices (P113)

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Single-Walled Carbon Nanotube Based Schottky Device as a Highly Sensitive Biosensor (P115)

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Origin of Capacitance Change in Semiconducting and Metallic Carbon Nanotubes (P117)

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Oxygen-Free Fabrication and Characterization of n-Type SWNT-FETs with Al Contacts (P119)

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Single-Walled Carbon Nanotubes/Polymer Composite Electrodes Patterned Directly from Solution (P121)

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Electrical Stability of Carbon Nanotube Thin-Film Transistor (P123)

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Diffusion vs Sub-diffusion of Excitons in HiPCO and CoMoCAT Carbon Nanotubes (P125)

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Large Hyperfine Enhancement At Lattice Defects In Single-Walled Carbon Nanotubes (P127)

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Growth Mechanisms Of Single Wall Carbon Nananotube From Tight Binding Computer Simulations (P129)

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Stacking Dependent Electronic Structure and Transport in Bilayer Graphene Nanoribbons (P131)

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In situ NEXAFS study of Initial Growth Process of Carbon Nanotube by Surface Decomposition of SiC (P133)

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Tip Enhanced Raman Scattering & Multiprobe Scanned Probe Imaging & NanoLithography of Carbon Nanotubes & Graphene (P135)

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High-Resolution Photocurrent Microscopy of Carbon Nanotube Film Photodiodes (P137)

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In Situ TEM Investigations Of Electronic And Mechanical Properties Of Nanotube Architectures (P139)

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Quantification of the Metallic/Semiconducting Ratio of Bulk SWCNT Samples by Cobalt Porphyrin Probe EPR Spectroscopy(P141)

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Micro-Dielectric Environment Effect on the Band Gaps of (n,m) Single-Walled Carbon Nanotubes (P143)

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Evaluation of Intrinsic Exciton Diffusion Length in Long Single-Walled Carbon Nanotubes (P145)

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Interfaces in Carbon Nanotube FETs Studied by Kelvin Probe Force Microscopy (P149)

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Combining Independent Measurements on Individual Carbon Nanotubes (P151)

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Interaction Between Carbon Nanotubes And Plasmonic Surfaces (P153)

Christian Lehmann, FU Berlin, Berlin, Germany. **Stephanie Reich**, FU Berlin, Berlin, Germany. **Piotr Patoka**, FU Berlin, Berlin, Germany. **Michael Giersig**, FU Berlin, Berlin, Germany.

Single-Molecule and Bulk Spectroscopy of the Electronic Transitions for Empty and Water-Filled Carbon Nanotubes (P155)

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55 cm Long Semiconducting Super-Strong Cnts: Fabrication, Optical Visualization Macroscopical Manipulation And Their Capacity For The Storage of Mechanical Energy (P157)

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Surface Modification of Directly Spun Carbon Nanotube Films (P159)

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Ingress of Liquid into a CNT Assembly (P161)

Jing Qiu, University of Cambridge, Cambridge, UK. **Juan Vilatela**, University of Cambridge, Cambridge, UK. **Alan Windle**, University of Cambridge, Cambridge, UK.

Electromechanical Properties Of Carbon Nanotube Fibre Under Strain (P163)

Agnieszka Lekawa-Raus, University Of Cambridge, Department of Materials Science and Metallurgy, Cambridge, United Kingdom. **Krzysztof Koziol**, University Of Cambridge, Department of Materials Science and Metallurgy, Cambridge, United Kingdom. **Alan Windle**, University Of Cambridge, Department of Materials Science and Metallurgy, Cambridge, United Kingdom.

Magnetic Behavior of Pure and N-doped MWNT Nanostructures with Controlled Morphologies (P165)

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Effect of Carbon Sources on the Diameter of SWCNTs Synthesized by DIPS Method (P167)

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Hetero-junctions of Carbon Nanotubes and Boron Nitride Nanotubes (P169)

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The Synthesis of Vertically-aligned Carbon Nanotubes on an Aluminum Foil Laminated on Stainless Steel (P171)

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Changing Chirality During SWNT Growth: A Reactive Molecular Dynamics / Monte Carlo Study (P173)

Erik Neyts, University of Antwerp, Antwerp, Belgium. **Adri van Duin**, The Pennsylvania State University, State College, USA. **Annemie Bogaerts,** University of Antwerp, Antwerp, Belgium.

Simulated PECVD Growth Of Aligned Single Walled Carbon Nanotubes (P175)

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Ethanol Assisted Floated CCVD Synthesis of Few Walled Carbon Nanotubes (P177)

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Single-Walled Carbon Nanotube Growth at Low Pressure from Pt catalyst using Alcohol Gas Source Method (P179)

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Towards Chirality-controlled Growth of Single-walled Carbon Nanotubes (P181)

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Laser-Induced Growth Of Carbon Nanotubes (P183)

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Reversible Laser-Induced Modification Of The Optical Properties Of SWCNTs (P185)

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Healing Mechanisms During The Growth Of Carbon Nanotubes (P187)

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Synthesis and Characterization of Diameter-Controlled Single-Walled Carbon Nanotubes by Arc Discharge (P189)

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Poster Session 3 (Guildhall)

- ***Structure, Mechanism and Devices 3***

Repeated Purification of Semiconducting and Metallic Carbon Nanotubes by Electric-field induced Layer Formation method (P2)

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Electrical Properties of Carbon Nanotube Thin Film Transistor Dependent on Alignment of Carbon Nanotube Channel Network (P4)

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A Thickness Dependant Response Mechanism for Gas Sensors Based on Sorted Semi-Conducting SWCNT Films (P6)

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Carbon Nanotube Based Flexible Transparent Thin Film Transistor (P8)

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Carbon Nanotube Based Flexible Field Emitters (P10)

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Carbon Nanotube Based Humidity Sensor (P12)

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Very Stable Electron Emission from Carbon Nanotube Matrices (P14)

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Schottky Solar Cells Based On Graphene And Silicon (P16)

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Nitrogen Doped Single Walled Carbon Nanotube films : New strategy for Ammonia Gas Sensing Selectivity (P18)

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Polarization Switching And Ferroelectric Field Effect In Devices Combining Carbon Nanotubes With Epitaxial Pb(Zr0.2Ti0.8)O3 Thin Films (P20)

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Carbon Nanotubes As Local Probes For Ferroelectric And Multiferroic Thin Films (P22)

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Gate Tuning of Optical Fabry-Perot Cavities with Suspended Multilayer Graphene Mirrors (P24)

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Hydrogen Sensing With Diameter And Chirality Sorted Carbon Nanotubes (P26)

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Low Bias Operation & Individual Charge Detection of Carbon & Nanotube Quantum Nano Memory (P28)

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Enhancement of high-frequency characteristics of carbon nanotube FETs by chemical doping (P30)

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Molecular Nanostructures with Carbon Nanotube-Molecule Heterojunctions (P32)

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Functionalization of Single-Walled Carbon Nanotubes with Ribonucleic Acids (P34)

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Possible CVD Synthesis Region of Single-walled Carbon Nanotube in the Bachmann Diagram (P36)

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Molecular Orbital Calculations of Small Graphene-Like Species to Interpret Their Site-Dependent EELS (P38)

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Birth-Death Markov Modeling for Single Molecule Counting using Single-Walled Carbon Nanotube Fluorescent Sensor Arrays (P40)

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Spin-Related Novel Optical Phenomena in Single-Walled Carbon Nanotubes (P42)

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Stretching A Bilayer Graphene (P44)

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Graphene xylophone (P46)

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Ultrafast Non-Thermal Electron Dynamics In Single Layer Graphene (P48)

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Characterization of Carbon Nanotubes with a Confocal Raman Microscope (P50)

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Imaging & Tracking Single-Walled Carbon Nanotube Dynamics in Rock-Like Porous Media (P52)

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Direct Measurements Of Bending Stiffness And Rippling Phenomena In Free-Standing Carbon Nanotubes (P54)

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In Situ Raman Spectroscopy Of Carbon Nanotubes During Growth By A Local Heating Technique (P56)

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Effect of Laser Power on Raman Spectrum of Single-Walled Nanotubes (P58)

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Doping Single-Walled Carbon Nanotubes With Nitrogen: A STM And STS Investigation (P60)

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Anisotropic Optical Absorption Of Individual Carbon Nanotubes (P62)

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Effect of Variations in Carbon-Carbon Bond Lengths on the Optical Absorption Properties of Different Carbon Nanotubes (P64)

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Optical And Electrical Properties Of Single-Walled Carbon Nanotubes Arrays (P66)

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Electrochemical Decoration Of Carbon Nanotube Interconnects For Improvement Of The Electrothermal Properties (P68)

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Boron Doped Single Wall Carbon Nanotubes Grown by High Vacuum CVD Using a New Precursor (P70)

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The World of CNT Forests (P72)

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Low Temperature Synthesis of Metal-Catalyst-Free CNTs Using a Modified Chemical Vapour Deposition System. (P74)

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Effect Of Thin Film Catalyst Pattern Size On Carbon Nanotube Forest Growth. (P76)

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Chemical Vapor Deposition Growth Of CNTs And Other Nanocarbons From C60 (P78)

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Directly Drawing Self-Assembly, Porous And Continuous Graphene Fibres From CVD-Grown Graphene Films (P80)

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Optimization and Understanding of Spin-capable CNT Growth using Water-assisted Chemical Vapor Deposition (P82)

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The Effect of Buffer Layer Deposition on Diameter and Alignment of Carbon Nanotubes in Water-assisted Chemical Vapor Deposition (P84)

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Nitrogen-induced CNT Catalyst Stabilisation For Chirality Control (P86)

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Water-Free Chemical Vapor Deposition of Tall Multiwalled Carbon Nanotube Forests (P88)

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Morphology Control Of CNTs In Continuously Spun Fibres (P90)

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Selective Synthesis of (9,8) Single Walled Carbon Nanotubes (P92)

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Ultra-High Vacuum-Assisted Control of Metal Nanoparticles for Horizontally-Aligned Single-Walled Carbon Nanotubes with Uniform Diameter (P94)

Hiroki Ago, Kyushu University, Fukuoka, Japan. **Takafumi Ayagaki**, Kyushu University, Fukuoka, Japan. **Yui Ogawa,** Kyushu University, Fukuoka, Japan. **Masaharu Tsuji**, Kyushu University, Fukuoka, Japan.

Poster Session 4 (Pembroke College)

- ***Structure, Mechanism and Devices 4***

Growth and Characterization of TiO2 Nanotubes for Resistive Switching Memory Applications (P98)

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Numerical Study on AC Response of Defective Carbon Nanotubes (P100)

Daisuke Hirai, The University of Tokyo, Tokyo, Japan. **TakahiroYamamoto**, Tokyo University of Science, Tokyo, Japan. **Satoshi Watanabe**, The University of Tokyo, Tokyo, Japan.

Exciton Crystals and Exciton Reactions in Carbon Nanotubes (P102)

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Surrey, Guildford, UK. **Tariq Sajjad**, Advanced Technology Institute, University of Surrey, Guildford, UK. **Richard Sutton**, Advanced Technology Institute, University of Surrey, Guildford, UK. **Sophia Siddique**, Advanced Technology Institute, University of Surrey, Guildford, UK. **Zhongyang Wang**, Advanced Technology Institute, University of Surrey, Guildford, UK. **Konstantin Litvinenko**, Advanced Technology Institute, University of Surrey, Guildford, UK. **Quan-Hong Yang**, School of Chemical Engineering and Technology, University of Tianjin, Tianjin, China. **Tom Brown,** School of Chemistry, University of Southampton, Southampton, UK. **Wei Loh**, Optoelectronics Research Centre, University of Southampton, Southampton, UK.

Field Electron Emission of Carbon Nanotubes Grown on Titanium Substrates by Hot-filament Chemical Vapor Deposition (P104)

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Contact Geometry Dependent Transport and Hysteresis in Carbon Nanotube Field Effect Transistors (P106)

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The Ultimate Field Emitter Using Millimeter Long Carbon Nanotubes (P108)

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Separation Of Metallic And Semiconducting SWCNTs For Integrated Circuits By Polarized Laser Radiation (P110)

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Carbon Nanotubes as Cooper Pair Beam Splitters (P112)

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Carbon Nanotube-Based Magnetic Nanohybrids (P114)

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Plasma Post-Synthesis Treatment Of Carbon Nanowalls And Their Characteristics (P116)

Sorin Vizireanu, **Daniel Stoica**, **Claudia Stancu**, **Bogdana Mitu**, **Catalin Luculescu**, **Leona Nistor**, **Gheorghe Dinescu**, National Institute for Laser, Plasma and Radiation Physics, Bucharest-Magurele, Romania. National Institute for Materials Physics, Bucharest-Magurele, Romania.

Magnetoconductance of Carbon Nanotubes : From Spin-orbit Interaction to Band-gap Engineering (P118)

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Tuning of Metal Work Function and Schottky Energy Barrier Using Different Terminal Group of Thiolated Molecules in Carbon Nanotube Based Schottky Device (P120)

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SWCNT Alignment By Different Techniques (P122)

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Liquid-phase Alkali-doping of Individual CNT FETs (P124)

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Using Double Wall Carbon Nanotubes as Electromechanical device (P126)

Rodrigo Amorim, Universidade Federal do ABC - UFABC, Santo Andre, Brasil. **Antonio Silva**, Universidade de Sao Paulo - USP, Sao Paulo, Brasil. **Adalberto Fazzio**, Universidade de Sao Paulo - USP, Sao Paulo, Brasil. Laboratorio Nacional de Luz Sinclotron, Campinas, Brasil. **Alexandre Rocha**, Universidade Federal do ABC - UFABC, Santo Andre, Brasil.

Preparation of Iron Catalyst Nanoparticle for Single-Walled Carbon Nanotube Forest from Various Iron Compounds (P128)

Shunsuke Sakurai, Nanotube Research Center, AIST, Tsukuba, Japan. **Hidekazu Nishino**, Nanotube Research Center, AIST, Tsukuba, Japan. **Don Futaba**, Nanotube Research Center, AIST, Tsukuba, Japan. **Satoshi Yasuda**, Nanotube Research Center, AIST, Tsukuba, Japan. **Takeo Yamada**, Nanotube Research Center, AIST, Tsukuba, Japan. **Alan Maigne**, Gatan, Inc., Tokyo, Japan. **Eiichi Nakamura**, The University of Tokyo, Tokyo, Japan. **Motoo Yumura**, Nanotube Research Center, AIST, Tsukuba, Japan. **Kenji Hata**, Nanotube Research Center, AIST, Tsukuba, Japan.

Directed Motion Of Carbon Nanotube In Water Driven By Non-uniform Electric Field (P130)

Xu Zhen, Shanghai Institute of Applied Mathematics and Mechanics,Shanghai University, Shanghai, China. **Hu Guohui**, Shanghai Institute of Applied Mathematics and Mechanics,Shanghai University, Shanghai, China. **Zhou Zhewei**, Shanghai Institute of Applied Mathematics and Mechanics,Shanghai University, Shanghai, China.

Modelling the Effects of High Exciton Density on the Optical Properties of Carbon Nanotubes (P132)

Matthew Brown, Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, United Kingdom. **Aleksey Andreev**, Hitachi Cambridge Laboratory, Cavendish Laboratory, Cambridge, United Kingdom.

How do Carbon Atoms Assemble at The sp2-edge? (P134)

Yuanyue Liu, Dept. of MEMS, Rice University, Houston, TX, USA. **Vasilii Artyukhov**, Dept. of MEMS, Rice University, Houston, TX, USA.

Energetics and Electronic Structures of Graphene Adsorbed on HfO2 Surfaces (P136)

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Selective Edge Functionalization of Graphene by Room Temperature Mild Plasma Treatment (P138)

Toshiaki Kato, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Liying Jiao**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xinran Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Hailiang Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xiaolin Li**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford USA. **Li Zhang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Rikizo Hatakeyama**, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Hongjie Dai**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA.

Low-wavenumber-extended confocal Raman microscopy on single-walled carbon nanotubes (P140)

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Raman Spectra on Bilayer and Trilayer Graphene (P142)

Kentaro Sato, Tohoku University, Sendai, Japan. **Jin Sung Park**, Kyushu University, Fukuoka, Japan. **Chunxiao Cong**, Nanyang Technological University, Singapore. **Ting Yu**, Nanyang Technological University, Singapore. National University of Singapore, Singapore. Riichiro Saito, Tohoku University, Sendai, Japan.

The Raman Study of Strained Graphene during Micro Transfer Printing Process (P144)

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Collection-Mode Near-Field Nanoscopy of Individual CNTs (P146)

Francesco Tantussi, CNISM, Pisa, Italy. **Francesco Fuso**, CNISM, Pisa, Italy. Dipartimento di Fisica, Universita di Pisa, Pisa, Italy. **Maria Allegrini**, CNISM, Pisa, Italy. Dipartimento di Fisica, Universita di Pisa, Pisa, Italy.

Optical Heterodyne Detection Visualizes the Spatial Resonance of Multilayer Graphene Cantilevers (P148)

Yuichi Yuasa, Osaka Prefecture University, Sakai, Japan. **Atsushi Yoshinaka**, Osaka Prefecture University, Sakai, Japan. **Takayuki Arie**, Osaka Prefecture University, Sakai, Japan. CREST-JST, Kawaguchi, Japan. **Seiji Akita**, Osaka Prefecture University, Sakai, Japan. CREST-JST, Kawaguchi, Japan.

Direct Measurement of the Bending Stiffness of Individual Vertically Aligned Carbon Nanofibers (VACNFs) (P150)

Farzan Alavian Ghavanini, Chalmers University of Technology, Gothenburg, Sweden. **Henrik Jackman**, Karlstad University, Karlstad, Sweden. **Krister Svensson**, Karlstad University, Karlstad, Sweden. **Per Lundgren**, Chalmers University of Technology, Gothenburg, Sweden. **Peter Enoksson**, Chalmers University of Technology, Gothenburg, Sweden.

Wall-Selective Probing Of Double-Walled Carbon Nanotubes Using Covalent Functionalization (P152)

Delphine Bouilly, Université de Montréal, Montréal, Canada. **Janie Cabana**, Université de Montréal, Montréal, Canada. **François Meunier**, Université de Montréal, Montréal, Canada. **Maxime Desjardins-Carrière**, École Polytechnique de Montréal, Montréal, Canada. **François Lapointe**, Université de Montréal, Montréal, Canada. **Philippe Gagnon**, École Polytechnique de Montréal, Montréal, Canada. **Francis L.-Larouche**, Université de Montréal, Montréal, Canada. **Elyse Adam**, École Polytechnique de Montréal, Montréal, Canada. **Matthieu Paillet**, Université de Montréal, Montréal, Canada. **Richard Martel**, Université de Montréal, Montréal, Canada.

Isolated and shape defined graphene layers in a single litographic step (P154)

Antonio Lombardo, University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK. **Silvia Milana**, University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK. **Andrea Ferrari**, University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK.

On the Doping of Carbon Nanotubes by Phosphorus Atoms (P156)

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Controlling the Dopant Concentration in Nitrogen-doped Multi-walled Carbon Nanotubes (P158)

Fatma Dinc, Department of Materials, University of Oxford, Oxford, UK. **Antal A. Koos**, Department of Materials, University of Oxford, Oxford, UK. **Frank Dillon**, Department of Materials, University of Oxford, Oxford, UK. **Nicole Grobert**, Department of Materials, University of Oxford, Oxford, UK.

Noncovalent Functionalization of Carbon Nanostructures: A DFT Investigation of Charge Transfer with Electron Donor-Acceptor Molecules and Protonation by Superacid (P160)

Tao Hu, Université de Toulouse; INSA, UPS, CNRS; LPCNO, Toulouse, France. **Romuald Poteau**, Université de Toulouse; INSA, UPS, CNRS; LPCNO, Toulouse, France. **Pascal Puech**, Université de Toulouse; UPS, CNRS; CEMES, Toulouse, France. **Iann Gerber**, Université de Toulouse; INSA, UPS, CNRS; LPCNO, Toulouse, France.

Tunable Separation of Single-Walled Carbon Nanotubes Using Density Gradient Ultracentrifugation (P162)

Pei Zhao, The University of Tokyo, Tokyo, Japan. **Erik Einarsson,** The University of Tokyo, Tokyo, Japan. **Georgia Lagoudas**, Rice University, Houston, USA. **Shohei Chiashi**, The University of Tokyo, Tokyo, Japan. **Junichiro Shiomi**, The University of Tokyo, Tokyo, Japan. **Shigeo Maruyama**, The University of Tokyo, Tokyo, Japan.

Synthesis and Electronic Properties of Silicon-Nitrogen Hetero-doped Single Walled Carbon Nanotubes (P164)

Ana Laura Elias, Penn State University, University Park, USA. **Martha Audiffred**, Universidad de Guanajuato, Guanajuato, Mexico. Penn State University, University Park, USA. **Humberto R. Guiterrez**, Penn State University, University Park, USA. **Florentino Lopez-Urias**, Insituto Potosino de Investigacion Cientifica y Tecnologica, A. C., San Luis Potosi, Mexico. **Mauricio Terrones**, Penn State University, University Park, USA. Shinshu University, Nagano, Japan. **Gabriel Merino**, Universidad de Guanajuato, Guanajuato, Mexico.

Thermal Expansion Of Single-Walled Carbon Nanotubes From Experiment (P166)

Oliver Jost, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Aljoscha Roch**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany.

B-C-N Nanotubes and Layers: Effects of Disorder and Stoichiometry (P168)

Helio Chacham, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **Jonathan R. Martins**, Universidade Federal do Piaui, Teresina, Brazil.

Density Controlled Growth of Horizontally Aligned Single-Walled Carbon Nanotubes on R-cut Crystal Quartz Substrates (P170)

Taiki Inoue, The University of Tokyo, Tokyo, Japan. **Daisuke Hasegawa**, The University of Tokyo, Tokyo, Japan. **Saifullah Badar**, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi**, The University of Tokyo, Tokyo, Japan. **Junichiro Shiomi**, The University of Tokyo, Tokyo, Japan. **Shigeo Maruyama**, The University of Tokyo, Tokyo, Japan.

Growth Kinetics of Narrow-Chirality and -Length Distributed Single-Walled Carbon Nanotubes by Time-Programmed Plasma CVD (P172)

Toshiaki Kato, Department of Electronic Engineering, Tohoku University, Sendai, Japan. **Rikizo Hatakeyama**, Department of Electronic Engineering, Tohoku University, Sendai, Japan.

Narrow-Chirality Distributed Growth of Single-Walled Carbon Nanotubes from Nonmagnetic Catalyst by Diffusion Plasma CVD (P174)

Koshi Murakoshi, Department of Electronic Engineering, Tohoku University, Sendai, Japan. **Toshiaki Kato**, Department of Electronic Engineering, Tohoku University, Sendai, Japan. **Zohreh Ghorannevis**, Department of Electronic Engineering, Tohoku University, Sendai, Japan. **Toshiro Kaneko**, Department of Electronic Engineering, Tohoku University, Sendai, Japan. **Rikizo Hatakeyama**, Department of Electronic Engineering, Tohoku University, Sendai, Japan.

The Effect of Root Morphology of Carbon Nanotube Forest on Spinnability (P176)

Jaegeun Lee, Pohang University of Science and Technology (POSTECH), Pohang, Korea. **Eugene Oh**, Pohang University of Science and Technology (POSTECH), Pohang, Korea. **Kun-Hong Lee**, Pohang University of Science and Technology (POSTECH), Pohang, Korea.

Synthesis of SWCNTs by Using Size-Controlled Nanoparticles from Polymerized Hemoglobin (P178)

Hye-Jin Kim, Pohang University of Science and Technology (POSTECH), Pohang, Korea. **Eugene Oh**, Pohang University of Science and Technology (POSTECH), Pohang, Korea. **Kun-Hong Lee**, Pohang University of Science and Technology (POSTECH), Pohang, Korea.

Diameter Control Growth of Single-walled Carbon Nanotubes by Nano-diamond Catalysts (P180)

Shohei Chiashi, The University of Tokyo, Tokyo, Japan. **Norihiro Hiramatsu**, The University of Tokyo, Tokyo, Japan. **Kenta Nakamura**, The University of Tokyo, Tokyo, Japan. **Yoshikazu Homma**, Tokyo University of Science, Tokyo, Japan. **Shigeo Maruyama**, The University of Tokyo, Tokyo, Japan.

Vertically-aligned Carbon Nanotube Growth In High Aspect Ratio Through-silicon Vias (P182)

Rongsi Xie, Department of Engineering, University of Cambridge, Cambridge, UK. **Feng Yan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Can Zhang**, Department of Engineering, University of Cambridge, Cambridge, UK. **Guofang Zhong**, Department of Engineering, University of Cambridge, Cambridge, UK. **Marleen van der Veen**, IMEC, Leuven, Belgium. **John Robertson**, Department of Engineering, University of Cambridge, Cambridge, UK.

Large Scale SWCNT Synthesis: Kilograms Per Day (P184)

Oliver Jost, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Aljoscha Roch**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Renè Ziegenrücker**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Jörg Heinrich**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Wulf Grählert**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Eckhard Beyer**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. Institute of Surface and Manufacturing Technology, Dresden University of Technol, Dresden, Germany.

Preferential Synthesis Of Metallic And Semiconducting SWCNTs (P186)

Oliver Jost, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Claudia Richter**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Toni Endmann**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Victor Schäfer**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Wulf Grählert**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Mark Ruemmeli**, Leibnitz Institute for Solid State and Materials Research, Dresden, Germany. **Eckhard Beyer**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Aljoscha Roch**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany.

A New Mechanism for Understanding Chiral Angle Control in SWCNTs Synthesized by CVD (P188)

James Elliott, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK. **Krzysztof Koziol**, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK.

HiPco Synthesis and the Effect of Growth Conditions on Individual Nanotube Chirality (P190)

Paul Cherukuri, Rice University, Houston, TX, USA. **Tonya Cherukuri**, UES Inc., Dayton, OH, USA. **Carter Kittrell**, Rice University, Houston, TX, USA. **Eric Haroz**, Rice University, Houston, TX, USA. **Steven Ho**, Rice University, Houston, TX, USA. **Wade Adams**, Rice University, Houston, TX, USA. **Bruce Weisman**, Rice University, Houston, TX, USA. **Robert Hauge**, Rice University, Houston, TX, USA.

Poster Session 5 (Guildhall)

- ***Applications, Structure and Processing 1***

Raman Probing of Adhesion Loss in Carbon Nanotube – Reinforced Composite. (P193)

Pavel Nikolaev, Department of Energy Science, Sungkyunkwan University, Suwon, South Korea. **Peter Boul**, ERC Inc. / NASA Johnson Space Center, Houston, USA. **Padraig Moloney**, Department of Mechanical Engineering & Materials Science, Rice University, Houston, USA. **Sivaram Arepalli**, Department of Energy Science, Sungkyunkwan University, Suwon, South Korea.

Formation of Bulk Hollow Cylinders Consisting of Bamboo Shaped C-N Nanotubes and their Use in the Hydrocarbon Filtration (P197)

Yadav Ram Manohar, Department of Physics, VSSD College, Kanpur, INDIA. **Kalpana Awasthi**, Department of Physics, K.N. Govt. PG, College, Gyanpur, Bhadohi, INDIA. **ASK Sinha**, Dept. of Chemical Engineering, Institute of Technology, BHU, Varanasi, INDIA. **O N Srivastava**, Department of Physics, Banaras Hindu University, Varanasi, INDIA.

Strain Rate Sensitivity of CNT Reinforced PMMA (P201)

Ofer Raz, Plasan Sasa Ltd. Kibutz Sasa, Israel. **Avi Ya'akobovich**, Plasan Sasa Ltd. Kibutz Sasa, Israel. **Amit Shlayer**, Plasan Sasa Ltd. Kibutz Sasa, Israel. **Daniel Rittel**, Department of Mechanical Engineering, Technion IIT, Haifa, Israel.

Formation Of Thick Dielectrophoretic Carbon Nanotube Fibers (P205)

Margo Plaado, Institute of Physics, University of Tartu, Tartu, Estonia. **Robert Mononen**, Institute of Physics, University of Tartu, Tartu, Estonia. **Rünno Lõhmus**, Institute of Physics, University of Tartu, Tartu, Estonia. **Ilmar Kink**, Institute of Physics, University of Tartu, Tartu, Estonia. **Kristjan Saal**, Institute of Physics, University of Tartu, Tartu, Estonia.

Dispersion and Alignment of Carbon Nanotubes in Fiber Spinning Process (P209)

Jae Whan Cho, Konkuk University, Seoul, South Korea. **Hye Jin Yoo**, Konkuk University, Seoul, South Korea.

Effects of Carbon Nanotube Strength on Mechanical Properties of Carbon Nanotube/Alumina Composites Prepared by Pressureless Sintering (P213)

Go Yamamoto, Fracture and Reliability Research Institute, Tohoku Univeristy, Sendai, Japan. Institute for Fluid Science, Tohoku Univeristy, Sendai, Japan. **Keiichi Shirasu**, Fracture and Reliability Research Institute, Tohoku Univeristy, Sendai, Japan. **Toshiyuki Takagi**, Institute for Fluid Science, Tohoku Univeristy, Sendai, Japan. **Toshiyuki Hashida**, Fracture and Reliability Research Institute, Tohoku Univeristy, Sendai, Japan.

A Comparative Study on the Behavior of SWCNT and DWCNT in Phoinduced Electron Transfer Processes. (P217)

Fernando Langa, University of Castilla-La Mancha (UCLM)

Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Maria Vizuete**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Maria Jose Gomez-Escalonilla**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Jose Luis Garcia**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Sergio Garcia**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Hermenegildo Garcia**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain. **Pedro Atienzar**, University of Castilla-La Mancha (UCLM), Toledo, Spain. Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain. Universidad Politécnica de Valencia, Valencia, Spain.

Correlating Chi and Concentration: A General Method For Predicting Nanotube Solubility (P221)

J Marguerite Hughes, School of Physics / CRANN, Trinity College Dublin, Dublin 2, Ireland. **Damian Aherne**, School of Physics / CRANN, Trinity College Dublin, Dublin 2, Ireland. **Shane D Bergin**, Department of Materials, Imperial College London London SW7 2AZ UK. **Philip V Streich**, Dept of Chemistry and Engineering Physics, University of Wisconsin – Platteville, Platteville, WI 53818, USA.

Influence of the Nanomanipulation on the Structural Properties of Individual Carbon Nanotubes Serpentines (P225)

Newton Barbosa, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Paulo Araújo**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Jaqueline Soares**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Lucas Mussnich**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Sabrina Carrara**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Nitzan Shadmi**, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel. **Nitzan Shadmi**, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel. **Ernesto Joselevich**, Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot, Israel. **Luis Gustavo Cançado**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Hélio Chacham**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil. **Ado Jorio**, Department of Physics, Federal University of Minas Gerais, Belo Horizonte, Brazil.

Chirality Controlled and (6,5) Selected CVD Growth of Single-Walled Carbon Nanotubes on Flat Substrate (P229)

Theerapol Thurakitseree, Mechanical Engineering, Tokyo University, Tokyo, Japan. **Pei Zhao**, Mechanical Engineering, Tokyo University, Tokyo, Japan. **Erik Einarsson**, Mechanical Engineering, Tokyo University, Tokyo, Japan. Global Center of Excellence for Mechanical Systems Innovation, Tokyo University, Tokyo, Japan. **Shohei Chiashi**, Mechanical Engineering, Tokyo University, Tokyo, Japan. **Shigeo Maruyama**, Mechanical Engineering, Tokyo University, Tokyo, Japan.

Vertical Array Of Fullerene Nanotube (FNT) Spin Valves For Ultra-High Density Spintronic Memory (P233)

Ryan Starko-Bowes, University of Alberta, Edmonton, Canada. **Sandipan Pramanik**, University of Alberta, Edmonton, Canada.

Aerosol-Synthesized SWCNT Networks With Tunable Conductivity And Transparency By A Dry Transfer Technique (P237)

Antti Kaskela, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland. **Albert G. Nasibulin**, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland. **Marina Y. Timmermans**, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland. **Brad Aitchison,** Canatu Ltd, Helsinki, Finland. **Alexios Papadimitratos**, Solarno Inc., Coppell, USA. **Zhen Zhu**, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland. **Hua Jiang**, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland. **David P. Brown**, Solarno Inc., Coppell, USA. **Anvar Zakhidov**, NanoTech Institute, University of Dallas at Texas, Richardson, USA. **Esko I. Kauppinen**, NanoMaterials Group, Department of Applied Physics, Aalto University, Espoo, Finland.

Fabrication of Carbon Nanotube Based Interconnect Devices (P241)

Can Zhang, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **Feng Yan**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **Bernhard C. Bayer**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **Raoul Blume**, Fritz Haber, Institute Berlin, Germany. **Guofang Zhong**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **Rongsi Xie**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **Robert Schlögl**, Fritz Haber, Institute Berlin, Germany. **Marleen H. Van der Veen**, IMEC, Leuven, Belgium. **Stephan Hofmann**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK. **John Robertson**, Department of Engineering, Univeristy of Cambridge, Cambridge, UK.

Reductive Dissolution And Separation Of Single-Walled Carbon Nanotubes (P245)

Stephen Hodge, Department of Chemistry, Imperial College London, London, UK. **Siân Fogden**, Department of Chemistry, Imperial College London, London, UK. **Milo Shaffer**, Department of Chemistry, Imperial College London, London, UK.

Carbon Nanotube Films Preparations for Electronic, Sensors and Bioengineering Application (P249)

Ivan Bobrinetskiy, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Ivan Komarov**, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Dmitriy Kireev**, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation.

The Methods of Cell Growth on Carbon Nanotubes Substrates with Making Use Of Electrostimulation (253)

Alexey Seleznev, Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Ivan Bobrinetskiy**, Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Roman Morozov**, Moscow Institute of Electronic Technology (Technical University), Moscow, Russia.

Adsorption Of Procion Blue MX-R (Reactive Blue 4) Dye From Water Solutions By Single-Walled Carbon Nanotubes And Multi-Walled Carbon Nanotubes (257)

Fernando Machado, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Carlos Bergmann**, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Éder Lima**, Institute of Chemistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Solange Fagan**, Department of Nanoscience, UNIFRA, Santa Maria, Brazil

Modification Of The Electronic Structure In Single-walled Carbon Nanotubes With Aromatic Amines (261)

Urszula Dettlaff-Weglikowska, School of Electrical Engineering, Korea University, Seoul, South Korea. **Gunn Kim**, of Physics and Graphene Research Institute, Sejong University, Seoul, South Korea. **Lyuba Bulusheva**, Nikolaev Institute of Inorganic Chemistry, Novosybirsk, Russia. **Siegmar Roth**, School of Electrical Engineering, Korea University, Seoul, South Korea.

A Chemists Method For Making Pure Clean Graphene (265)

Sharali Malik, Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, Karlsruhe, Germany. **Aravind Vijayaraghavan**, Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, Karlsruhe, Germany. University of Manchester, School of Computer Science, Manchester, United Kingdom. **Rolf Erni,** Electron Microscopy Center, EMPA, Dübendorf, Switzerland. **Katsuhiko Ariga**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan. **Ivan Khalakhan**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan. Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Praha, Czech Republic. **Jonathan Hill**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan.

Mechanism of CVD Graphene Growth (269)

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Interaction Between Two Graphene Sheets With A Turbostratic Orientational Relationship (273)

Yasushi Shibuta, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan. **James Elliott**, Department of Materials Science & Metallurgym University of Cambridge, Cambridge, UK.

An inner look into biscrolled CNT yarns: Studies on their different typical internal morphologies by microscopic analyses of their cross sections (277)

Xavier Lepro, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Marcio Lima**, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Raquel Ovalle Robles**, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Neema Rawat**, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Shaoli Fang**, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Ray Baughman**, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA.

Dispersion and Separation of Single Walled Carbon Nanotubes by Polysaccharides (281)

Yuan Chen, Nanyang Technological University, Singapore, Singapore. Mary Chan-Park: Nanyang Technological University, Singapore, Singapore. **Liangyu Yan**: Nanyang Technological University, Singapore, Singapore. **Sara Hagh**, Nanyang Technological University, Singapore, Singapore. **Yin Poon**: Nanyang Technological University, Singapore, Singapore.

Optical response of single-walled carbon nanotubes in far-infrared region (285)

Soon-Kil Joung, Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan; National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Toshiya Okazaki**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan.

Multifunctional Free-Standing Single-Walled Carbon Nanotube Films (287)

Albert Nasibulin, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Antti Kaskela**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Kimmo Mustonen**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Anton Anisimov**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Virginia Ruiz**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Samuli Kivistö**, Optoelectronics Research Centre, Tampere University of Technology, Tampere, Finland. **Marina Timmermans**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Oleg Okhotnikov**, Optoelectronics Research Centre, Tampere University of Technology, Tampere, Finland. **David Brown**, Canatu Ltd., Helsinki, FInland. **Esko Kauppinen**, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland.

Poster Session 6 (Pembroke College)

- ***Applications, Structure and Processing 2***

Synthesis And Characterization Of Single-Walled Carbon Nanotubes-Al2O3 Nanocomposites (P289)

Fernando Machado, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Carlos Bergmann**, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Mônica Andrade**, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Solange Fagan**, Department of Nanoscience, UNIFRA, Santa Maria, Brazil.

Comparative Electrical Studies Of Ni/MWNT Bulk Composites (P291)

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Top-down Process Based on Electrospinning for Producing CNT Yarns (P293)

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Formation of Bulk Hollow Cylinders Consisting of Bamboo Shaped C-N Nanotubes and their Use in the Hydrocarbon Filtration (P295)

Ram Manohar Yadav: Department of Physics, VSSD College Kanpur, INDIA. **ASK Sinha**, Department of Chemical Engineering, Institute of Technology, BHU Varanasi, INDIA. **O N Srivastava**, Department of Physics, Banaras Hindu University Varanasi, INDIA.

Biscrolling nanotube sheets and functional guests into yarns (P297)

Marcio Dias Lima, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA. **Ray Baughman**, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA,

Xavier Lepró, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA. **Shaoli Fang**, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA. **Raquel Ovalle-Robles**, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA. **Javier Carretero-González**, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA. **Elizabeth Castillo-MartÌnez**, The University of Texas at Dallas/ Alan G. MacDiarmid NanoTech Institute, Richardson, USA.

Highly Organized Two and Three Dimensional Singlewalled Carbon Nanotubes-Polymer Hybrid Architectures (P299)

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Semiconducting Single-Walled Carbon Nanotubes Based Infrared Solar Cells (P301)

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Lightning Strike Performance Of Carbon Nanotube Loaded Aerospace Composites (P303)

Emmanuel Logakis, Composites Centre, Cranfield University, Cranfield, UK. **Alexandros Skordos,** Composites Centre, Cranfield University, Cranfield, UK.

Preparation and Charaterization of Carbon Nanotubes Functionalized with Silica and Their Application in Shear Thickening Fluids (P305)

Young Ho Kim, Soongsil University, Seoul, South Korea. **Hye Na Hwang,** Soongsil University, Seoul, South Korea. **Heung Su Park,** Soongsil University, Seoul, South Korea.

Composites Of Aligned Carbon Nanotubes And Polymers (P307)

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Polymer and Aluminum Oxide Reinforced Single Walled Carbon Nanotube Networks (P309)

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Nitrogen-Doped SWCNT Thin Films Exhibiting Anomalous Sheet Resistances (P311)

Toma Susi, NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Paola Ayala**, University of Vienna, Faculty of Physics, Vienna, Austria. **Raul Arenal,** LEM, UMR 104 ONERA-CNRS, Châtillon, France; LMA, Instituto de Nanociencia de Aragon, Zaragoza, Spain. **Antti Kaskela,** NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Zhen Zhu,** NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Albert Nasibulin,** NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Hua Jiang,** NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Thomas Pichler,** University of Vienna, Faculty of Physics, Vienna, Austria. **Annick Loiseau,** LEM, UMR 104 ONERA-CNRS, Châtillon, France. **Esko Kauppinen,** NanoMaterials Group, Aalto University School of Science, Espoo, Finland.

Investigation of Sensor Properties of a Carbon Nanotube and ZnO Nanorod Composite. (P313)

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Improvement of Single Walled Carbon Nanotube Transparent Conductive Films by Transition Metal Doping (P315)

Jong Hun Han, Korea Electronics Technology Institute, Seongnam, S. Korea. **Daeseob Shim,** Pohang University of Science and Technology, Pohang, S. Korea. **Song Yi Han,** Korea Electronics Technology Institute, Seongnam, S. Korea **Kwonwoo Shin,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Kunnyun Kim,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Kun-Hong Lee,** Pohang University of Science and Technology, Pohang, S. Korea.

Synthesis of Carbon Based Hybrid Type Thermal Conductive Filler (P317)

Jong Hun Han, Korea Electronics Technology Institute, Seongnam, S. Korea. **Song Yi Han,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Seung Chul Lyu,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Kwonwoo Shin,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Sunmin Kim,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Minsun Kim,** Korea Electronics Technology Institute, Seongnam, S. Korea. **Cheol-Min Yang,** HYOSUNG, Anyang, S. Korea.

Exploration of Optimized SWCNT Diameter for Transparent Conductive Films (P319)

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Spinning of Thermosetting Composite Fibers Reinforced with Covalently and Noncovalently Functionalized Single-Walled Carbon Nanotubes (P321)

Mary Chan-Park, School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, Singapore. **Wei Yuan,** School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, Singapore. **Jianfei Che,** School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, Singapore.

Nanocomposites Formed Between Carbon Nanotubes, Silver Nanoparticles And Polyaniline: Synthesis, Characterization And Acid Concentration Influence On The Final Material (P323)

Marcela Mohallem Oliveira, GQM-DQ-UFPR, Curitiba, Brazil; PIPE-UFPR, Curitiba, Brazil; DAQBi-UTFPR, Curitiba, Brazil. **Hiany Mehl,** GQM-DQ-UFPR, Curitiba, Brazil; PIPE-UFPR, Curitiba, Brazil. **Aldo José Gorgatti Zarbin,** GQM-DQ-UFPR, Curitiba, Brazil.

CCVD Of Aligned Carbon Nanotubes On Aluminium Foils And Their Tests As Components Of Supercapacitors (P325)

Vyacheslav Khavrus, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany. **Mathias Weiser,** The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS Dresden), Dresden, Germany. **Marco Fritsch,** The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS Dresden), Dresden, Germany. **Raghunandan Ummethala,** Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany. **Maria Grazia Salvaggio,** University of Messina, Messina, Italy. **Michael Schneider,** The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS Dresden), Dresden, Germany. **Mihails Kusnezoff,** The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS Dresden), Dresden, Germany. **Albrecht Leonhard**, Leibniz Institute for Solid State and Materials Research (IFW Dresden), Dresden, Germany;

Development Of A Continuous Chemical Vapour Deposition Process For CNT-Grafted Carbon Fibre For Hierarchical Composites (P327)

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Biocompatible Single-Walled Carbon Nanotube Films by Surface Modification with Neutral pH Water Soluble Chitosan Derivatives (P329)

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Scalable And Sustainable Covalent Functionalization Of Carbon Nanotubes (P331)

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A role of HNO3 on transparent conducting film with single-walled carbon nanotubes (P333)

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Doping and De-doping in SWCNTs film by the spontaneous redox process (P335)

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Selective Chemical Functionalization of Carbon Nanobuds (P337)

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Chemistry Way Towards Design And Tailoring Of Novel 1D Carbon Materials For Energy Storage (P339)

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Production Of N-Doped Carbon Nanoribbons By Cutting CNx-MWNT: A Thermal Treatment Route (P341)

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Boron Nitride Nanotubes Grown Axially on Silicon Carbide Fibers (P343)

Janet Hurst, NASA Glenn Research Center, Cleveland, USA. **Ching-cheh Hung,** NASA Glenn Research Center, Cleveland, USA.

Size Control Of Aligned SWCNTs On Quartz Substrate By Using Gold Catalyst (P345)

Kazuki Yamada, Tokyo Univ. of Science, Tokyo, Japan. **Hiroki Kato,** Tokyo Univ. of Science, Tokyo, Japan. **Yoshikazu Homma,** Tokyo Univ. of Science, Tokyo, Japan.

Electrical Properties Of Platinum-Single Wall Carbon Nanotube Films (P347)

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Carbon Nanotube Nanogap Electrodes (P349)

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Investigation of comparative growth kinetic of the carbon nanotubes and graphene multilayers of the thermal-oxidative ethanol pyrolysis method (P351)

Ivan Komarov, Moscow Institute of Electronic Technology (Nechnical University), Moscow, Russia. **Ivan Bobrinetskiy,** Moscow Institute of Electronic Technology (Nechnical University), Moscow, Russia. **Denis Levin,** Moscow Institute of Electronic Technology (Nechnical University), Moscow, Russia. **Vladimir Nevolin,** Moscow Institute of Electronic Technology (Nechnical University), Moscow, Russia. **Michail Simunin,** Moscow Institute of Electronic Technology (Nechnical University), Moscow, Russia.

Carbon Nanotube Double Helices From Layered Double Hydroxides (P353)

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Localization And Tunneling Mechanism in Carbon Nanotubes Aggregates (P355)

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Carbon Nanotubes Array As Template For Metallic Interconnection (P357)

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Multi-walled Carbon Nanotube Dispersion for Conductive Films (P359)

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Dispersions Of Nanotubes And Graphene Particles In Petroleum Products (P361)

Wojciech Krasodomski, Oil and Gas Institute, Kraków, Poland. **Wojciech Mazela,** Oil and Gas Institute, Kraków, Poland. **M. Krasodomski,** Oil and Gas Institute, Kraków, Poland. **Leszek Ziemianski,** Oil and Gas Institute, Kraków, Poland.

Functionalization of Vertically Aligned Carbon Nanotubes with Nitric Acid Vapor (P363)

Eugene Shulga, Institute of Physics University of Tartu, Tartu, Estonia. **Kaija Pohako,** Institute of Chemistry University of Tartu., Tartu, Estonia. **Alexey Treshchalov,** Institute of Physics University of Tartu, Tartu, Estonia. **Urmas Joost,** Institute of Physics University of Tartu, Tartu, Estonia. **Vambola Kisand,** Institute of Physics University of Tartu, Tartu, Estonia. **Ilmar Kink,** Estonian Nanotecnology Competence Centre., Tartu, Estonia.

Sonic Study On Dispersibilty Of Carbon Nanotubes (P365)

Madhuri Dutta, Department of Materials, University of Oxford, Oxford, United Kingdom. **Valeria Nicolosi,** Department of Materials, University of Oxford, Oxford, United Kingdom. **Nicole Grobert,** Department of Materials, University of Oxford, Oxford, United Kingdom.

The Role of Bundles in Separating Metallic from Semiconducting Single Walled Carbon Nanotubes and Selective Bundling of zig-zag SWNTs (P367)

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Magnetic Characterization Of CNx-MWNT-Encapsulated Ferromagnetic Nanoparticles (P369)

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Indolizine Modified Fluorescent Single-Walled Carbon Nanotubes For Detection Of Nitroaromatics (P371)

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Biocompatibility And Toxicological Research Of Surfaces Modificated With Different Carbon Nanotubes (P373)

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Synthesis Bombesin-Naphthalenediimide Conjugate Functinalized Single Walled Carbon Nanotubes as a Novel Receptor Imaging Probe (P375)

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Magnetization in Carbon Nanotubes under Ion Irradiation (P377)

Jacob Eapen, North Carolina State University, Raleigh, USA. **Brahmananda Chakraborty**, North Carolina State University, Raleigh, USA. **Pradip Das**, Bhabha Atomic Research Center, Mumbai, India. **D. K. Avasthi**, Bhabha Atomic Research Center, Mumbai, India. **D. S. Misra**, Indian Institute of Technology, Mumbai India. **S. Banerjee**, University Center for the Accelerators, New Delhi, India

Valence band of graphite oxide (P379)

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Mechanical Characterization of Ultra Thin Membrane Made Up of Well Aligned Carbon Nanotubes (P381)

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Solvents for Nanotubes and Graphene - Why the Difference? (P383)

Shane D Bergin, Dept. of Chemistry, Imperial College London, London, UK. **Hin Chun Yau,** Dept. of Chemistry, Imperial College London, London, UK. **Angela E Goode,** Dept of Materials, Imperial College London, London, UK. **Yenny Hernandez,** Max Planck Institute for Polymer Research, Mainz, Germany. **Jonathan N Coleman**, School of Physics & CRANN, Trinity College Dublin, Dublin, Ireland. **Milo SP Shaffer**, Dept. of Chemistry, Imperial College London, London, UK.

Poster Session 7 (Guildhall)

- ***Applications, Structure and Processing 3***

Gold Nanoparticles Containing Carbon Nanotubes-Polyelectrolyte Multilayer Thin Films via Layer-by-Layer Self-assembly (P194)

Aimin Yu, Swinburne University of Technology, Melbourne, Australia; Hubei Normal University, Huangshi, China. **Haili Zhang**, Hubei Normal University, Huangshi, China.

Melt Processed Polymer - Carbon Nanotube Composites As Materials For Liquid Sensing Applications (P196)

Petra Pötschke, Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Tobias Villmow,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Timo Andres,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Kazufumi Kobashi,** National Institute of Advanced Industrial, Tsukuba, Japan. **Rosina Rentenberger,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany

High Conductive Tranaparent Ultrathin Single-Walled Carbon Nanotube Films (P198)

Naotoshi Nakashima, Kyushu University, Fukuoka, Japan. ***Qingfeng Liu***, Kyushu University, Fukuoka, Japan.***Tsuyohiko Fujigaya***, Kyushu University, Fukuoka, Japan. ***Hui-Ming Cheng,*** Institute of Metal Research, Shenyang, China.

Terahertz response of anisotropic CNTs/polystyrene composite films (P200)

Olga Sedelnikova, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia. **Aleksandr Okotrub,** Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia. **Vitalyi Kubarev**, Budker Institute of Nuclear Physics, SB RAS, Novosibirsk, Russia. **Mikhail Kanygin**, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia. **Lyubov Bulusheva**, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia.

Thermal stability of triple-walled carbon nanotubes (P202)

Hiroyuki Muramatsu, Shinshu University, Nagano, Japan. **Daisuke Shimamoto,** Shinshu University, Nagano, Japan. **Yoong Ahm Kim,** Shinshu University, Nagano, Japan. **Takuya Hayashi,** Shinshu University, Nagano, Japan. **Morinobu Endo,** Shinshu University, Nagano, Japan.

Electrical Properties Of CNT-Based Polymeric Matrix NanoComposites (P204)

Micaela Castellino, Physics Department, Politecnico di Torino, Torino, Italy. **Alessandro Chiolerio,** Physics Department, Politecnico di Torino, Torino, Italy. **Pravin Jagdale,** Materials Science and Chemical Engineering Department, Politecnico di Torino, Torino, Italy. **Mauro Giorcelli,** Materials Science and Chemical Engineering Department, Politecnico di Torino, Torino, Italy. **Alberto Tagliaferro,** Materials Science and Chemical Engineering Department, Politecnico di Torino, Torino, Italy.

Hydrogen Production via Partial Oxidation of Methanol over Cu Thin Films Electrodeposited on TiO2/CNTs Nanocompoistes (P206)

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Effects of Acid Treatment of Carbon Nanotube on the Mechanical Properties and Fracture Process of Carbon Nanotube/Alumina Composites (P208)

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Structure and Properties of Yarn-like Carbon Nanotube Fibres (P210)

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Carbon nanotube surface modifications revealed by solid sample electrokinetic measurements (P212)

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Dispersion Of Carbon Nanotubes In Polystyrene/Siloxane Blends (P214)

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A Novel Electrode Arrangement for Alignment of Carbon Nanotube in Large-sized Composite Film (P216)

Michihiko Nakano, Kyushu University, Fukuoka, Japan. **Wei Sun**, Kyushu University, Fukuoka, Japan. **Shinya Hasegawa**, Kyushu University, Fukuoka, Japan. **Yu Kitamura,** Kyushu University, Fukuoka, Japan. **Junya Suehiro**, Kyushu University, Fukuoka, Japan.

Electrical And Thermal Conductivity In An Epoxy Resin-Carbon-Based Materials Composite (P218)

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(PU/Nylon 6)/MWNT composite nanofibers produced by coaxial and side-by-side (coaxial/single) electrospinning: Preparation, characterization, and mechanical properties (P220)

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Electrical Conductivity and Tensile Property of Carbon Nanotube-Polyisoprene Composite Prepared with a Rotation/Revolution Mixer (P222)

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Tailoring Temperature Invariant Viscoelasticity of Carbon Nanotube Material (P224)

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Improved Properties Of Adhesives By Integration Of Carbon Nanotubes (P226)

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Electrical Properties of the Composite Consisted of Multi-Layer Graphene and Multi-Walled Carbon Nanotubes (P228)

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Studying Chiral Selective Reactivity of SWNTs (P230)

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Surfactant Screening for Metal/semiconductor Separation of Carbon Nanotubes (P232)

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Displacement Measurement of a Carbon Nanotube Cantilever in Liquid for Protein Interaction Force Sensing (P234)

Takayuki Arie, Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan. **Shunichi Sawano,** Osaka Prefecture University, Sakai, Japan. **Seiji Akita,** Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan.

Optical Properties of Few-walled Boron Nitride Nanotubes By Photoconductivity Measurements (P236)

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Growth And Phase Composition Of Iron-Filled MWCNT Obtained By Thermal Decomposition Of Ferrocene (P238)

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A Test Vehicle For RF/DC Evaluation And Destructive Testing Of Vertically Grown Nanostructures (VGCNS) (P240)

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Control Of SWNT Synthesis By Self Assembled Monolayer For Realizing Transistors (P242)

Fatima Bouanis, **Evgeny Norman**, **Laurent Baraton, Marc Cheneau, Jean L. Maurice**, **Vincent Huc**, **Costel S. Cojocaru**, Laboratoiry of Physics of Interfaces and Thin films UMR 7647 CNRS/ Ecole Polytec, PALAISEAU, France.

Dynamical Behaviour Of 5T Molecule Encapsulated In Carbon Nanotubes Observed by Aberration-Corrected HRTEM (P244)

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Strong MWCNT spun fibers by spinning millimeter scale MWCNT array (P246)

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Direct Synthesis of Single-walled Carbon Nanotube Containing Platinum Group Metal (P248)

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Effect of chemical reduction on the gas diffusivity and solubility of a polymer/graphene oxide composite films (P250)

Heon Sang Lee, **Hye Min Kim**

Electric field effect on the electroluminescence of the ZnS phosphor-CNT composite (P252)

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Sorting Out Empty and Water-Filled Carbon Nanotubes (P254)

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Separation of Single Walled Carbon Nanotubes. A Scalable and Non Destructive Approach. (P256)

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Generic Techniques For The Large-Scale Integration Of Carbon Nanotubes (P258)

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Deposition Of Aligned Carbon Nanotubes Using Fountain Pen Nanolithography (P260)

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Selective Solubilisation and Individualization of Nanotubes in Aqueous Solutions of Inorganic Salts (P262)

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Self Assembly Of Lipid Nanostructures In Aligned Carbon Nanotubes (P264)

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Electrochemically Functionalized Carbon Nanotubes and Graphene : From Device Applications to On-chip Nanobiosensors (P266)

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Energetics and Electronic Structure of Encapsulated Single-Stranded DNA in Carbon Nanotubes (P268)

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Carbon Nanomaterials as Catalysts for Hydrogen Desorption from Complex Metal Hydrides (P270)

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Graphene Bubble As Adaptive Focus Lens (P272)

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Highly Efficient Exfoliation and Sorting of Graphite flakes (P274)

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Electrically Switchable, Flexible Smart Windows Using Graphene-based Transparent Conductors (P276)

Tawfique Hasan, Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Andriy Dyadyusha,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Zhipei Sun,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Francesco Bonaccorso,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Felice Torrisi,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **William Richards,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Tero Kulmala,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Weiping Wu,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Daping Chu,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom. **Andrea C. Ferrari,** Department of Engineering, University of Cambridge, Cambridge, United Kingdom.

Wideband Tunable, High-power Ultrafast Lasers Mode-locked By Graphene (P278)

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Functionalized Carbon Nanotubes: Comparative Study Of Quantative Characterization Methods (P280)

Anna Usoltseva, Nanocyl S.A., Sambreville, Belgium. **Julien Amadou,** Nanocyl S.A., Sambreville, Belgium.

Highly Conductive, Long-Range SWNT Network Structure Made by Wet Shear Dispersion (P282)

Kazufumi Kobashi, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Seisuke Ata,** Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Takeo Yamada,** National Institute of Advanced

Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Don Futaba,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Motoo Yumura,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Kenji Hata,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan

Carbon Fiber - Carbon Nanotube Hybrid (P284)

Mukul Kumar, Meijo University, Nagoya, Japan. **Yoshinori Ando,** Meijo University, Nagoya, Japan.

Unidirectional MWCNT sheet/epoxy composites (P286)

Yoku Inoue, Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Yoshitaka Minami,** Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Junichi Muramatsu,** Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Naoki Morisawa,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Mikihisa Ishihara,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Yoshinobu Shimamura,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Morihiro Okada,** Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan. **Hidenori Mimura,** Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan.

Poster Session 8 (Pembroke College)

- ***Applications, Structure and Processing 4***

Electronic State of Polyaniline Deposited on Carbon Template and Supercapacitor Performance of Composite (P288)

Lyubov Bulusheva, Nikolaev Institute of Inorganic Chemistry, SB RAS Novosibirsk Russia. **Alexander Okotrub,** Nikolaev Institute of Inorganic Chemistry, SB RAS Novosibirsk Russia. **Ekaterina Fedorovskaya,** Beijing University of Chemical Technology Beijing P. R. China. **Xiaohong Chen,** Beijing University of Chemical Technology Beijing P. R. China. **Huaihe Song,** Beijing University of Chemical Technology Beijing P. R. China .

Enhanced Hydrogen Storage Capacitance of Graphite Oxide Intercalated by Poly(sodium 4-styrensulfonate) (P290)

Taehyung Kim, BK21 Physics Division, Department of Energy Science, SungKyunKwan University Suwon, Kyunggi-do South Korea. **MeiHua Jin**, BK21 Physics Division, Department of Energy Science, SungKyunKwan University Suwon, Kyunggi-do South Korea. **YunJu Park**, BK21 Physics Division, Department of Energy Science, SungKyunKwan University Suwon, Kyunggi-do South Korea. **SeongChu Lim**, BK21 Physics Division, Department of Energy Science, SungKyunKwan University Suwon, Kyunggi-do South Korea. **EunJu Ra**, Faculty of Engineering, Shinshu University, 4-17-1 Wakasato Nagano-shi Japan. **YoungHee Lee**, BK21 Physics Division, Department of Energy Science, SungKyunKwan University Suwon, Kyunggi-do South Korea.

Electrochemical Capacitance of PAN-based and CNT/PAN Nanofiber Papers in Organic Electrolyte (P292)

Eun Ju Ra, Faculty of engineering/Shinshu University, Nagano, Japan. **Tae Hyung Kim**, BK21 Physics Division/ Sungkyunkwan University, Suwon, South Korea. **Yoong Ahm Kim**, Faculty of Engineering/Shinshu University, Nagano, Japan. **Ki Chul Park**, Institute of Carbon Science and Technology/Shinshu University, Nagano, Japan. **Shingo Kori**, Faculty of Engineering/Shinshu University, Nagano, Japan. **Masaki Shinohara**, Faculty of Engineering/Shinshu University, Nagano, Japan. **Hiroki Ogata**, Faculty of engineering/Shinshu University, Nagano, Japan. **Young Hee Lee**, BK21 Physics Division/Sungkyunkwan University, Suwon, South Korea. **Morinobu Endo**, Faculty of Engineering/Shinshu University, Nagano, Japan; Institute of Carbon Science and Technology/ Shinshu University, Nagano, Japan.

Growth of Adhesion-Improved CNT Forests on Carbon Fibers for Composites (P294)

Eugene Oh, Pohang University of Science and Technology (POSTECH). Pohang. Korea. **Hansang Kim**, University of California, Los Angeles, USA. **Dong-Myung Yoon**, University of California, Los Angeles, USA. **Thomas Hahn**, University of California, Los Angeles, USA. **Kun-Hong Lee**, University of California, Los Angeles, USA.

Transparent and Conductive Thin Films of Graphene/ Polyaniline and Carbon Nanotubes/Polyaniline Nanocomposites (P296)

Aldo Zarbin, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Sergio Domingues**, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Rodrigo Salvatierra**, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Marcela Oliveira**, DAQBI, Universidade Tecnologica Federal do Parana (UTFPR), Curitiba, Brazil.

Transparent and Conductive Thin Films of Carbon Nanotubes/ Prussian Blue Nanocomposites: Preparation, Characterization and Application as Electrochromic Material and H2O2 Sensor (P298)

Aldo Zarbin, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Edson Nossol,** Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil.

Multifuncional Nanocomposites Obtained Between Iron-Filled Carbon Nanotubes and Polymeric Latexes (P300)

Aldo Zarbin, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Carolina Matos**, Departamento de Quimica, Universidade Federal do Parana (UFPR), Curitiba, Brazil. **Fernando Galembeck**, Instituto de Quimica, Universidade estadual de Campinas (UNICAMP), Campinas, Brazil.

Study Of Carbon Nanotubes And Functionalized-Carbon Nanotubes As Substrates For Flow Injection Solid Phase Extraction. Application To Cd Monitoring In Solid Environmental Samples (P302)

Belen Parodi, Instituto Nacional de Tecnología Industrial - INTI-Mecánica, San Martín, Argentina; Universidad de San Martín – 3iA San Martín, Argentina. **Marianela Savio**, Instituto de Química de San Luis - INQUISAL-UNSL-CONICET, San Luis, Argentina. **Luis Dante Martinez**, Instituto de Química de San Luis - INQUISAL-UNSL-CONICET, San Luis, Argentina; Consejo Nacional de Investigaciones Científicas - CONICET, Buenos Aires, Argentina. **Griselda Polla**, Comisión Nacional de Energía Atómica - CNEA San Martín Argentina. **Raúl Andrés Gil**, Instituto de Química de San Luis - INQUISAL-UNSL-CONICET,

San Luis, Argentina; Consejo Nacional de Investigaciones Científicas - CONICET, Buenos Aires, Argentina. **Patricia Smichowski**, Consejo Nacional de Investigaciones Científicas - CONICET, Buenos Aires, Argentina; Comisión Nacional de Energía Atómica - CNEA San Martín Argentina.

Highly Elastic Transparent SWCNT - Polymer Electrodes with Excellent Robustness and Long-Term Stability (P304)

Esther Roch Talens, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Aljoscha Roch**, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Tilo Köckritz**, Institute of Surface and Manufacturing Technology, Dresden University of Technology, Dresden, Germany. **Jens Liebich**, Institute of Surface and Manufacturing Technology, Dresden University of Technology, Dresden, Germany. **Karsten Rost**, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Jörg Heinrich**, Institute of Surface and Manufacturing Technology, Dresden University of Technology, Dresden, Germany. **Irene Jansen**, Institute of Surface and Manufacturing Technology, Dresden University of Technology, Dresden, Germany. **Eckhard Beyer**, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany; Institute of Surface and Manufacturing Technology, Dresden University of Technology, Dresden, Germany. **Andreas Leson**, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Oliver Jost**, Dr. F. Fraunhofer Institute for Material and Beam Technology, Dresden, Germany.

Metallic And Semiconducting Single Wall Nanotube Based Transparent Conductors (P306)

Giulia Privitera, Department of Engineering, University of Cambridge, CB3 0FA,Cambridge, United Kingdom. **Francesco Bonaccorso**, Department of Engineering, University of Cambridge, CB3 0FA, Cambridge, United Kingdom. **Andrea C Ferrari,** Department of Engineering, University of Cambridge, CB3 0FA, Cambridge, United Kingdom.

The effect of MWNT content and functionality on PMMA mechanical properties (P308)

Ofer Raz, Plasan Sasa Ltd, Kibutz, Sasa, Israel. **Avi Ya'akobovich**, Plasan Sasa Ltd, Kibutz, Sasa, Israel. **Jean-Paul Lellouche**, Bar Ilan University Tel-aviv Israel. **Daniel Wagner**, Weizmann Institute, Rehuvut, Israel.

Carbon Nanotubes For Enhanced Physical Property And Chemical Reactivity - Thermal Conducting Soft Polyol Composites And Their Production (P310)

Gregor Czempiel, Freie Universität Berlin, Berlin, Germany. **Kati Gharagozloo-Hubmann**, Freie Universität Berlin, Berlin, Germany. **Maria Kasimir**, Freie Universität Berlin, Berlin, Germany. **Svitlana Trotsenko**, Freie Universität Berlin, Berlin, Germany. **Vitaliy Datsyuk**, Freie Universität Berlin, Berlin, Germany. **Stephanie Reich**, Freie Universität Berlin, Berlin, Germany.

Surface Modification of Cu Plates with CNT/Cu Powder Composites through the Application of Cold Gas Dynamic Spray for the Enhancement of Boiling Heat Transfer (P312)

Edward Joshua Pialago, Graduate School of Mechanical Design Engineering, Chonbuk National University, Jeonju, South Korea. **Kristian Arvin Ada**, Graduate School of Mechanical Design Engineering, Chonbuk National University, Jeonju, South Korea. **Xiru Zheng**, Graduate School of Mechanical Design Engineering, Chonbuk National University, Jeonju, South Korea. **Chan Woo Park**, School of Mechanical Design Engineering, Chonbuk National University, Jeonju South, Korea.

Photo-actuating CNT Composites for Tactile Display Applications (P314)

Jean Marshall, Cavendish Laboratory, University of Cambridge, Cambridge, U.K. **Carlos Camargo**, Instituto de Microelectrónica de Barcelona IMB-CNM (CSIC), Barcelona, Spain. **Humberto Campanella**, Instituto de Microelectrónica de Barcelona IMB-CNM (CSIC), Barcelona, Spain. **Núria Torras**, Instituto de Microelectrónica de Barcelona IMB-CNM (CSIC), Barcelona, Spain. **Kirill Zinoviev**, Instituto de Microelectrónica de Barcelona IMB-CNM (CSIC), Barcelona, Spain. **Eva Campo**, University of Pennsylvania, Philadelphia, U.S.A. **Yan Ji**, Cavendish Laboratory, University of Cambridge, Cambridge, U.K. **Jaume Esteve**, Instituto de Microelectrónica de Barcelona IMB-CNM (CSIC), Barcelona, Spain. **Eugene Terentjev**, University of Pennsylvania, Philadelphia, U.S.A.

A Single-Walled Carbon Nanotube-Enabled Conductive Aerospace Adhesive (P316)

Michael B. Jakubinek, National Research Council Canada-Steacie Institute for Molecular Sciences, Ottawa, Canada. **Benoit Simard**, National Research Council Canada-Steacie Institute for Molecular Sciences, Ottawa, Canada. **Behnam Ashrafi**, National Research Council Canada-Institute for Aerospace Research, Ottawa, Canada. **Leon Johnson**, National Research Council Canada-Institute for Aerospace Research, Ottawa, Canada. **Yunfa Zhang**, National Research Council Canada-Institute for Aerospace Research, Ottawa, Canada. **Andrew Johnston**, National Research Council Canada-Institute for Aerospace Research, Ottawa, Canada.

Synthesis of Polyaniline – Carbon Nanoribrons Composites (P318)

Yadira Vega-Cantu, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico. **Juan Carlos Garcia-Gallegos**, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico; Department of Chemical Engineering, Universidad de Alicante, Alicante, Spain. **Fernando Rodriguez-Macias**, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico.

Preparation and Characterization of Actuators from Carbon Nanstructures-PAni Composites (P320)

Juan Carlos Garcia-Gallegos, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico; Department of Chemical Engineering, Universidad de Alicante, Alicante, Spain. **Ignacio Martin-Gullon**, Department of Chemical Engineering, Universidad de Alicante, Alicante, Spain. **Fernando Rodriguez-Macias**, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico. **Yadira I Vega-Cantu**, Advanced Materials Department, IPICYT San Luis, Potosi, Mexico.

Boron Nitride Nanotubes Chemically Modified By Sulfur (P322)

Ching-Cheh Hung, NASA Glenn Research Center Cleveland, USA. **Janet Hurst**, NASA Glenn Research Center Cleveland, USA.

Fluorination of Carbon Nanotubes and Graphene (P324)

Gregory Van Lier, Research Group General Chemistry (ALGC), Vrije Universiteit, Brussel, B-1050 Brussels, Belgium. **Sylvain Latil**, IRAMIS/SPCSI, CEA-Saclay 91191, Gif-sur-Yvette Cedex, France. **Balázs Hajgato**, Research Group General Chemistry (ALGC), Vrije Universiteit, Brussel, B-1050 Brussels, Belgium. **Paul Geerlings**, Research Group General Chemistry (ALGC), Vrije Universiteit, Brussel, B-1050 Brussels, Belgium. **Christopher P. Ewels**, Institut des Matériaux Jean Rouxel, CNRS, Nantes, France.

Advantages of High-k Dielectric Layer Passivated CNT-FETs for pH Detection (P326)

Agus Subagyo, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan. **Takato Ohya**, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan. **Yuji Toyoshima**, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan. **Kazuhisa Sueoka**, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan.

Tunable Chemistry of Multi-Wall Carbon Nanotubes as a Route to Non-Toxic, Theranostic Systems (P328)

Slawomir Boncel, Silesian University of Technology, Gliwice, Poland. **Artur Herman**, Silesian University of Technology, Gliwice, Poland. **Grzegorz Labojko**, Institute for Chemical Processing of Coal, Zabrze, Poland. **Dominika Jakubiec**, Silesian University of Technology, Gliwice, Poland. **Sebastian Budniok**, Silesian University of Technology, Gliwice, Poland. **Krzysztof Koziol**, University of Cambridge, Cambridge, UK. **Krzysztof Walczak**, Silesian University of Technology, Gliwice, Poland.

Molecular Magnet And Carbon Nanotubes Interactions For Molecular Spintronic Applications (P330)

Gurvan Magadur, Laboratoire de Chimie Inorganique, Orsay, France. **Talal Mallah**, LCI, Orsay, France.

Analysis of Water Adsorption Effects on SWNTs by the Simultaneous Measurements of Photoluminescence and Raman Scattering (P332)

Kaname Kono, Department of Physics, Tokyo University of Science, Shinjuku, Tokyo, Japan. **Daiki Matsumoto**, Department of Physics, Tokyo University of Science, Shinjuku, Tokyo, Japan. **Shouhei Chiashi**, Department of Mechanical Engineering, The University of Tokyo,Bunkyo, Tokyo, Japan. **Yoshikazu Homma**, Department of Physics, Tokyo University of Science, Shinjuku, Tokyo, Japan.

Sensitivity of Boron Nitride Nanotubes Toward Biomolecules (P334)

Ralph Scheicher, Department of Physics, Michigan Technological University, Houghton, USA. **Saikat Mukhopadhya**, Department of Physics, Michigan Technological University, Houghton, USA. **Ravi Pandey**, Department of Physics and Astronomy, Uppsala University Uppsala, Sweden. **Shashi Karna**, US Army Research Laboratory, Weapons and Materials Research Directorate, Aberdeen Proving Ground, USA.

Visible Photoluminescence From Copper Nanoparticle/ Multiwall Carbon Nanotube Nanohybrid (P336)

Apurba Mitra, National Institute of Technology Durgapur, Durgapur, India. **Rima Paul**, National Institute of Technology Durgapur, Durgapur, India. **Pathik Kumbhakar**, National Institute of Technology Durgapur, Durgapur, India.

Photoconductivity And Optical Response Of MWCNT Devices (P338)

Valentina Grossi, Physics Department - University of L'Aquila, L'Aquila, Italy. **Sandro Santucci**, Physics Department - University of L'Aquila, L'Aquila, Italy. **Maurizio Passacantando**, Physics Department - University of L'Aquila, L'Aquila, Italy.

Novel nanostructure with vertically aligned carbon nanotubes, Synthesis, structural properties and applications (P340)

Sascha Hermann, Chemnitz University of Technology, Center for Microtechnologies (ZfM), 09126 Chemnitz, Germany. **Ramona Ecke**, Fraunhofer Institute for Electronic Nano Systems (ENAS), 09126 Chemnitz, Germany. **Stefan E. Schulz**, Chemnitz University of Technology, Center for Microtechnologies (ZfM), 09126 Chemnitz, Germany. Fraunhofer Institute for Electronic Nano Systems (ENAS), 09126 Chemnitz, Germany. **Thomas Gessner**, Chemnitz University of Technology, Center for Microtechnologies (ZfM), 09126 Chemnitz, Germany. Fraunhofer Institute for Electronic Nano Systems (ENAS), 09126 Chemnitz, Germany.

Perovskite Oxides On MWNTs For Functional Nanoscale Devices (P342)

Sai Shivareddy, Electrical Division, Department of Engineering, University of Cambridge, Cambridge, U.K. **Ashok Kumar**, Department of Physics, University of Puerto Rico, San Juan, U.SA. **Youngjin Choi**, Electrical Division, Department of Engineering, University of Cambridge, Cambridge, U.K. **Geunhee Lee**, Department of Physics, University of Puerto Rico, San Juan, U.SA. Material Science Division, Argonne National Laboratory, Argonne, U.S.A. **Seungbum Hong**, Department of Physics, University of Puerto Rico, San Juan, U.SA. Material Science Division, Argonne National Laboratory, Argonne, U.S.A. **Ram Katiar**, Department of Physics, University of Puerto Rico, San Juan, U.SA. **James Scott**, Department of Physics, University of Puerto Rico, San Juan, U.SA. Cavendish Laboratory, University of Cambridge, Cambridge, U.K. **Gehan Amaratunga**, Electrical Division, Department of Engineering, University of Cambridge, Cambridge, U.K.

Controlled Synthesis and Macroscale Assembly of Carbon Nanotubes for Nanoelectronics and Macroelectronics (P344)

Chongwu Zhou, Department of Electrical Engineering, University of Southern California, Los Angeles, USA.

A Novel Procedure for the Manufacture of Vertical Carbon Nanotube Interconnects (P346)

Davide Di Maio, National Physical Laboratory, Teddington, UK. **Vimal Gopee**, National Physical Laboratory, Teddington, UK. **Chris Hunt**, National Physical Laboratory, Teddington, UK.

Carbon nanotube and graphene-inorganic hybrid materials as next-generation photocatalysts (P348)

Dominik Eder, Institute of Physical Chemistry, University of Muenster, Muenster, Germany.

Chirality-Separation Mechanism of Carbon Nanotubes by Gel Chromatography (P350)

Huaping Liu, Nanosystem Research Institute, AIST, Tsukuba, Ibaraki 305-8562, Japan. **Daisuke Nishide**, Nanosystem Research Institute, AIST, Tsukuba, Ibaraki 305-8562, Japan. **Takeshi Tanaka**, Nanosystem Research Institute, AIST, Tsukuba, Ibaraki 305-8562, Japan. **Hiromichi Kataura**, Nanosystem Research Institute, AIST, Tsukuba, Ibaraki 305-8562, Japan.

Preferential Destruction Of Metallic SWCNTs By An RF-Plasma In Inert Gases (P352)

Aljoscha Roch, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Karsten Rost**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Carl-Friedrich Meyer**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany.

Diameter And Chiral Selective Purification Of SWNT And DWNT Using CO2 (P354)

Philippe Gagnon, Département de Génie Physique, École Polytechnique de Montréal, Montréal, Canada. **Maxime Biron**, Département de Génie Physique, École Polytechnique de Montréal, Montréal, Canada. **Maxime Desjardins-Carrière**, Département de Génie Physique, École Polytechnique de Montréal, Montréal, Canada. **Emmanuel Flahaut**, CIRIMAT, Université Paul Sabatier, Toulouse, France. **Patrick Desjardins**, Département de Génie Physique, École Polytechnique de Montréal, Montréal, Canada. **Richard Martel**, Département de Chimie, Université de Montréal, Montréal, Canada.

Non-Destructive And Scalable SWCNT Purification (P356)

Esther Roch Talens, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Jan Hofmann**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Anja Grohme**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Toni Endmann**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Andreas Leson**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Oliver Jost**, Fraunhofer Institute for Material and Beam Technology, Dresden, Germany. **Beata Lehmann**, Institute of Surface and Manufacturing Technology, Dresden University of Technol, Dresden, Germany.

Self-Assembly of Doubly-Clamped/Cantilevered Carbon Nanotube Arrays by a Precise Positioning Method (P358)

Ji Cao, **Adrian M. Ionescu**.

Fine Patterning of Carbon Nanotube by Electrohydrodynamic Printing (P360)

Tae-Hoon Kim, Seoul National University, Seoul, South Korea.

Kyoung Il Lee, Korea Electronics Technology Institute, Seognam-si, South Korea. Seoul National University, Seoul, South Korea. **Sang Un Byun**, Korea Electronics Technology Institute, Seognam-si, South Korea. **Jong Hoon Han**, Korea Electronics Technology Institute, Seognam-si, South Korea. **Kown Woo Shin**, Korea Electronics Technology Institute, Seognam-si, South Korea. **Seong Hyun Kim**, Korea Electronics Technology Institute, Seognam-si, South Korea. **Chul Seung Lee**, Korea Electronics Technology Institute, Seognam-si, South Korea. **Yongtaek Hong**, Seoul National University, Seoul, South Korea.

Photografting Aligned Carbon Nanotube Networks, Towards Composites And Nanoporous Membranes (P362)

Martine Mayne-L'hermite, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, Gif sur Yvette, France **Marion Mille**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, Gif sur Yvette, France **Alexandre Brouzes**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, Gif sur Yvette, France. **Mathieu Pinault**, CEA, IRAMIS, SPAM, Laboratoire Francis Perrin, Gif sur Yvette, France. **Hicham Khodja**, CEA, IRAMIS, SIS2M, LEEL, Gif sur Yvette, France **Pascal Boulanger. CEA, IRAMIS, SPAM,** Laboratoire Francis Perrin, Gif sur Yvette, France

The Growth Pattern and Thickness Evaluation of Mesenchymal Stem Cells Cultured on a Variety of Single-Walled Carbon Nanotube (P364)

Jae-Hyeok Lee, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Wooyoung Shim**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Najeeb Choolakadavil Khalid**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Won-Seok Kang**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Jin-Woo Park**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Minsu Lee**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Gwang Lee**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Jae-Ho Kim**, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea.

Synthesis, Characterization, and Theoretical Studies of Hybrid ZnO Nanoparticles and Nitrogen-Doped Carbon Nanotubes (P366)

Eduardo Gracia-Espino, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Florentino López-Urías**, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Humberto Terrones**, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA. **Mauricio Terrones**, Department of Physics, The Pennsylvania State University, Pennsylvania, USA. Research Center for Exotic Nanocarbons (JST), Shinshu University, Nagano, Japan.

Ab Initio Simulations Of Carbon Nanotube Bundles Used As Gas Sensors (P368)

Alexandre Rocha, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil. **Rodrigo Amorim**, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil. **Adalberto Fazzio**, Insituto de Fisica, Universidade de Sao Paulo, Sao Paulo, Brazil. **Antônio J. R. da Silva**, Insituto de Fisica, Universidade de Sao Paulo, Sao Paulo, Brazil. Laboratorio Nacional de Luz Sincrotron, Campinas, Brazil.

The Effects Of The Stiffness Of The Supported Ends On The Resonant Frequencies Of An Embedded Double-Wall Carbon Nanotube (P370)

Payam Soltani, Department of Mechanical Engineering,Semnan Branch, IAU, Semnan, Iran. **Payam Bahar**, Department of Mechanical Engineering,Semnan Branch, IAU, Semnan, Iran. **A. Farshidianfar**. Department of Mechanical Engineering, Ferdowsi University of Mashhad, Mashhad, Iran

Characterisation of Carbon Nanotube Macro-Yarns (P372)

Fiona Smail, **Juan Vilatela**, Department of Materials Science and Metallurgy, University of Cambridge, UK

Novel Testing Method Of Carbon Nanotube-Array Actuators (P374)

Sebastian Geiger, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Thorsten Mahrholz**, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Johannes Riemenschneider**, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany **Peter Wierach**, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Michael Sinapius**, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany.

Carbon Nanoubes as substrates for Surface Enhanced Raman Spectroscopy (P376)

Cristiano Fantini, Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Ariete Righi**, Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Marcos Pimenta**, Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Daniel Andrada**, Centro de desenvolvimento da Tecnologia

Nuclear, Belo Horizonte, Brazil. **Adelina Santos**, Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Clascidia Furtado**, Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Riichiro Saito**, Tohoku University, Sendai, Japan.

A Simulation Study on the Effects of Shear Flow and Nanotube Shape on the Microstructure and Electrical Properties of Carbon Nanotube/Polymer Composites (P378)

Ali Erdem Eken, Institute of Optical and Microelectronic Materials, Hamburg Univ. of Technology, Hamburg, Germany. **Emilio J. Tozzi**, Dept. of Chemical Engineering and Materials Science, Univ. of California, Davis, Davis, USA. **Daniel J. Klingenberg**, Dept. of Chemical and Biological Engineering, University of Wisconsin, Madison, Madison, USA. **Wolfgang Bauhofer**, Institute of Optical and Microelectronic Materials, Hamburg Univ. of Technology, Hamburg, Germany.

Vapor-Solid-Solid Growth Mechanism of Carbon Nanotubes from SiOx Nanoparticles (P380)

Bilu Liu, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Shenyang, China. NanoMaterials Group, Department of Applied Physics and Center for New Materials, Aalta, Finland. **Dai-Ming Tang**, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Shenyang, China. **Chang Liu**, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Shenyang, China. **Wencai Ren**, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Shenyang, China. **Hui-Ming Cheng**, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Shenyang, China.

Satellite Sessions

Carbon Nanomaterial Biology, Medicine and Toxicology (CNBMT11)

Friday 15th July

8:00-9:00 Registration

9:00-9:15 Opening Remarks

Invited Talk (chair: Kostas Kostarelos)

9:15-9:45 Sugar & proteins: Nano-Bioconjugates (700)

Benjamin G. Davis, Department of Chemistry, University of Oxford, Oxford, United Kingdom.

9:45-10:00 Small-Sized Aggregates of Carbon Nanohorns Enabling Cellular Uptake Control (187)

Minfang Zhang, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Xin Zhou**, Meijo University, Nagoya, Japan. **Yoshio Tahara**, Meijo University, Nagoya, Japan. Sumio Iijima, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Meijo University, Nagoya, Japan. **Masako Yudasaka,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

10:00-10:15 Coronenes Encapsulated Single-walled Carbon Nanotubes for Imaging Probes Targeted to Cancer Cells (188)

Yoko Iizumi, University of Tsukuba, Graguate School of Pure and Applied Sciences, Tsukuba, Japan. **Toshiya Okazaki,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Yoshio Tahara,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Masako Yudasaka,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Sumio Iijima,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

10:15-10:30 Electrochemically Functionalized Carbon Nanotubes and Graphene : From Device Applications to On-chip Nanobiosensors (477)

Kannan Balasubramanian, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Tetiana Kurkina,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Ravi Shankar Sundaram,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Cristina Gomez-Navarro**, Max-Planck-Institute for Solid State Research, Stuttgart, Germany; Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain. **Alexis Vlandas,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Ashraf Ahmad,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Marko Burghard,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Klaus Kern,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany; Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland.

10:30-11:30 Coffee Break

Invited Talk (chair: Emmanuel Flahaut)

11:00-11:30 Carbon nanotube-mediated siRNA for the therapy of cancer and brain disease (699)

Khuloud Al-Jamal, Institute of Pharmaceutical Science, King's College London, London, United Kingdom; Nanomedicine Laboratory, Centre for Drug Delivery Research, School of Pharmacy, London, United Kingdom.

11:30-11:45 Biocompatibility And Functionalization Of Isolated, ssDNA Suspended Single-Wall Carbon Nanotubes (26)

Kristin Kröker, Institute for Physical and Theoretical Chemistry, University of Würzburg, Würzburg, Germany. **Heike Bruhn,** Institute for Molecular Infection Biology, University of Würzburg, Würzburg, Germany. **Martin Mikyna,** Institute for Organic Chemistry, University of Würzburg, Würzburg, Germany. **Gerhard Bringmann,** Institute for Organic Chemistry, University of Würzburg, Würzburg, Germany. **Tobias Hertel,** Institute for Physical and Theoretical Chemistry, University of Würzburg, Würzburg, Germany.

11:45-12:00 Functionalization of Single-Walled Carbon Nanotubes with Ribonucleic Acids (375)

June Park, Department of Physics, Chung-Ang University, Seoul, Korea. **Yu Jin Kim,** Department of Physics, Chung-Ang University, Seoul, Korea. **Maeng-Je Seong,** Department of Physics, Chung-Ang University, Seoul, Korea. **Hayoung Go,** Department of Life Science, Chung-Ang University, Seoul, Korea. **Kangseok Lee,** Department of Life Science, Chung-Ang University, Seoul, Korea.

12:00-12:15 Cationic Carbon Nanotubes for Nucleic Acid Delivery (270)

Alessia Battigelli, CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques, Strasbourg, France; Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Julie Russier,** CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques,

Strasbourg, France. **Tatiana Da Ros,** Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Maurizio Prato,** Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Alberto Bianco,** CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques, Strasbourg, France.

12:15-12:30 PAMAM Dendrimers Decorating Carbon Nanohorns Surface as Efficient Gene Delivery Materials for Prostate Cancer Cells (687)

Maria Antonia Herrero, Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Francisco Javier Guerra Navarro,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain; NanoDrugs, S.L., Albacete, Spain; Parque Cientìfico y Tecnólogico de Albacete, Albacete, Spain. **Blanca Carrión**, NanoDrugs, S.L., Albacete, Spain. **Francisco C. Pérez-Martínez,** NanoDrugs, S.L., Albacete, Spain. **Maribel Lucío,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Noelia Rubio,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Sonia Merino,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Prado Sánchez-Verdú**, Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Maurizio Prato**, Center of Excellence for Nanostructured Materials, University of Trieste, Trieste, Italy. **Valentín Ceña**, Unidad Asociada Neurodeath, Farmacología, CSIC-UCLM, Albacete, Spain; NanoDrugs, S.L., Albacete, Spain.

12:30-15:00 Lunch and Poster Session (see pages 55-57)

Invited Talk (chair: Masako Yudasaka)

15:00-15:30 Functionalization of Nanodiamond for Biomedical Applications (691)

Anke Krüger, Institute for Organic Chemistry, Julius-Maximilians University, Wuerzburg, Germany.

15:30-15:45 Carbon Nanotubes: Effects of Plasma Protein Binding (382)

Kirsten Pondman, Low Temparature Division, MIRA Institute, Enschede, The Netherlands; Department of Pharmacology, University of Oxford, Oxford, United Kingdom. **Martin Sobik,** Low Temparature Division, MIRA Institute, Enschede, The Netherlands. **Bob Sim,** Department of Pharmacology, University of Oxford, Oxford, United Kingdom.

15:45-16:00 Self Assembly Of Lipid Nanostructures In Aligned Carbon Nanotubes (467)

Catharina Paukner, Department of Materials Science, University of Cambridge, Cambridge, UK. **Chandrashekhar Kulkarni,** Department of Chemistry, University of Graz, Graz, Austria. **Krzysztof Koziol,** Department of Materials Science, University of Cambridge, Cambridge, UK.

16:00-16:15 Antibacterial Activity of Graphite, Graphite Oxide, Graphene Oxide and Reduced Graphene Oxide: Membrane and Oxidative Stress (492)

Yuan Chen, Nanyang Technological University, Singapore, Singapore, Singapore. **Shaobin Liu,** Nanyang Technological University, Singapore, Singapore, Singapore.

16:15-16:30 Sensitivity of Boron Nitride Nanotubes toward Biomolecules (569)

Ralph Scheicher, Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden. **Saikat Mukhopadhyay,** Department of Physics, Michigan Technological University, Houghton, MI, USA. **Ravi Pandey,** Department of Physics, Michigan Technological University, Houghton, MI, USA. **Shashi Karna,** US Army Research Laboratory, Aberdeen Proving Ground, USA.

16:30-17:00 Coffee Break

Invited Talk (chair: Alberto Bianco)

17:00-17:30 Single Nanotube Imaging to Probe Complex Environments (690)

Laurent Cognet, Institut d'Optique, Université de Bordeaux, Talence, France.

17:30-17:45 Development of Glucose Sensor Using CNT Compound Materials (110)

Takamichi Hirata, Graduate School of Engineering, Tokyo City University, Tokyo, Japan; Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan. **Akira Katahira,** Graduate School of Engineering, Tokyo City University, Tokyo, Japan. **Chihiro Tsutsui,** Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan **Masahiro Akiya,** Graduate School of Engineering, Tokyo City University, Tokyo, Japan; Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan.

17:45-18:00 An Optical SWNT Biosensor for Explosives (52)

Daniel Heller, Massachusetts Institute of Technology, Cambridge, USA. **George Pratt,** Massachusetts Institute of Technology, Cambridge, USA. **Jingqing Zhang,** Massachusetts Institute of Technology, Cambridge, USA. **Nitish Nair,** Massachusetts Institute of Technology, Cambridge, USA. **Adam Hansborough,** Massachusetts Institute of Technology, Cambridge, USA. **Ardemis Boghossian,** Massachusetts Institute of Technology, Cambridge, USA. **Nigel Reuel,** Massachusetts Institute of Technology, Cambridge, USA. **Paul Barone,** Massachusetts Institute of Technology, Cambridge, USA. **Michael Strano,** Massachusetts Institute of Technology, Cambridge, USA.

18:00-18:15 Carbon Nanotube Films Preparations for Electronic, Sensors and Bioengineering Application (47)

Ivan Bobrinetskiy, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Ivan Komarov,** Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Dmitriy Kireev,** Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation.

18:15-19:00 Free Time

19:00-19:30 Welcome Drinks

19:30 Satellite Dinner

Saturday 16th July

8:00-9:00 Registration

Invited Talk (chair: Laurent Cognet)

9:00-9:30 Oxidative Stress and Nanoparticles: Badness is Only Spoiled Goodness (701)

Valerian E. Kagan, University of Pittsburgh, Pittsburgh, PA, USA.

9:30-9:45 Synthesis Bombesin-Naphthalenediimide Conjugate Functinalized Single Walled Carbon Nanotubes as a Novel Receptor Imaging Probe (427)

Zhiyuan Hu, Department of Chemistry, University of Bath,UK. **Sofia Pascu,** Department of Chemistry, University of Bath, UK.

9:45-10:00 Biodegradation Of Carbon Nanotubes Investigated Using Raman Spectroscopy (583)

Jennifer Conroy, Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland. **Anna A. Shvedova,** National Institute for Occupational Safety and Health, West Virginia University,, , USA. **Valerian E. Kagan,** Department of Environmental and Occupational Health, Centre for Free Radical and, , USA. **Aidan D. Meade,** School of Physics, College of Science and Health, Dublin Institute of Technology, Dublin, Ireland. **Anton Knyazev,** Centre For Research On Electronically Advanced Materials, Institute of Condensed Matter Physics, Ecole Polytechnique Fédérale De Lausanne, Lausanne, Switzerland. **Dermot Kelleher,** Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland. **Yuri Volkov,** Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland; for Research on Adaptive Nanostructures and Nanodevices, Trinity College Dublin, Dublin, Ireland.

10:00-10:15 The Methods of Cell Growth on Carbon Nanotubes Substrates with Making Use Of Electrostimulation (57)

Alexey Seleznev, Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Ivan Bobrinetskiy,** Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Roman Morozov,** Moscow Institute of Electronic Technology (Technical University), Moscow, Russia.

10:15-10:30 Indolizine Modified Fluorescent Single-Walled Carbon Nanotubes For Detection Of Nitroaromatics (132)

Mustafa K Bayazit, Department of Chemistry, Durham University, DH1 3LE, Durham, UK; Department of Chemistry, Imperial College London, SW7 2AZ, London, UK. **Karl S Coleman,** Department of Chemistry, Durham University, DH1 3LE, Durham, UK. **Lars-Olof Palsson,** Department of Chemistry, Durham University, DH1 3LE, Durham, UK.

10:30-11:00 Coffee Break

Invited Talk (chair: Khuloud Al-Jamal)

11:00-11:30 What Are The Critical Factors In Multi-walled Carbon Nanotubes For Mesothelial Carcinogenesis? (689)

Shinya Toyokuni, Dept of Pathology and Biological Responses, Nagoya University Graduate School, Nagoya, Japan. **Hirotaka Nagai,** Dept of Pathology and Biological Responses, Nagoya University Graduate School, Nagoya, Japan.

11:30-11:45 When Macrophages Digest Carbon Nanotubes: Intra-Cellular Dispersion And Decarbonation of Iron-Based Nanoparticles Attached To Carbon Nanotubes (115)

Pascale Launois, Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Cyrill Bussy,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France; INSERM U955, Université Paris Est Val de Marne, Créteil, France; Nanomedicine laboratory, Centre for Drug Delivery Research, London, UK. **Julien Cambedouzou,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Barbara Fayard,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France; European Synchrotron Radiation Facility, Grenoble, France. **Mathieu Pinault,** CEA, IRAMIS, SPAM, Laboratoire Francis Perrin (CEA-CNRS URA 2453), Gif-sur-Yvette, France. **Nathalie Brun,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Claudie Mory,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Jorge Boczkowski,** INSERM U955, Université Paris Est Val de Marne, Créteil, France. **Sophie Lanone,** INSERM U955, Université Paris Est Val de Marne, Créteil, France.

11:45-12:00 Biocompatibility And Toxicological Research Of Surfaces Modificated With Different Carbon Nanotubes (393)

Roman Morozov, Moscow Institute Of Electronic Technology (Technical University), Moscow, Russia. **Aleksey Seleznev,** Moscow Institute Of Electronic Technology (Technical University), Moscow, Russia.

12:00-12:15 High Uptake Cytotoxicity of Single-Walled Carbon Nanohorns in Murine Macrophage RAW264.7 (343)

Masako Yudasaka, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Yoshio Tahara,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Maki Nakamura,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Minfang Zhang,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Sumio Iijima,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Meijo University, Nagoya, Japan.

12:15-12:45 Round table discussions and closing

12:45-15:00 Lunch + Poster session

Biocompatibility And Functionalization Of Isolated, ssDNA Suspended Single-Wall Carbon Nanotubes (26)

Kristin Kröker, Institute for Physical and Theoretical Chemistry, University of Würzburg, Würzburg, Germany. **Heike Bruhn,** Institute for Molecular Infection Biology, University of Würzburg, Würzburg, Germany. **Martin Mikyna,** Institute for Organic Chemistry, University of Würzburg, Würzburg, Germany. **Gerhard Bringmann,** Institute for Organic Chemistry, University of Würzburg, Würzburg, Germany. **Tobias Hertel,** Institute for Physical and Theoretical Chemistry, University of Würzburg, Würzburg, Germany.

Carbon Nanotube Films Preparations for Electronic, Sensors and Bioengineering Application (47)

Ivan Bobrinetskiy, Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Ivan Komarov,** Moscow Institute of Electronic Technology (Technical University), Zelenograd, Russian Federation. **Dmitriy Kireev,** Moscow Institute of Electronic Technology

(Technical University), Zelenograd, Russian Federation.

An Optical SWNT Biosensor for Explosives (52)

Daniel Heller, Massachusetts Institute of Technology, Cambridge, USA. **George Pratt,** Massachusetts Institute of Technology, Cambridge, USA. **Jingqing Zhang,** Massachusetts Institute of Technology, Cambridge, USA. **Nitish Nair,** Massachusetts Institute of Technology, Cambridge, USA. **Adam Hansborough,** Massachusetts Institute of Technology, Cambridge, USA. **Ardemis Boghossian,** Massachusetts Institute of Technology, Cambridge, USA. **Nigel Reuel,** Massachusetts Institute of Technology, Cambridge, USA. **Paul Barone,** Massachusetts Institute of Technology, Cambridge, USA. **Michael Strano,** Massachusetts Institute of Technology, Cambridge, USA.

The Methods of Cell Growth on Carbon Nanotubes Substrates with Making Use Of Electrostimulation (57)

Alexey Seleznev, Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Ivan Bobrinetskiy,** Moscow Institute of Electronic Technology (Technical University), Moscow, Russia. **Roman Morozov,** Moscow Institute of Electronic Technology (Technical University), Moscow, Russia.

Adsorption Of Procion Blue MX-R (Reactive Blue 4) Dye From Water Solutions By Single-Walled Carbon Nanotubes And Multi-Walled Carbon Nanotubes (65)

Fernando Machado, Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Carlos Bergmann,** Department of Material Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil **Éder Lima,** Institute of Chemistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil. **Solange Fagan,** Department of Nanoscience, UNIFRA, Santa Maria, Brazil.

Development of Glucose Sensor Using CNT Compound Materials (110)

Takamichi Hirata, Graduate School of Engineering, Tokyo City University, Tokyo, Japan; Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan. **Akira Katahira,** Graduate School of Engineering, Tokyo City University, Tokyo, Japan. **Chihiro Tsutsui,** Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan **Masahiro Akiya,** Graduate School of Engineering, Tokyo City University, Tokyo, Japan; Nano Carbon Bio Device Research Center, Tokyo City University, Tokyo, Japan.

When Macrophages Digest Carbon Nanotubes: Intra-Cellular Dispersion And Decarbonation of Iron-Based Nanoparticles Attached To Carbon Nanotubes (115)

Pascale Launois, Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. Cyrill Bussy, Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France; INSERM U955, Université Paris Est Val de Marne, Créteil, France; Nanomedicine laboratory, Centre for Drug Delivery Research, London, UK. **Julien Cambedouzou,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Barbara Fayard,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France; European Synchrotron Radiation Facility, Grenoble, France. **Mathieu Pinault,** CEA, IRAMIS, SPAM, Laboratoire Francis Perrin (CEA-CNRS URA 2453), Gif-sur-Yvette, France. **Nathalie Brun,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Claudie Mory,** Laboratoire de Physique des Solides, UMR CNRS 8502, Université Paris-Sud 11, Orsay, France. **Jorge Boczkowski,** INSERM U955, Université Paris Est Val de Marne, Créteil, France. **Sophie Lanone,** INSERM U955, Université Paris Est Val de Marne, Créteil, France.

Indolizine Modified Fluorescent Single-Walled Carbon Nanotubes For Detection Of Nitroaromatics (132)

Mustafa K Bayazit, Department of Chemistry, Durham University, DH1 3LE, Durham, UK; Department of Chemistry, Imperial College London, SW7 2AZ, London, UK. **Karl S Coleman,** Department of Chemistry, Durham University, DH1 3LE, Durham, UK. **Lars-Olof Palsson,** Department of Chemistry, Durham University, DH1 3LE, Durham, UK.

Small-Sized Aggregates of Carbon Nanohorns Enabling Cellular Uptake Control (187)

Minfang Zhang, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Xin Zhou,** Meijo University, Nagoya, Japan. **Yoshio Tahara,** Meijo University, Nagoya, Japan. **Sumio Iijima,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Meijo University, Nagoya, Japan. **Masako Yudasaka,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

Coronenes Encapsulated Single-walled Carbon Nanotubes for Imaging Probes Targeted to Cancer Cells (188)

Yoko Iizumi, University of Tsukuba, Graguate School of Pure and Applied Sciences, Tsukuba, Japan. **Toshiya Okazaki,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Yoshio Tahara,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Masako Yudasaka,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Sumio Iijima,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

Cationic Carbon Nanotubes for Nucleic Acid Delivery (270)

Alessia Battigelli, CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques, Strasbourg, France; Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Julie Russier,** CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques, Strasbourg, France. **Tatiana Da Ros,** Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Maurizio Prato,** Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, Trieste, Italy. **Alberto Bianco,** CNRS, UPR 9021, Laboratoire d'Immunologie et Chimie Thérapeutiques, Strasbourg, France.

High Uptake Cytotoxicity of Single-Walled Carbon Nanohorns in Murine Macrophage RAW264.7 (343)

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Functionalization of Single-Walled Carbon Nanotubes with Ribonucleic Acids (375)

June Park, Department of Physics, Chung-Ang University, Seoul, Korea. **Yu Jin Kim,** Department of Physics, Chung-Ang University, Seoul, Korea. **Maeng-Je Seong,** Department of Physics, Chung-Ang University, Seoul, Korea. **Hayoung Go,** Department of Life Science, Chung-Ang University, Seoul, Korea. **Kangseok Lee,** Department of Life Science, Chung-Ang University, Seoul, Korea.

Carbon Nanotubes: Effects of Plasma Protein Binding (382)

Kirsten Pondman, Low Temparature Division, MIRA Institute, Enschede, The Netherlands; Department of Pharmacology, University of Oxford, Oxford, United Kingdom. **Martin Sobik,** Low Temparature Division, MIRA Institute, Enschede, The Netherlands. **Bob Sim,** Department of Pharmacology, University of Oxford, Oxford, United Kingdom.

Biocompatibility And Toxicological Research Of Surfaces Modificated With Different Carbon Nanotubes (393)

Roman Morozov, Moscow Institute Of Electronic Technology (Technical University), Moscow, Russia. **Aleksey Seleznev,** Moscow Institute Of Electronic Technology (Technical University), Moscow, Russia.

Synthesis Bombesin-Naphthalenediimide Conjugate Functinalized Single Walled Carbon Nanotubes as a Novel Receptor Imaging Probe (427)

Zhiyuan Hu, Department of Chemistry, University of Bath, UK. **Sofia Pascu,** Department of Chemistry, University of Bath, UK.

Self Assembly Of Lipid Nanostructures In Aligned Carbon Nanotubes (467)

Catharina Paukner, Department of Materials Science, University of Cambridge, Cambridge, UK. **Chandrashekhar Kulkarni,** Department of Chemistry, University of Graz, Graz, Austria. **Krzysztof Koziol,** Department of Materials Science, University of Cambridge, Cambridge, UK.

Electrochemically Functionalized Carbon Nanotubes and Graphene : From Device Applications to On-chip Nanobiosensors (477)

Kannan Balasubramanian, Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Tetiana Kurkina,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Ravi Shankar Sundaram,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Cristina Gomez-Navarro,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany; Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain. **Alexis Vlandas,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Ashraf Ahmad,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Marko Burghard,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany. **Klaus Kern,** Max-Planck-Institute for Solid State Research, Stuttgart, Germany; Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland.

Antibacterial Activity of Graphite, Graphite Oxide, Graphene Oxide and Reduced Graphene Oxide: Membrane and Oxidative Stress (492)

Yuan Chen, Nanyang Technological University, Singapore, Singapore, Singapore. **Shaobin Liu,** Nanyang Technological University, Singapore, Singapore, Singapore.

Sensitivity of Boron Nitride Nanotubes toward Biomolecules (569)

Ralph Scheicher, Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden. **Saikat Mukhopadhyay,** Department of Physics, Michigan Technological University, Houghton, MI, USA. **Ravi Pandey,** Department of Physics, Michigan Technological University, Houghton, MI, USA. **Shashi Karna,** US Army Research Laboratory, Aberdeen Proving Ground, USA.

Biodegradation Of Carbon Nanotubes Investigated Using Raman Spectroscopy (583)

Jennifer Conroy, Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland. **Anna A. Shvedova,** National Institute for Occupational Safety and Health, West Virginia University, USA. **Valerian E. Kagan,** Department of Environmental and Occupational Health, Centre for Free Radical and, , USA. **Aidan D. Meade,** School of Physics, College of Science and Health, Dublin Institute of Technology, Dublin, Ireland. **Anton Knyazev,** Centre For Research On Electronically Advanced Materials, Institute of Condensed Matter Physics, Ecole Polytechnique Fédérale De Lausanne, Lausanne, Switzerland. **Dermot Kelleher,** Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland. **Yuri Volkov,** Department of Clinical Medicine, Trinity College Dublin, Dublin, Ireland; for Research on Adaptive Nanostructures and Nanodevices, Trinity College Dublin, Dublin, Ireland.

The Growth Pattern and Thickness Evaluation of Mesenchymal Stem Cells Cultured on a Variety of Single-Walled Carbon Nanotube (633)

Jae-Hyeok Lee, Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Wooyoung Shim,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Najeeb Choolakadavil Khalid,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Won-Seok Kang,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Jin-Woo Park,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Minsu Lee,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Gwang Lee,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea. **Jae-Ho Kim,** Department of Molecular Science and Technology, Ajou University, Suwon, South Korea.

PAMAM Dendrimers Decorating Carbon Nanohorns Surface as Efficient Gene Delivery Materials for Prostate Cancer Cells (687)

Maria Antonia Herrero, Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain. **Francisco Javier Guerra Navarro,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Químicas-IRICA-UCLM, Ciudad Real, Spain; NanoDrugs, S.L., Albacete, Spain; Parque Científico y Tecnólogico de Albacete, Albacete, Spain. **Blanca Carrión,** NanoDrugs, S.L., Albacete, Spain. **Francisco C. Pérez-Martínez,** NanoDrugs, S.L., Albacete, Spain. **Maribel Lucío,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Quìmicas-IRICA-UCLM, Ciudad Real, Spain. **Noelia Rubio,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Quìmicas-IRICA-UCLM, Ciudad Real, Spain. **Sonia Merino,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Quìmicas-IRICA-UCLM, Ciudad Real, Spain. **Prado Sánchez-Verdú,** Inorganic, Organic, Biochemistry Dept, Fac. Ciencias Quìmicas-IRICA-UCLM, Ciudad Real, Spain. **Maurizio Prato,** Center of Excellence for Nanostructured Materials, University of Trieste, Trieste, Italy. **Valentín Ceña,** Unidad Asociada Neurodeath, Farmacología, CSIC-UCLM, Albacete, Spain; NanoDrugs, S.L., Albacete, Spain.

GRAPHENE TECHNOLOGY: PRODUCTION, ASSEMBLY AND APPLICATIONS

Friday 15th July

8:00-9:00 Registration

9:00-9:15 Opening Remarks

A.C. Ferrari, ***M. Chhowalla***

Invited Talk (chair: M. Chhowalla)

9:15-9:45 Molecular-Scale Tailoring of Graphene Surface Chemistry via Organic Functionalization (645)

Mark Hersam, Northwestern University, Evanston, IL, USA.

9:45-10:00 Selective Edge Functionalization of Graphene by Room Temperature Mild Plasma Treatment (510)

Toshiaki Kato, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Liying Jiao**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xinran Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Hailiang Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xiaolin Li**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Li Zhang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Rikizo Hatakeyama**, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Hongjie Dai**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA.

10:00-10:15 Fabrication of Graphene-based Electronic Devices by Selective Electrochemical Reduction in Air. (511)

Vincenzo Palermo, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Jeffrey M. Mativetsky**, ISIS – CNRS 7006, Université de Strasbourg, Strasbourg, France. **Andrea Liscio**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Emanuele Treossi**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Alberto Zanelli**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Paolo Samorì**, ISIS – CNRS 7006, Université de Strasbourg, Strasbourg, France.

10:15-10:30 Highly Efficient Exfoliation and Sorting of Graphite flakes (404)

Francesco Bonaccorso, Department of Engineering, University of Cambridge, Cambridge, UK. **Giulia Privitera**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **Valeria Nicolosi**, Department of Materials, Oxford University, Oxford, UK. **Tawfique Hasan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Gianluca Savini**, Department of Engineering, University of Cambridge, Cambridge, UK. **Nicola M. Pugno**, Department of Structural Engineering, Torino, Italy. **Andrea C. Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

10:30-11:00 Coffee Break

Invited Talk (chair: B.H. Hong)

11:00-11:30 Atomic Layer Growth of Graphene Films (662)

Luigi Colombo, Texas Instruments Incorporated, Dallas, USA. **Carl Magnuson**, University of Texas at Austin, Austin, USA. **Yufeng Hao**, University of Texas at Austin, Austin, USA. **Rodney S. Ruoff**, University of Texas at Austin, Austin, USA.

11:30-11:45 Epitaxial CVD Growth of Single-Layer Graphene over Metal Films Crystallized on Sapphire and MgO (521)

Hiroki Ago, Kyushu University, Fukuoka, Japan. **Yoshito Ito**, Kyushu University, Fukuoka, Japan. **Baoshan Hu**, Kyushu University, Fukuoka, Japan. **Yui Ogawa**, Kyushu University, Fukuoka, Japan. **Carlo Orofeo**, Kyushu University, Fukuoka, Japan. **Kenji Kawahara**, Kyushu University, Fukuoka, Japan. **Masaharu Tsuji**, Kyushu University, Fukuoka, Japan. **Ken-ichi Ikeda**, Kyushu University, Fukuoka, Japan. **Seigi Mizuno**, Kyushu University, Fukuoka, Japan. **Hiroki Hibino**, NTT Basic Research Laboratories, Kanagawa, Japan.

11:45-12:00 Direct Growth of Nanographene on Glass (288)

Jaewu Choi, Kyung Hee University. **Chang Mook Lee**, Kyung Hee University.

Invited Talk

12:00-12:30 Growth Dynamics of Graphene Nanoislands, Nanoripples and Nanobubbles (706)

Kian Ping Loh, Department of Chemistry, National University of Singapore, Singapore, Singapore.

12:30-15:00 Lunch and Poster Session (The Bowling Green, Pembroke College-see pages 62-66)

Invited Talk (chair: S. Roche)

15:00-15:30 Transport in Graphene Constrictions and Quantum Dots (676)

Thomas Ihn, ETH Zurich, Zurich, Switzerland. **Susanne Dröscher**, ETH Zurich, Zurich, Switzerland. **Helena Knowles**, ETH Zurich, Zurich, Switzerland. **Klaus Ensslin**, ETH Zurich, Zurich, Switzerland.

15:30-15:45 Graphene Charge Detectors Meet Nanotube Quantum Dots (85)

Stephan Engels, JARA-FIT and II. Institute of Physics, Aachen, Germany. **Bernat Terres**, JARA-FIT and II. Institute of Physics, Aachen, Germany; Peter Grünberg Institute, Jülich, Germany. **Christian Volk**, JARA-FIT and II. Institute of Physics, Aachen, Germany; Peter Grünberg Institute, Jülich, Germany. **Jan Dauber**, JARA-FIT and II. Institute of Physics, Aachen, Germany. **Peter Weber**, JARA-FIT and II. Institute of Physics, Aachen, Germany. **Stefan Trellenkamp**, Peter Grünberg Institute, Jülich, Germany. **Christoph Stampfer**, JARA-FIT and II. Institute of Physics, Aachen, Germany; Peter Grünberg Institute, Jülich, Germany.

15:45-16:00 Spin-orbit coupling and weak localisation in graphene (704)

Edward McCann, Physics Department, Lancaster University, Lancaster, UK. **Volodya Falíko**, Physics Department, Lancaster University, Lancaster, UK.

Invited Talk

16:00-16:30 Energy Dissipation and Transport in Graphene Devices (677)

Eric Pop, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **Myung-Ho**

Bae, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **Vincent Dorgan**, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **David Estrada**, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **Austin Lyons**, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **Ashkan Behnam**, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA. **Zhun-Yong Ong**, Electrical & Computer Eng., Micro & Nano Lab, Univ Illinois Urbana-Champaign, Urbana, IL, USA.

16:30-17:00 Coffee Break

Invited Talk (chair: L. Colombo)

17:00-17:30 High-Frequency Graphene Devices and Circuits (677)

Yu-Ming Lin, IBM, Yorktown Heights, NY, USA.

17:30-17:45 High Frequency Coplanar Graphene Waveguides on Low-loss Dielectric Substrates (454)

Helgi Skulason, Dept. of Electrical and Computer Engineering, McGill University, Montréal, Canada. **Hoang Nguyen**, Poly-Grames Research Center, École Polytechnique de Montréal, Montréal, Canada. **Abdeladim Guermoune**, Département de Chimie, Université du Québec à Montréal, Montréal, Canada. **Mohamed Siaj**, Département de Chimie, UniversitGrap du Québec à Montréal, Montréal, Canada. **Christophe Caloz**, Poly-Grames Research Center, École Polytechnique de Montréal, Montréal, Canada. **Thomas Szkopek**, Dept. of Electrical and Computer Engineering, McGill University, Montréal, Canada.

Invited Talk

17:45-18:15 Graphene RF Devices: New Opportunities for Ubiquitous Electronics (678)

Tomas Palacios, Massachusetts Institute of Technology, Cambridge, MA. **Allen Hsu**, Massachusetts Institute of Technology, Cambridge, MA. **Han Wang**, Massachusetts Institute of Technology, Cambridge, MA. **Benjamin Mailly**, Massachusetts Institute of Technology, Cambridge, MA. **Ki-Kan Kim**, Massachusetts Institute of Technology, Cambridge, MA. **Jing Kong**, Massachusetts Institute of Technology, Cambridge, MA.

18:15-19:00 Free Time

19:00-19:30 Welcome Drinks

19:30-22:00 Satellite Dinner

Saturday 16th July

Invited Talk (chair: J. Kinaret)

8:00-9:00 Registration

9:00-9:30 Graphene Bionanoscience & Engineering: Toward Single-molecule DNA Sequencing (692)

Gregory Schneider, Kavli Insitute of Nanoscience, Dept of Bionanoscience, Delft, Netherlands.

9:30-9:45 Graphene For Next-Generation Electronics: Limits And Perspectives (383)

Gianluca Fiori, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Giuseppe Iannaccone**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Samantha Bruzzone**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Alessandro Betti**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy.

9:45-10:00 Graphene Logic Gates and Memories with Improved Current On/Off Ratio (463)

Roman Sordan, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Floriano Traversi**, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Fabrizio Nichele**, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Eberhard Ulrich Stützel**, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, Stuttgart, Germany. **Adarsh Sagar**, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, Stuttgart, Germany. **Kannan Balasubramanian**, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, Stuttgart, Germany. **Marko Burghard**, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, Stuttgart, Germany. **Klaus Kern**, Max-Planck-Institut für Festkörperforschung, Heisenbergstr. 1, Stuttgart, Germany; Institute de Physique des Nanostructures, EPFL, Lausanne, Switzerland.

10:00-10:15 Selective-area-grown Graphene Transistor by Thermal Chemical Vapor Deposition Method (29)

Makoto Okai, Hitachi Research Lab., Hitachi Ltd., Hitachi, Japan. **Kumiko Tokumoto**, Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Takashi Kyotani**, Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Masahide Tokuda**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Ken Tsutsui**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Yasuo Wada**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan.

10:15-10:30 Straining Graphene By CVD On Cu And Magnetotransport On Large Scale Graphene. (365)

Victor Yu, McGill University, Center for the Physics of Materials, Montreal, Canada. **Eric Whiteway**, McGill University, Center for the Physics of Materials, Montreal, Canada. **Jesse Maassen**, McGill University, Center for the Physics of Materials, Montreal, Canada. **Michael Hilke**, McGill University, Center for the Physics of Materials, Montreal, Canada.

10:30-11:00 Coffee Break

Invited Talk

11:00-11:30 Graphene film for flexible and stretchable electronics (657)

Jong-Hyun Ahn. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Korea.

11:30-11:45 Graphene xylophone (436)

Hak Seong Kim, **Miri Seo**, **Sang Wook Lee**. Division of Quantum Phases & Devices, School of Physics, Konkuk University, Seoul, Republic of Korea

11:45-12:00 Electrically Switchable, Flexible Smart Windows Using Graphene-based Transparent Conductors (432)

Tawfique Hasan, Department of Engineering, University of Cambridge, Cambridge, UK. **Andriy Dyadyusha**, Department of Engineering, University of Cambridge, Cambridge, UK. **Zhipei Sun**, Department of Engineering, University of Cambridge, Cambridge, UK. **Francesco Bonaccorso**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **William Richards**, Department of Engineering, University of Cambridge, Cambridge, UK. **Tero Kulmala**, Department of Engineering, University of Cambridge, Cambridge, UK. **Weiping Wu**, Department of Engineering, University of Cambridge, Cambridge, UK. **Daping Chu**, Department of Engineering, University of Cambridge, Cambridge, UK. **Andrea C. Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

Invited Talk

12:00-12:30 Graphene NEMS: Direct Readout and Magnetometry (705)

Vikram Deshpande, Columbia University, New York, NY, USA. **J. Hone**, Columbia University, New York, NY, USA.

12:30-15:00 Lunch and Poster Session (The Bowling Green, Pembroke College see pages 62-66)

Chair: A.C. Ferrari

15:00-15:15 Characterizing Devices and Twisted Layers of Graphene by Resonance Raman Scattering (363)

Marcos Pimenta, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Ariete Righi**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Sara Costa**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Daniela Mafra**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Amanda Coimbra**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Luciano Moura**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Elie Moujaes**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Cristiano Fantini**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Helio Chacham**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Ricardo Nunes**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil.

15:15-15:30 Spectroscopic Characterization of Atomically Precise Graphene Nanoribbons (323)

Yenny Hernandez, Max Planck Institute for Polymer Research, Mainz, Germany. **Huafeng Yang**, Department of Physics, Free University Berlin, Berlin, Germany. **Cornelius Thiele**, Institute for Nanotechnology. Karlsruhe Institute for Technology, Karlsruhe, Germany. **Felipe Pereira**, Max Planck Institute for Polymer Research., Mainz, Germany. **Davide Donadio**, Max Planck Institute for Polymer Research, Mainz, Germany. **Xinliang Feng**, Max Planck Institute für Polymer Research., Mainz, Germany. **Cinzia Casiraghi**, Department of Physics, Free University Berlin, Berlin, Germany; School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK. **Ralph Krupke**, Institute for Nanotechnology. Karlsruhe Institute for Technology, Karlsruhe, Germany. **Klaus Müllen**.

15:30-15:45 Wideband Tunable, High-power Ultrafast Lasers Mode-locked By Graphene (504)

Zhipei Sun, Department of Engineering, University of Cambridge, Cambridge, UK. **Haijuan Yu**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Daniel Popa**, Department of Engineering, University of Cambridge, Cambridge, UK. **Xuechun Lin**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Tawfique Hasan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **Ling Zhang**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Wei Hou**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Jinming Li**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Andrea Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

15:45-16:00 Graphene Bubble As Adaptive Focus Lens (300)

C. Casiraghi, Physics department, Free University, Berlin, Germany; School of Chemistry and Photon Science Institute, University of Manchester, Manchester, UK. **T. Georgiou**, School of Physics and Astronomy, University of Manchester, Manchester, UK. **J. Zabel**, Physics department, Free University, Berlin, Germany. **K. S. Novoselov**, School of Physics and Astronomy, University of Manchester, Manchester, UK.

16:00-16:15 Electron Emission from Free-Standing Graphene Edge (345)

Jeff Tsai, Graduate Institute of Electro-Optical Engineering, Tatung University, Taipei, Taiwan. **Timothy Chu**, Graduate Institute of Electro-Optical Engineering, Tatung University,, Taipei, Taiwan.

16:15-16:30 Microwave Impedance Measurements of Graphene and Graphene Oxide (665)

Ling Hao, National Physical Laboratory, Teddington, UK. **John Gallop**, National Physical Laboratory, Teddington, UK. **Mattevi Mattevi**, Imperial College, London, UK. **Norbert Klein**, Imperial College, London, UK. **Lesley Cohen**, Imperial College, London, UK.

16:30-16:45 Threshold Behavior of Stimulated Terahertz Emission from Optically Pumped Graphene (173)

Akira Satou, Tohoku University, Sendai, Japan; Japan Science and Technology Agency, Tokyo, Japan. **Stephane Boubanga-Tombet**, Tohoku University, Sendai, Japan. **Victor Ryzhii**, University of Aizu, Aizu-Wakamatsu, Japan; Japan Science and Technology Agency, Tokyo, Japan. **Taiichi Otsuji**, Tohoku University, Sendai, Japan; Japan Science and Technology Agency, Tokyo, Japan.

16:45-17:00 Plasmonic Enhanced Graphene Photodetector (655)

Tim Echtermeyer, Department of Engineering, University of Cambridge, Cambridge, UK. **Liam Britnell**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Silvia Milana**, Department of Engineering, University of Cambridge, Cambridge, UK. **Antonio Lombardo**, Department of Engineering, University of Cambridge, Cambridge, UK. **Roman Gorbachev**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Alexander Grigorenko**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Andre Geim**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Konstantin Novoselov**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Andrea Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

17:00-17:30 Round Table Discussion: A Vision for Graphene 2023, moderator: K.S. Novoselov.

Poster Sessions

Selective-area-grown Graphene Transistor by Thermal Chemical Vapor Deposition Method (29)

Makoto Okai, Hitachi Research Lab., Hitachi Ltd., Hitachi, Japan. **Kumiko Tokumoto**, Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Takashi Kyotani**, Inst. of Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan. **Masahide Tokuda**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Ken Tsutsui**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan. **Yasuo Wada**, Bio-Nano Electronics Research Center, Toyo Univ., Kawagoe, Japan.

A Chemist's Method For Making Pure Clean Graphene (32)

Sharali Malik, Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, Karlsruhe, Germany. **Aravind Vijayaraghavan**, Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, Karlsruhe, Germany; University of Manchester, School of Computer Science, Manchester, UK. **Rolf Erni**, Electron Microscopy Center, EMPA, D¸bendorf, Switzerland. **Katsuhiko Ariga**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan. **Ivan Khalakhan**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan; Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Praha, Czech Republic. **Jonathan Hill**, WPI-Center for Materials Nanoarchitectonics, NIMS, Tsukuba, Japan.

Brownian Dynamics Simulations Of Dilute Graphene Solutions (50)

Micah Green, Department of Chemical Engineering, Texas Tech University, Lubbock, TX, USA. **Yueyi Xu**, Department of Chemical Engineering, Texas Tech University, Lubbock, TX, USA.

Determination of the Quantum Capacitance of Gated Bilayer Graphene Using a Five-Nearest Neighbor Tight-Binding Model (80)

Elie Moujaes, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. **Ricardo Wagner Nunes**, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. **Marcos Pimenta**, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil.

Mechanism of CVD Graphene Growth (84)

Feng Ding, ITC, Hong Kong Polytechnic Univervsity, Hong Kong, China

Graphene Charge Detectors Meet Nanotube Quantum Dots (85)

Stephan Engels, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany. **Bernat Terres**, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany; Peter Grünberg Institute 9, Forschungszentrum Jülich, Jülich, Germany. **Christian Volk**, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany; Peter Grünberg Institute 9, Forschungszentrum Jülich, Jülich, Germany. **Jan Dauber**, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany. **Peter Weber**, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany. **Stefan Trellenkamp**, Peter Grünberg Institute 9, Forschungszentrum J¸lich, J¸lich, Germany. **Christoph Stampfer**, JARA-FIT and II. Institute of Physics, RWTH Aachen, Aachen, Germany; Peter Grünberg Institute 9, Forschungszentrum Jülich, Jülich, Germany.

Mechanism Of Near-Field Enhancement In Two-Dimensional Systems. (96)

Rodolfo Maximiano, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **Ado Jorio**, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **Gustavo Cancado**, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

CVD Synthesis Of Graphene Using Ethanol And Dimethyl Ether On Ni Foil (161)

Bo Hou, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Xiao Chen**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Erik Einarsson**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan; GCOE for Mechanical Systems Innovation, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Shigeo Maruyama**, Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan.

Electrically Conductive Oxygen Barrier Film Formed by Graphene Layers (163)

Kwonwoo Shin, Korea Electronics Technology Institute, Seongnam, Korea. **Yu Lan**, Korea Electronics Technology Institute, Seongnam, Korea; Myongji University, Yongin, Korea. **Jong Hun Han**, Korea Electronics Technology Institute, Seongnam, Korea.

Threshold Behavior of Stimulated Terahertz Emission from Optically Pumped Graphene (173)

Akira Satou, Tohoku University, Sendai, Japan; Japan Science and Technology Agency, Tokyo, Japan. **Stephane Boubanga-Tombet**, Tohoku University, Sendai, Japan. **Victor Ryzhii**, University of Aizu, Aizu-Wakamatsu, Japan; Japan Science and Technology Agency, Tokyo, Japan. **Taiichi Otsuji**, Tohoku University, Sendai, Japan; Japan Science and Technology Agency, Tokyo, Japan.

Electronic Structure of Graphene Adsorbed on (0001) Surfaces of SiO_{2} Substrate (174)

Thanh Cuong Nguyen, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan. **Minoru Otani**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan. **Susumu Okada**, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan.

Functionalization of graphene using nitrogen ion (175)

Ki-Jeong Kim, Beamline Research Division, Pohang Accelerator Laboratory (PAL), Pohang 790-784, Republic of Korea. **Sena Yang**, Department of Chemistry, Sookmyung Women's University, Seoul 140-742, Republic of Korea. **Sunmin Park**, Department of Chemistry, Sookmyung Women's University, Seoul 140-742, Republic of Korea. **Hae Kyung Jung**, Department of Physics, Daegu University, Gyeongsan, Republic of Korea. **Bongsoo Kim**, Beamline Research Division, Pohang Accelerator Laboratory (PAL), Pohang 790-784, Republic of Korea. **Hangil Lee**, Department of Chemistry, Sookmyung Women's University, Seoul 140-742, Republic of Korea.

Interaction Between Two Graphene Sheets With A Turbostratic Orientational Relationship (176)

Yasushi Shibuta, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan. **James Elliott**, Department

of Materials Science & Metallurgy, University of Cambridge, Cambridge, UK.

Magnetic Ordering Of Adatoms On Graphene (201)

Yury Sherkunov, Lancaster University, Lancaster, UK. **Vadim Cheianov**, Lancaster University, Lancaster, UK. **Vladimir Falko**, Lancaster University, Lancaster, UK.

Graphene-Based Nanomaterials and Nanostructures: Synthesis, Fabrication, Characterization and Applications (207)

Hua Zhang, School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore.

Valence band of graphite oxide (212)

Hae Kyung Jeong, Daegu University/Physics department, Gyeongsan, South Korea. **Ki-jeong Kim**, Pohang Accelerator Laboratory/Beamline research division, Pohang, South Korea.

Stacking Dependent Electronic Structure and Transport in Bilayer Graphene Nanoribbons (250)

Ravi Pandey, Department of Physics, Michigan Technological University, Houghton, MI, USA. **Xiaoliang Zhong**, Department of Physics, Michigan Technological University, Houghton, MI, USA. **Shashi Karna**, US Army Research Laboratory, Aberdeen Proving Ground, MD, USA.

Melamine For Stabilization Of Graphene Sheets By Ball Milling Processes (252)

Veronica Leon, Departamento de Química Orgánica-IRICA, Facultad de Química (UCLM) Ciudad Real, Spain. **Mildred Quintana**, Dipartamento di Scienze Farmaceutiche, Università degli Studi di Trieste, Trieste, Italy. **Maria Antonia Herrero**, Departamento de Química Orgánica-IRICA, Facultad de Química (UCLM), Ciudad Real, Spain. **Maurizio Prato**, Dipartamento di Scienze Farmaceutiche, Università degli Studi di Trieste, Trieste, Italy. **Ester Vazquez**, Departamento de Química Orgánica-IRICA, Facultad de Química (UCLM), Ciudad Real, Spain.

Graphene-Based Multifunctional Iron Oxide Nanosheets with Tunable Properties (285)

Won San Choi, Department of Applied Chemistry, Hanbat National University, Daejeon, Republic of Korea. **Ha-Jin Lee**, Jeonju Center, Korea Basic Science Institute (KBSI), Jeonju, Republic of Korea. **Hyeah Goh**, Jeonju Center, Korea Basic Science Institute (KBSI), Jeonju, Republic of Korea.

Graphene Nanocomposite-Trigered Enhancing Growth of Metal Oxide: An Ideal Nanocatalyst for Removing Poison (286)

Ha-Jin Lee, Korea Basic Science Institute, Jeonju, South Korea. **Bora Nam**, Korea Basic Science Institute, Jeonju, South Korea. **Young Boo Lee**, Korea Basic Science Institute, Jeonju, South Korea. **Tae Sung Bae**, Korea Basic Science Institute, Jeonju, South Korea. **Won San Choi**, Hanbat National University, Daejeon, South Korea.

Direct Growth of Nanographene on Glass (288)

Jaewu Choi, Kyung Hee University. **Chang Mook Lee**, Kyung Hee University.

Interaction And Self-assembly Of Pyrene Molecules On Graphene Studied By Raman Spectroscopy (299)

C. Casiraghi, Free University, Berlin, Germany; School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK. **H. Yang**, Free University, Berlin, Germany. **Y. Hernandez**, Max Planck Institute for Polymer Research, Mainz, Germany. **A. Eckmann**, School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK. **X. Feng**, Max Planck Institute for Polymer Research, Mainz, Germany. **K. Mullen**, Max Planck Institute for Polymer Research, Mainz, Germany.

Graphene Bubble As Adaptive Focus Lens (300)

C. Casiraghi, Physics department, Free University, Berlin, Germany; School of Chemistry and Photon Science Institute, University of Manchester, Manchester, UK. **T. Georgiou**, School of Physics and Astronomy, University of Manchester, Manchester, UK. **J. Zabel**, Physics department, Free University, Berlin, Germany. **K. S. Novoselov**, School of Physics and Astronomy, University of Manchester, Manchester, UK.

CO_2 Detection by Polyethyleneimine Functionalized Graphene Field Effect Transistors (301)

Shadi Sabri, McGill University, Montreal, Canada. **Jonathan Guillemette**, McGill University, Montreal, Canada. **Abdelaadim Guermoune**, Université du Québec à Montréal, Montréal, Canada. **Mohmed Siaj**, Université du Québec à Montréal, Montreal, Canada. **Thomas Szkopek**, McGill University, Montreal, Canada.

Spectroscopic Characterization of Atomically Precise Graphene Nanoribbons (323)

Yenny Hernandez, Max Planck Institute for Polymer Research, Mainz, Germany. **Huafeng Yang**, Department of Physics, Free University Berlin, Berlin, Germany. **Cornelius Thiele**, Institute for Nanotechnology. Karlsruhe Institute for Technology, Karlsruhe, Germany. **Felipe Pereira**, Max Planck Institute for Polymer Research, Mainz, Germany. **Davide Donadio**, Max Planck Institute for Polymer Research, Mainz, Germany. **Xinliang Feng**, Max Planck Institute for Polymer Research, Mainz, Germany. **Cinzia Casiraghi**, Department of Physics, Free University Berlin, Berlin, Germany; School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK. **Ralph Krupke**, Institute for Nanotechnology. Karlsruhe Institute for Technology, Karlsruhe, Germany. **Klaus Müllen**.

Raman Spectroscopy of Graphane, Fluoro-graphene and Oxidized Graphene (334)

Alexandre Felten, Physics department, Free University Berlin, Berlin, Germany; Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany. **Axel Exckmann**, School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK. **Jean-Jacques Pireaux**, centre de recherche PMR, University of Namur, Namur, Belgium. **Ralph Krupke**, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany; DFG-Center for Functional Nanostructures, Karlsruhe Institute of Technology, Karlsruhe, Germany. **Cinzia Casiraghi**, Physics department, Free University Berlin, Berlin, Germany; School of Chemistry and Photon Science Institute, Manchester University, Manchester, UK.

Electron Emission from Free-Standing Graphene Edge (345)

Jeff Tsai, Graduate Institute of Electro-Optical Engineering, Tatung University,, Taipei, Taiwan. **Timothy Chu**, Graduate Institute of Electro-Optical Engineering, Tatung University, Taipei, Taiwan.

Stretching A Bilayer Graphene (360)

Otakar Frank, J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic; FORTH / ICE-HT, Patras, Greece. **Georgia Tsoukleri**, FORTH / ICE-HT, Patras,

Greece. **John Parthenios**, FORTH / ICE-HT, Patras, Greece. **Konstantinos Papagelis**, Materials Science Department, University of Patras, Patras, Greece. **Ibtsam Riaz**, School of Physics and Astronomy, University of Manchester, Manchester, UK. **Rashid Jalil**, School of Physics and Astronomy, University of Manchester, Manchester, UK. **Kostya S. Novoselov**, School of Physics and Astronomy, University of Manchester, Manchester, UK. **Ladislav Kavan**, J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic. **Costas Galiotis**, FORTH / ICE-HT, Patras, Greece; Materials Science Department, University of Patras, Patras, Greece.

Characterizing Devices and Twisted Layers of Graphene by Resonance Raman Scattering (363)

Marcos Pimenta, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Ariete Righi**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Sara Costa**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Daniela Mafra**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Amanda Coimbra**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Luciano Moura**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Elie Moujaes**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Cristiano Fantini**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Helio Chacham**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil. **Ricardo Nunes**, Departamento de Fisica - UFMG, Belo Horizonte, Brasil.

Straining Graphene By CVD On Cu And Magnetotransport On Large Scale Graphene. (365)

Victor Yu, McGill University, Center for the Physics of Materials, Montreal, Canada. **Eric Whiteway**, McGill University, Center for the Physics of Materials, Montreal, Canada. **Jesse Maassen**, McGill University, Center for the Physics of Materials, Montreal, Canada. **Michael Hilke**, McGill University, Center for the Physics of Materials, Montreal, Canada.

Ab initio study of optical properties of rippled graphene (366)

Olga Sedelnikova, Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia. **Lyubov Bulusheva**, Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia. **Aleksandr Okotrub**, Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia.

Graphene For Next-Generation Electronics: Limits And Perspectives (383)

Gianluca Fiori, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Giuseppe Iannaccone**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Samantha Bruzzone**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy. **Alessandro Betti**, Dipartimento Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, Pisa, Italy.

Highly Efficient Exfoliation and Sorting of Graphite flakes (404)

Francesco Bonaccorso, Department of Engineering, University of Cambridge, Cambridge, UK. **Giulia Privitera**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **Valeria Nicolosi**, Department of Materials, Oxford University, Oxford, UK. **Tawfique Hasan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Gianluca Savini**, Department of Engineering, University of Cambridge, Cambridge, UK. **Nicola M. Pugno**, Department of Structural Engineering, Torino, Italy. **Andrea C. Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

Facile Functionalization of Graphene Sheets with Photoactive Groups via 'Click' Chemistry (408)

Hao-Li Zhang, **Hang-Xing Wang**, **Kai-Ge Zhou**, **Yu-Long Xie**, **Jing Zeng**, **Na-Na Chai**, **Ju Li**.

Electrically Switchable, Flexible Smart Windows Using Graphene-based Transparent Conductors (432)

Tawfique Hasan, Department of Engineering, University of Cambridge, Cambridge, UK. **Andriy Dyadyusha**, Department of Engineering, University of Cambridge, Cambridge, UK. **Zhipei Sun**, Department of Engineering, University of Cambridge, Cambridge, UK. **Francesco Bonaccorso**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **William Richards**, Department of Engineering, University of Cambridge, Cambridge, UK. **Tero Kulmala**, Department of Engineering, University of Cambridge, Cambridge, UK. **Weiping Wu**, Department of Engineering, University of Cambridge, Cambridge, UK. **Daping Chu**, Department of Engineering, University of Cambridge, Cambridge, UK. **Andrea C. Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

Graphene xylophone (436)

Hak Seong Kim, **Miri Seo**, **Sang Wook Lee**, Division of Quantum Phases & Devices, School of Physics, Konkuk University, Seoul, Republic of Korea

Size-homogeneous gold nanoparticle decorated on graphene via MeV electron beam irradiation (439)

Yooseok Kim, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea. **Wooseok Song**, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea. **Cheolho Jeon**, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea. **Sung Hwan Kim**, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea. **Seung Youb Lee**, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea. **Chong-Yun Park**, BK21 Physics Research Division, Sungkyunkwan University, Suwon, Republic of Korea.

Direct Writing of Width-tailored Graphene Nanoribbon on SiO2 via Focused Ion Beam-assisted Chemical Vapor Deposition (440)

Wooseok Song, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea. **Soo Youn Kim**, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea. **Yoo Seok Kim**, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea. **Sung Hwan Kim**, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea. **Cheolho Jeon**, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea. **Chong-Yun Park**, BK21 Physics Research Division, Sungkyunkwan University, Suwon 440-746, Republic of Korea.

Quantum Conductance Study On Doped Armchair Carbon Nanoribbons: First-Principles Calculations (449)

Eduardo Gracia-Espino, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Florentino López-Urías**, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Humberto Terrones**, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA. **Mauricio Terrones**, Department of Physics, The Pennsylvania

State University, Pennsylvania, USA; Research Center for Exotic Nanocarbons (JST), Shinshu University, Nagano, Japan.

High Frequency Coplanar Graphene Waveguides on Low-loss Dielectric Substrates (454)

Helgi Skulason, Dept. of Electrical and Computer Engineering, McGill University, Montréal, Canada. **Hoang Nguyen**, Poly-Grames Research Center, École Polytechnique de Montréal, Montréal, Canada. **Abdeladim Guermoune**, Département de Chimie, Université du Québec à Montréal, Montréal, Canada. **Mohamed Siaj**, Département de Chimie, Université du Québec à Montréal, Montréal, Canada. **Christophe Caloz**, Poly-Grames Research Center, École Polytechnique de Montréal, Montréal, Canada. **Thomas Szkopek**, Dept. of Electrical and Computer Engineering, McGill University, Montréal, Canada.

Graphene Nano-Electrodes for DNA Sequencing: an Ab initio Perspective (456)

Ralph H. Scheicher, Uppsala University, Uppsala, Sweden. **Jariyanee Prasongkit**, Uppsala University, Uppsala, Sweden. **Yuhui He**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Anton Grigoriev**, Uppsala University, Uppsala, Sweden. **Biswarup Pathak**, Uppsala University, Uppsala, Sweden. **Shibing Long**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **ZongLiang Huo**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Ming Liu**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Rajeev Ahuja**, Uppsala University, Uppsala, Sweden; Royal Institute of Technology (KTH), Stockholm, Sweden.

Graphene Logic Gates and Memories with Improved Current On/Off Ratio (463)

Roman Sordan, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Floriano Traversi**, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Fabrizio Nichele**, L-NESS Como, Politecnico di Milano, Polo di Como, Via Anzani 42, Como, Italy. **Eberhard Ulrich Stützel**, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany. **Adarsh Sagar**, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany. **Kannan Balasubramanian**, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany. **Marko Burghard**, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany. **Klaus Kern**, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany; Institute de Physique des Nanostructures, EPFL, Lausanne, Switzerland.

Energetics and Electronic Structures of Graphene Adsorbed on HfO2 Surfaces (469)

Katsumasa Kamiya, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan. **Naoto Umezawa**, Photocatalytic Materials Center, National Institute for Materials Science, Tsukuba, Japan. **Susumu Okada**, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan.

Wideband Tunable, High-power Ultrafast Lasers Mode-locked By Graphene (504)

Zhipei Sun, Department of Engineering, University of Cambridge, Cambridge, UK. **Haijuan Yu**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Daniel Popa**, Department of Engineering, University of Cambridge, Cambridge, UK. **Xuechun Lin**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Tawfique Hasan**, Department of Engineering, University of Cambridge, Cambridge, UK. **Felice Torrisi**, Department of Engineering, University of Cambridge, Cambridge, UK. **Ling Zhang**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Wei Hou**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Jinming Li**, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China. **Andrea Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

Selective Edge Functionalization of Graphene by Room Temperature Mild Plasma Treatment (510)

Toshiaki Kato, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Liying Jiao**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xinran Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Hailiang Wang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Xiaolin Li**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Li Zhang**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA. **Rikizo Hatakeyama**, Dept. of Electronic Engineering, Tohoku University, Sendai, Japan. **Hongjie Dai**, Dept. of Chemistry and Laboratory for Advanced Materials, Stanford University, Stanford, USA.

Fabrication of Graphene-based Electronic Devices by Selective Electrochemical Reduction in Air. (511)

Vincenzo Palermo, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Jeffrey M. Mativetsky**, ISIS - CNRS 7006, Université de Strasbourg, Strasbourg, France. **Andrea Liscio**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Emanuele Treossi**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Alberto Zanelli**, ISOF- Consiglio Nazionale delle Ricerche, Bologna, Italy. **Paolo Samorì**, ISIS - CNRS 7006, Université de Strasbourg, Strasbourg, France.

Epitaxial CVD Growth of Single-Layer Graphene over Metal Films Crystallized on Sapphire and MgO (521)

Hiroki Ago, Kyushu University, Fukuoka, Japan. **Yoshito Ito**, Kyushu University, Fukuoka, Japan. **Baoshan Hu**, Kyushu University, Fukuoka, Japan. **Yui Ogawa**, Kyushu University, Fukuoka, Japan. **Carlo Orofeo**, Kyushu University, Fukuoka, Japan. **Kenji Kawahara**, Kyushu University, Fukuoka, Japan. **Masaharu Tsuji**, Kyushu University, Fukuoka, Japan. **Ken-ichi Ikeda**, Kyushu University, Fukuoka, Japan. **Seigi Mizuno**, Kyushu University, Fukuoka, Japan. **Hiroki Hibino**, NTT Basic Research Laboratories, Kanagawa, Japan.

Multifunctional Composite Membranes Based on Graphene and Graphene Oxide Sheets (562)

Dimitrios Tasis, Department of Materials Science, University of Patras, Rio Patras, Greece. **Georgios Trakakis**, Institute of Chem. Engin. and High Temp. Chem. Processes, FORTH, Rio Patras, Greece. **Kostas Papagelis**, Department of Materials Science, University of Patras, Rio Patras, Greece. **Constantinos Galiotis**, Institute of Chem. Engin. and High Temp. Chem. Processes, FORTH, Rio Patras, Greece; Department of Materials Science, University of Patras, Rio Patras, Greece.

Synthesis and Characterization of PET/Expanded graphite Nanocomposites (579)

Sandra Paszkiewicz, West Pomeranian University of Technology, Szczecin, Poland. **Anna Szymczyk**, West Pomeranian University of Technology, Szczecin, Poland. **Jaroslav Mosnacek**, Polymer Insitute of Slovak Academy of Sciences, Bratislava, Slovakia. **Tiberio Ezquerra**, Instituto de Estructura de la Materia, CSIC, Madrid, Spain. **Michaela**

Soccio, Instituto de Estructura de la Materia, CSIC, Madrid, Spain. **Zbigniew Roslaniec**, West Pomeranian University of Technology, Szczecin, Poland.

Ab initio quantum transport in defective and chemically-modified graphene (621)

Jean-Christophe Charlier, University of Louvain, Institute of Condensed Matter and Nanosciences, Louvain-la-Neuve, Belgium.

Large-grain Graphene Synthesis and Graphene-based Nanoelectronics (627)

Chongwu Zhou, Department of Electrical Engineering, University of Southern California, Los Angeles, USA.

Spectroelectrochemistry of single and double layered graphene (641)

Martin Kalbac, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences, Prague, Czech Republic; Department of Electrical Engineering and Computer Science, MIT, Cambridge, Cambridge, USA. **Hootan Farhat**, Department of Electrical Engineering and Computer Science, MIT, Cambridge, Cambridge, USA. **Jing Kong**, Department of Materials Science and Engineering, MIT, Cambridge, Cambridge, USA; Department of Electrical Engineering and Computer Science, MIT, Cambridge, Cambridge, USA. **Otakar Frank**, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences, Prague, Czech Republic. **Pavel Janda**, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences, Prague, Czech Republic. **Ladislav Kavan**, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences, Prague, Czech Republic. **Mildred S. Dresselhaus**, Department of Electrical Engineering and Computer Science, MIT, Cambridge, Cambridge, USA; Department of Physics, MIT, Cambridge, Massachusetts 02139, USA, Cambridge, USA.

Plasmonic Enhanced Graphene Photodetector (655)

Tim Echtermeyer, Department of Engineering, University of Cambridge, Cambridge, UK. **Liam Britnell**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Silvia Milana**, Department of Engineering, University of Cambridge, Cambridge, UK. **Antonio Lombardo**, Department of Engineering, University of Cambridge, Cambridge, UK. **Roman Gorbachev,** School of Physics & Astronomy, University of Manchester, Manchester, UK. **Alexander Grigorenko**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Andre Geim**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Konstantin Novoselov**, School of Physics & Astronomy, University of Manchester, Manchester, UK. **Andrea Ferrari**, Department of Engineering, University of Cambridge, Cambridge, UK.

Graphene Coplanar Waveguides (656)

Shakil Awan, Nokia Research Centre Cambridge, Cambridge, UK; University of Cambridge, Cambridge, UK. **Antonio Lombardo**, University of Cambridge, Cambridge, UK. **Alan Colli**, Nokia Research Centre Cambridge, Cambridge, UK. **Andrea Fasoli**, University of Cambridge, Cambridge, UK. **Tim Echtermeyer**, University of Cambridge, Cambridge, UK. **Tero Kulmala**, University of Cambridge, Cambridge, UK. **Andrea Ferrari**, University of Cambridge, Cambridge, UK.

Ultrafast Non-Thermal Electron Dynamics In Single Layer Graphene (661)

Cristian Manzoni, IFN-CNR, Dipartimento di Fisica, Politecnico di Milano, Milan, Italy. **Daniele Brida**, IFN-CNR, Dipartimento di Fisica, Politecnico di Milano, Milan, Italy. **Giulio Cerullo**, IFN-CNR, Dipartimento di Fisica, Politecnico di Milano, Milan, Italy. **Rahul R. Nair**, Department of Physics and Astronomy, University of Manchester, Manchester, UK. **Andre Geim**, Department of Physics and Astronomy, University of Manchester, Manchester, UK. **Kostya Novoselov**, Department of Physics and Astronomy, University of Manchester, Manchester, UK. **Silvia Milana**, Engineering Department, University of Cambridge, Cambridge, UK. **Antonio Lombardo**, Engineering Department, University of Cambridge, Cambridge, UK. **Andrea C. Ferrari**, Engineering Department, University of Cambridge, Cambridge, UK.

Microwave Impedance Measurements of Graphene and Graphene Oxide (665)

Ling Hao, National Physical Laboratory, Teddington, UK. **John Gallop**, National Physical Laboratory, Teddington, UK. **Mattevi Mattevi**, Imperial College, London, UK. **Norbert Klein**, Imperial College, London, UK. **Lesley Cohen**, Imperial College, London, UK.

Spin-orbit coupling and weak localisation in graphene (704)

Edward McCann, Physics Department, Lancaster University, Lancaster, UK. **Volodya Falíko**, Physics Department, Lancaster University, Lancaster, UK.

Computational Challenges and Tools for Nanotubes (CCTN11)

Friday 15th July

8:00-8:15 Registration

8:15-8:30 Opening Remarks

Invited Talk (chair: James Elliott)

8:30-9:15 Towards Chiral Angle Control of SWNTs: Insights from a Hybrid MD/MC Modelling Approach (426)

Erik Neyts, University of Antwerp, Antwerp, Belgium. **Adri van Duin**, The Pennsylvania State University, State College, USA. **Annemie Bogaerts**, University of Antwerp, Antwerp, Belgium.

9:15-9:45 Charge Transfer between Metal Clusters and Growing Carbon Structures in Chirality-Controlled Single Walled Carbon Nanotube Growth (494)

Yuan Chen, Nanyang Technological University, Singapore, Singapore, Singapore. **Qiang Wang**, Nanyang Technological University, Singapore, Singapore, Singapore. **Shuo-Wang Yang**, Institute of High Performance Computing, Singapore, Singapore.

9:45-10:15 Mechanism of the Initial Stages of N-SWCNT Growth (150)

Toma Susi, NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Giorgio Lanzani**, Thule Institute and Department of Chemistry, University of Oulu, Oulu, Finland. **Albert Nasibulin**, NanoMaterials Group, Aalto University School of Science, Espoo, Finland. **Paola Ayala**, University of Vienna, Faculty of Physics, Vienna, Austria. **Tao Jiang**, CAMd, Technical University of Denmark, Kongens Lungby, Denmark. **Thomas Bligaard**, CAMd, Technical University of Denmark, Kongens Lungby, Denmark. **Kari Laasonen**, Department of Chemistry, Aalto University School of Science, Espoo, Finland. **Esko Kauppinen**, NanoMaterials Group, Aalto University School of Science, Espoo, Finland.

10:15-10:45 Coffee Break

Invited Talk (chair: James Elliott)

10:45-11:30 Numerical Modelling Of Metal-Catalyzed Growth Process Of Carbon Nanotube And Related Properties Of Catalytic Metal Nanoparticles (681)

Yasushi Shibuta, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan.

11:30-12:00 Rims Of Carbon Nanotubes: A Possible Path To Chiral Selective Growth? (67)

Heiko Dumlich, Freie Universität Berlin, 14195 Berlin, Berlin, Germany. **Stephanie Reich**, Freie Universität Berlin, 14195 Berlin, Berlin, Germany.

12:00-12:30 Poster Plus Talks

12:30-14:00 Lunch and Posters (Pembroke College) see pages 66-68

Invited Talk (chair: David Tomanek)

14:00-14:45 Electron Beam Knock-On Damage in Graphene and White Graphene (630)

Jani Kotakoski, University of Helsinki, Helsinki, Finland.

14:45-15:15 Understanding Carbon Nanotube Chirality through Molecular Dynamic and Kinetic Monte Carlo Simulations (83)

Feng Ding. ITC, Hong Kong Polytechnic University, Hong Kong, China.

15:15-15:45 Dynamic And Charge Doping Effects On The Phonon Dispersion Of Graphene And Metallic Carbon Nanotubes: A Theoretical Study (71)

Valentin Popov, Faculty of Physics, University of Sofia, Sofia, Bulgaria. **Philippe Lambin**, Research Center in Physics of Matter and Radiation, University of Namur, Namur, Belgium.

16:15-16:45 Modification Of The Electronic Structure In Single-walled Carbon Nanotubes With Aromatic Amines (284)

Urszula Dettlaff-Weglikowska, School of Electrical Engineering, Korea University, Seoul, South Korea. **Gunn Kim**, of Physics and Graphene Research Institute, Sejong University, Seoul, South Korea. **Lyuba Bulusheva**, Nikolaev Institute of Inorganic Chemistry, Novosybirsk, Russia. **Siegmar Roth**, School of Electrical Engineering, Korea University, Seoul, South Korea.

16:45-17:15 Carbon Nanotubes As Substrates For Molecular Switches (118)

Ermin Malic, Technical University Berlin, Berlin, Germany. **Andreas Knorr**, Technical University Berlin, Berlin, Germany.

17:15-19:00 Free Time

19:00-19:30 Welcome Drinks

19:30-22:00 Satellite Dinner

Saturday 16th July

8:00-8:30 Registration

Invited Talk (chair: David Tomanek)

8:30-9:15 The Intercalation and Diffusion of Lithium Ions in a Bundle of Carbon Nanotubes (CNTs) (86)

Bo Song, Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Shanghai, China. **Junwei Yang**, School of Physical Science and Technology, Sichuan University, Chengdu, China. **Jijun Zhao**, Dalian University of Technology, Dalian, China. **Haiping Fang**, Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Shanghai, China.

9:15-9:45 Modelling Solvent Interaction with Carbon-based Nanomaterials (539)

Patrick Kiley, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK. **Jan Gehrmann**, Department of Materials, University of Oxford, Oxford, UK. **Alan Windle**, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK. **James Elliott**, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK.

9:45-10:15 Monte Carlo Simulation of Water Nanosorption in Carbon Nanotubes (651)

Vlasis Mavrantzas, University of Patras and FORTH-ICE/HT, Patras, Greece. **Orestis Alexiadis**, University of Patras and FORTH-ICE/HT, Patras, Greece. **Elena Karahaliou**, University of Patras and FORTH-ICE/HT, Patras, Greece.

10:15-10:45 Coffee Break

Invited Talk (chair: James Elliott)

10:45-11:30 Investigation Of The Chirality Control Through Tight-Binding Computer Simulations. (682)

Hakim Amara, Laboratoire d'Etudes des Microstructures - ONERA-CNRS, Chatillon, France. **M. Diarra**, Laboratoire d'Etudes des Microstructures - ONERA-CNRS, Chatillon, France. **C. Bichara**, Centre Interdisciplinaire de Nanoscience de Marseille - CINaM - CNRS, Aix-Marseille, France. **F. Ducastelle**, Laboratoire d'Etudes des Microstructures - ONERA-CNRS, Chatillon, France.

11:30-12:00 Round Table Discussion: Computational Challenges and Chances for Nanotubes (moderated by James Elliott and David Tomanek)

12:00-12:30 Poster Plus talks

12:30-14:00 Lunch and Posters (Pembroke College) see pages 66-68

14:00-14:30 Poster Awards and Closing Remarks

Poster Sessions

Plasmon Generation By Optically Excited Excitons In Individual Single Wall Carbon Nanotubes (121)

Igor Bondarev, Department of Physics, North Carolina Central University, Durham, USA. **Todor Antonijevic**, Department of Physics, North Carolina Central University, Durham, USA.

Asymptotic Exchange Coupling Of Quasi-One-Dimensional Excitons In Carbon Nanotubes (122)

Igor Bondarev, Department of Physics, North Carolina Central University, Durham, USA.

Changing Chirality During SWNT Growth: A Reactive Molecular Dynamics / Monte Carlo Study (221)

Erik Neyts, University of Antwerp, Antwerp, Belgium. **Adri van Duin**, The Pennsylvania State University, State College, USA. **Annemie Bogaerts**, University of Antwerp, Antwerp, Belgium.

Simulated PECVD Growth Of Aligned Single Walled Carbon Nanotubes (222)

Erik Neyts, University of Antwerp, Antwerp, Belgium. **Adri van Duin**, The Pennsylvania State University, State College, USA. **Annemie Bogaerts**, University of Antwerp, Antwerp, Belgium.

Large Hyperfine Enhancement At Lattice Defects In Single-Walled Carbon Nanotubes (253)

Viktor Zolyomi, Physics Department, Lancaster University, Lancaster, UK; Research Institute for Solid State Physics and Optics of HAS, Budapest, Hungary. **Adam Gali**, Research Institute for Solid State Physics and Optics of HAS, Budapest, Hungary.

Magnetization in Carbon Nanotubes under Ion Irradiation (283)

Jacob Eapen. North Carolina State University, Raleigh, USA **Brahmananda Chakraborty**, North Carolina State University, Raleigh, USA **Pradip Das**, Bhabha Atomic Research Center, Mumbai, India. **D. K. Avasthi**, Bhabha Atomic Research Center, Mumbai, India. **D. S. Misra**, Indian Institute of Technology, Mumbai India. **S. Banerjee**.Inter–University Center for the Accelerators, New Delhi, India

Growth Mechanisms Of Single Wall Carbon Nananotube From Tight Binding Computer Simulations (306)

Christophe Bichara, CINaM / CNRS, Marseille, France. Mamadou Diarra, LEM / ONERA and CNRS, Chatillon, France. **Mamadou Diarra**, LEM / ONERA and CNRS, Chatillon, France. **Hakim Amara**, **François Ducastelle**, LEM / ONERA and CNRS, Chatillon, France.

Possible CVD Synthesis Region of Single-walled Carbon Nanotube in the Bachmann Diagram (369)

Shuhei Inoue, Energy and Environmental Engineering Division, Faculty of Engineering, Hiroshima, Higashi-Hiroshima, Japan. **Yukihiko Matsumura**, Energy and Environmental Engineering Division, Faculty of Engineering, Hiroshima, Higashi-Hiroshima, Japan. **Masamichi Kohno**, Department of Mechanical Engineering, Kyushu University, Fukuoka, Japan. **Takashi Tomie**, Department of Mechanical Science Engineering, Hiroshima University, Higashi-Hiroshima, Japan.

Molecular Orbital Calculations of Small Graphene-Like Species to Interpret Their Site-Dependent EELS (374)

Masanori Koshino, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan. **Hiroki Kurata**, Institute for Chemical Research, Kyoto University, Uji, Japan. **Seiji Isoda**, Institute for Chemical Research, Kyoto University, Uji, Japan. **Kazu Suenaga**, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan.

Birth-Death Markov Modeling for Single Molecule Counting using Single-Walled Carbon Nanotube Fluorescent Sensor Arrays (394)

Zachary Ulissi, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Jingqing Zhang**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Ardemis Boghossian**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Nigel Reuel**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Steven Shimizu**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Richard Braatz**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA. **Michael Strano**, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, USA.

Spin-Related Novel Optical Phenomena in Single-Walled Carbon Nanotubes (410)

Satoru Konabe, University of Tsukuba, Tsukuba, Japan. **Susumu Okada**, University of Tsukuba, Tsukuba, Japan.

Graphene Nano-Electrodes for DNA Sequencing: an Ab initio Perspective (461)

Ralph H. Scheicher, Uppsala University, Uppsala, Sweden. **Jariyanee Prasongkit**, Uppsala University, Uppsala, Sweden. **Yuhui He**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Anton Grigoriev**, Uppsala University, Uppsala, Sweden. Biswarup Pathak, Uppsala University, Uppsala, Sweden. **Shibing Long**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **ZongLiang Huo**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Ming Liu**, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. **Rajeev Ahuja**, Uppsala University, Uppsala, Sweden; Royal Institute of Technology (KTH), Stockholm, Sweden.

Effect of Variations in Carbon-Carbon Bond Lengths on the Optical Absorption Properties of Different Carbon Nanotubes (462)

Alireza Nojeh, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Saloome Motavas**, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Andre Ivanov**, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada.

Energetics and Electronic Structure of Encapsulated Single-Stranded DNA in Carbon Nanotubes (470)

Katsumasa Kamiya, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan. **Susumu Okada**, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; Japan Science and Technology Agency, CREST, Tokyo, Japan.

Fluid Flow Induced Voltage Generation In Single Wall Nanotubes -Simulation, Analysis And Application (486)

Duraivelan Palanisamy, National Institute of Technology, Tiruchirappalli, India. **Rajendra Patrikar**, Visvesvaraya National Institute of Technology, Nagpur, India.

Magnetic ordering in the Fluorinated Graphene (524)

Lyubov Bulusheva, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia. **Alexander Okotrub**, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia.

Carbon Nanomaterials as Catalysts for Hydrogen Desorption from Complex Metal Hydrides (542)

Ralph H. Scheicher, Uppsala University, Uppsala, Sweden. **Andreas Blomqvist**, Uppsala University, Uppsala, Sweden. **C. Moysés Araújo**, Uppsala University, Uppsala, Sweden. **Zhao Quian**, Uppsala University, Uppsala, Sweden; Royal Institute of Technology (KTH), Stockholm, Sweden. **Biswarup Pathak**, Uppsala University, Uppsala, Sweden. **Sa Li**, Virginia Commonwealth University, Richmond VA, USA. **Puru Jena**, Virginia Commonwealth University, Richmond VA, USA. **Rajeev Ahuja**, Uppsala University, Uppsala, Sweden; Royal Institute of Technology (KTH), Stockholm, Sweden.

Preparation of Iron Catalyst Nanoparticle for Single-Walled Carbon Nanotube Forest from Various Iron Compounds (543)

Shunsuke Sakurai, Nanotube Research Center, AIST, Tsukuba, Japan. **Hidekazu Nishino**, Nanotube Research Center, AIST, Tsukuba, Japan. **Don Futaba**, Nanotube Research Center, AIST, Tsukuba, Japan. **Satoshi Yasuda**, Nanotube Research Center, AIST, Tsukuba, Japan. **Takeo Yamada**, Nanotube Research Center, AIST, Tsukuba, Japan. **Alan Maigne**, Gatan, Inc., Tokyo, Japan. **Eiichi Nakamura**, The University of Tokyo, Tokyo, Japan. **Motoo Yumura**, Nanotube Research Center, AIST, Tsukuba, Japan. **Kenji Hata**, Nanotube Research Center, AIST, Tsukuba, Japan.

Directed Motion Of Carbon Nanotube In Water Driven By Non-uniform Electric Field (563)

Xu Zhen, **Hu Guohui**, **Zhou Zhewei**, Shanghai Institute of Applied Mathematics and Mechanics,Shanghai University, Shanghai, China

Synthesis, Characterization, and Theoretical Studies of Hybrid ZnO Nanoparticles and Nitrogen-Doped Carbon Nanotubes (565)

Eduardo Gracia-Espino, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Florentino López-Urías**, Advanced Materials Department, IPICYT, San Luis Potosí, Mexico. **Humberto Terrones**, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA. **Mauricio Terrones**, Department of Physics, The Pennsylvania State University, Pennsylvania, USA; Research Center for Exotic Nanocarbons (JST), Shinshu University, Nagano, Japan.

Modelling the Effects of High Exciton Density on the Optical Properties of Carbon Nanotubes (616)

Aleksey Andreev, **Matthew Brown**. Matthew Brown, Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, United Kingdom. Aleksey Andreev, Hitachi Cambridge Laboratory, Cavendish Laboratory, Cambridge, United Kingdom.

How do Carbon Atoms Assemble at the sp2-edge? (617)

Yuanyue Liu, Dept. of MEMS, Rice University, Houston, TX, USA. **Vasilii Artyukhov,** Dept. of MEMS, Rice University, Houston, TX, USA. **Kseniya Bets**, Dept. of MEMS, Rice University, Houston, TX, USA.

Ab initio simulations of carbon nanotube bundles used as gas sensors (622)

Alexandre Rocha, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil. **Rodrigo Amorim**, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil. **Adalberto Fazzio**, Insituto de Fisica, Universidade de São Paulo, São Paulo, Brazil. **Antônio J. R. da Silva**, Insituto de Fisica, Universidade de São Paulo, São Paulo, Brazil; Laboratorio Nacional de Luz Sincrotron, Campinas, Brazil.

Ab initio simulations of electronic transport of nanotube bundles used as gas sesors (623)

Alexandre Rocha, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil **Rodrigo Amorim**, Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo Andre, Brazil.

Adalberto Fazzio, Insituto de Fisica, Universidade de São Paulo, São Paulo, Brazil. **Antônio J. R. da Silva**, Insituto de Fisica, Universidade de São Paulo, São Paulo, Brazil; Laboratorio Nacional de Luz Sincrotron, Campinas, Brazil.

Electromechanical device based in Carbon Nanotubes (675)

Rodrigo Amorim, Universidade Federal do ABC - UFABC, Santo Andre, Brasil. **Antônio J. R. da Silva**, Universidade de São Paulo - USP, São Paulo, Brasil; Laboratorio Nacional de Luz Sinclotron, Campinas, Brasil. **Adalberto Fazzio**, Universidade de São Paulo - USP, São Paulo, Brasil. **Alexandre Rocha**, Universidade Federal do ABC - UFABC, Santo Andre, Brasil.

Metrology, Standardization and Industrial Quality of Graphene and Nanotubes (MSIGN11)

Friday 15th July

8:00-9:00 Registration

9:00-9:15 Opening remarks, Mildred Dresselhaus

Invited Talk (chair: Mildred Dresselhaus)

9:15-9:45 Using Raman spectroscopy and Electron Microscopy as metrological tools in the study of graphene and other carbon nanostructures (707)

Carlos Achete, Divisão de Metrologia de Materiais, INMETRO, Xerém, Duque de Caxias, Brazil.

9:45-10:00 How to Improve Interference Substrates for the Exploration of Graphene and Nanotubes (294)

Wolfgang Bacsa, CEMES - CNRS, University of Toulouse, Toulouse, France. **Victoria Tishkova,** CEMES - CNRS, University of Toulouse, Toulouse, France.

10:00-10:15 Raman Metrology Of Uniaxially Strained Graphene (361)

Otakar Frank, J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic; FORTH / ICE-HT, Patras, Greece. **Georgia Tsoukleri,** FORTH / ICE-HT, Patras, Greece. **John Parthenios,** FORTH / ICE-HT, Patras, Greece **Konstantinos Papagelis,** Materials Science Department, University of Patras, Patras, Greece. **Ibtsam Riaz,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Rashid Jalil,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Kostya S. Novoselov,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Martin Kalbac,** J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic. **Ladislav Kavan,** J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic. **Costas Galiotis,** FORTH / ICE-HT, Patras, Greece; Materials Science Department, University of Patras, Patras, Greece.

10:15-10:30 Resonant Raman Spectroscopy on $_{13}C$ Enriched Carbon Nanomaterials (37)

Sara Costa, Physics department of Federal University of

Minas Gerais, Belo Horizonte, Brazil. **Cristiano Fantini,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Ariete Righi,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Alicja Bachmatiuk,** Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Mark H. Rümmeli,** Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Riichiro Saito,** Physics department of Tohoku University, Sendai, Miyagi, Japan. **YuFeng Hao,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Carl Magnuson,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Rod Ruoff,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Marcos A. Pimenta,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil.

10:30-11:00 Coffee Break

Invited Talk (chair: Hiromichi Kataura)

11:00-11:30 Molar Extinction Coefficient of Single-Wall Carbon Nanotubes (631)

Tobias Hertel, Julius-Maximilians-Universität Würzburg, Wuerzburg, Germany. **Friedrich Schoeppler,** Julius-Maximilians-Universität Würzburg, Wuerzburg, Germany. **Christoph Mann,** Julius-Maximilians-Universität Würzburg, Wuerzburg, Germany. **Tilman Hain,** Julius-Maximilians-Universität Würzburg, Wuerzburg, Germany. **Felix Neubauer,** Julius-Maximilians-Universität Würzburg, Wuerzburg, Germany. **Giulia Privitera,** University of Cambridge, Electrical Engineering Division, Cambridge, UK. **Francesco Bonaccorso,** University of Cambridge, Electrical Engineering Division, Cambridge, UK. **Daping Chu,** University of Cambridge, Electrical Engineering Division, Cambridge, UK. **Andrea Ferrari,** University of Cambridge, Electrical Engineering Division, Cambridge, UK.

11:30-11:45 Gate-Induced Blueshift and Quenching of Photoluminescence in Suspended Single-Walled Carbon Nanotubes (139)

Yuichiro K. Kato, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Satoshi Yasukochi,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Tomoaki Murai,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shigeru Moritsubo,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Takashi Shimada,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi,** Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Shigeru Maruyama,** Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan.

11:45-12:00 Tip Enhanced Raman Scattering & Multiprobe Scanned Probe Imaging & NanoLithography of Carbon Nanotubes & Graphene (215)

Aaron Lewis, Hebrew University of Jerusalem, Dept. of Applied Physics, Jerusalem, Israel. **Tali Yeshua,** Hebrew University of Jerusalem, Dept. of Applied Physics, Jerusalem, Israel. **Yossi Bar-David,** Nanonics Imaging Ltd., Jerusalem, Israel. **Rimma Dekhter,** Nanonics Imaging Ltd., Jerusalem, Israel. **Oleg Zinoviev,** Nanonics Imaging Ltd., Jerusalem, Israel.

Invited Talk

12:00-12:30 Femtonewton Force Sensing and Optical Trapping of Nanotubes and Graphene (660)

Onofrio M. Marago', CNR-IPCF, Istituto per i Processi Chimico-Fisici, Messina, Italy.

Lunch & Poster Session (Pembroke College) *see pages 72-75*

Invited Talk (chair: Tobias Hertel)

15:00-15:30 Pristine, Empty Nanotubes Have Enhanced Electronic and Vibrational Properties (326)

Wim Wenseleers, Physics Department, University of Antwerp (CDE), Antwerp, Belgium. ***Sofie Cambré***, Physics Department, University of Antwerp (CDE), Antwerp, Belgium.

15:30-15:45 In situ NEXAFS study of Initial Growth Process of Carbon Nanotube by Surface Decomposition of SiC (214)

Takahiro Maruyama, Meijo University, Nagoya, Japan. **Satoshi Sakakibara,** Meijo University, Nagoya, Japan. **Hiroaki Itoh,** Meijo University, Nagoya, Japan. **Shigeya Naritsuka,** Meijo University, Nagoya, Japan. **Kenta Amemiya,** KEK PF, Tsukuba, Japan.

15:45-16:00 Carbon Nanoubes as substrates for Surface Enhanced Raman Spectroscopy (615)

Cristiano Fantini, Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Ariete Righi,** Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Marcos Pimenta,** Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Daniel Andrada,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Adelina Santos,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Clascidia Furtado,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Riichiro Saito,** Tohoku University, Sendai, Japan.

16:00-16:15 Metrology of single walled carbon nanotubes with engineered defects (127)

Martin Kalbac, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech R, Prague, Czech Republic **Hootan Farhat,** Department of Materials Science and Engineering, MIT, Cambridge, USA. **Mario Hoffman,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA. **Ladislav Kavan,** J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech R, Prague, Czech Republic. **Jing Kong,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA **Mildred Dresselhaus,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA; Department of Physics, MIT, Cambridge, USA.

16:15-16:30 In Situ Raman Spectroscopy Of Carbon Nanotubes During Growth By A Local Heating Technique (350)

Johan Ek Weis, EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland. **Oleg Nerushev,** EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland. **Eleanor Campbell,** EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland; Division of Quantum Phases and Devices, School of Physics, Konkuk University, Seoul, South Korea.

16:30-17:00 Coffee Break

Invited Talk (chair: Francesco Bonaccorso)

17:00-17:30 Evaluation of Affinity between Carbon Nanotubes and Organic Molecules (664)

Naotoshi Nakashima, Kyushu University, Fukuoka, Japan. **Tsuyohiko Fujigaya,** Kyushu University, Fukuoka, Japan **JongTae Yoo,** Kyushu University, Fukuoka, Japan. **Hiroaki Ozawa,** Kyushu University, Fukuoka, Japan.

17:30-17:45 Solvents for Nanotubes and Graphene - Why the Difference? (278)

Shane D Bergin, Dept. of Chemistry, Imperial College London, London, UK. **Hin Chun Yau,** Dept. of Chemistry, Imperial College London, London, UK. **Angela E Goode,** Dept of Materials, Imperial College London, London, UK. **Yenny Hernandez,** Max Planck Institute for Polymer Research, Mainz, Germany. **Jonathan N Coleman,** School of Physics & CRANN, Trinity College Dublin, Dublin, Ireland. **Milo SP Shaffer,** Dept. of Chemistry, Imperial College London, London, UK.

18:00-18:15 Micro-Dielectric Environment Effect on the Band Gaps of (n,m)Single-Walled Carbon Nanotubes (263)

Tsuyohiko Fugigawa,Kyushu University, Fukuoka, Japan. **Naotoshi Nakashima,** Kyushu University, Fukuoka, Japan. **Yasuhiko Hirana,** Kyushu University, Fukuoka, Japan. **Yasuhiko Tanak,** Kyushu University, Fukuoka, Japan. **Yasuro Niidome,** Kyushu University, Fukuoka, Japan.

18:00-18:15 High-Resolution Photocurrent Microscopy of Carbon Nanotube Film Photodiodes (217)

Michael Engel, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany; Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; DFG-Center for Functional Nanostructures, Karlsruhe Institute of Technology, Karlsruhe, Germany. **Mathias Steiner,** IBM Thomas J. Watson Research Center, Yorktown Heights, USA. **Phaedon Avouris,** IBM Thomas J. Watson Research Center, Yorktown Heights, USA. **Ralph Krupke,** Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany; DFG-Center for Functional Nanostructures, Karlsruhe Institute of Technology, Karlsruhe, Germany.

18:15-19:00 Free Time

19:00-19:30 Welcome Drinks

19:30-22:00 Satellite Dinner

Saturday 16th July

8:00-9:00 Registration

Invited Talk (chair: Erlon M. Ferreira)

9:00-9:30 Challenging in Characterizing Modified SWCNT (608)

Yadienka Martinez-Rubi, National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada.**Christopher Kingston,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Jingwen Guan,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Benoit Simard,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Jose Miguel Gonzalez,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Teresa Martinez,**National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada.

9:00-9:45 Dispersion and Separation of Single Walled Carbon Nanotubes by Polysaccharides (72)

Yuan Chen, Nanyang Technological University, Singapore, Singapore. **Mary Chan-Park,** Nanyang Technological University, Singapore, Singapore. **Liangyu Yan,** Nanyang Technological University, Singapore, Singapore. **Sara Hagh,** Nanyang Technological University, Singapore, Singapore. **Yin Poon,** Nanyang Technological University, Singapore, Singapore.

9:45-10:00 Doping Single-Walled Carbon Nanotubes With Nitrogen: A STM And STS Investigation (384)

Yann Tison, MPQ, Université Paris Diderot, Paris, France; LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Hong Lin,** MPQ, Université Paris Diderot, Paris, France; LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Jérôme Lagoute,** MPQ, Université Paris Diderot, Paris, France. **Vincent Repain,** MPQ, Université Paris Diderot, Paris, France. **Yann Girard,** MPQ, Université Paris Diderot, Paris, France. **Cyril Chacon,** MPQ, Université Paris Diderot, Paris, France. **Toma Susi,** NMG, Department of applied Physics, Aalto University, Espoo, Finland. **Esko Kauppinen,** NMG, Department of applied Physics, Aalto University, Espoo, Finland. **Annick Loiseau,** LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Sylvie Rousset,** MPQ, Université Paris Diderot, Paris, France.

10:00-10:15 Quantification of the Metallic/Semiconducting Ratio of Bulk SWCNT Samples by Cobalt Porphyrin Probe EPR Spectroscopy (259)

Sofie Cambré, Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Wim Wenseleers**, Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Etienne Goovaerts,** Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Daniel E. Resasco,** School of Chemical, Biological and Materials Engineering, University of Oklahoma, Oklahoma, USA.

10:15-10:30 Wall-Selective Probing Of Double-Walled Carbon Nanotubes Using Covalent Functionalization (600)

Delphine Bouilly, Université de Montréal, Montréal, Canada. **Janie Cabana,** Université de Montréal, Montréal, Canada. **François Meunier,** Université de Montréal, Montréal, Canada. **Maxime Desjardins-Carrière,** École Polytechnique de Montréal, Montréal, Canada. **François Lapointe,** Université de Montréal, Montréal, Canada. **Philippe Gagnon,** École Polytechnique de Montréal, Montréal, Canada. **Francis L.-Larouche,** Université de Montréal, Montréal, Canada. **Elyse Adam,** École Polytechnique de Montréal, Montréal, Canada. **Matthieu Paillet,** Université de Montréal, Montréal, Canada. **Richard Martel,** Université de Montréal, Montréal, Canada.

10:30-11:00 Coffee Break

Invited Talk (chair: Chris Kingston)

11:00-11:30 Engineering And Metrology Of Epitaxial Graphene (537)

Alexander Tzalenchuk, National Physical Laboratory, Teddington, UK. **T. J. B. M. Janssen,** National Physical

Laboratory, Teddington, UK. **Sergey Kubatkin,** Department of Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden. **Samuel Lara-Avila,** Department of Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden. **Rositza Yakimova,** Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, Sweden. **Sergey Kopylov,** Physics Department, Lancaster University, Lancaster, UK. **Vladimir Fal'ko,** Physics Department, Lancaster University, Lancaster, UK.

11:30-11:45 Direct Measurements Of Bending Stiffness And Rippling Phenomena In Free-Standing Carbon Nanotubes (348)

Henrik Jackman, Department of Physics and Electrical Engineering, Karlstad University, Karlstad, Sweden. **Pavel Krakhmalev,** Department of Mechanical and Materials Engineering, Karlstad University, Karlstad, Sweden. **Krister Svensson,** Department of Physics and Electrical Engineering, Karlstad University, Karlstad, Sweden.

11:45-12:00 STM Images of Carbon-Nanotube Quantum Dots: Seeing a Wigner Molecule of Correlated Electrons (680)

Massimo Rontani, CNR-NANO Research Center S3, Modena, Italy. **Andrea Secchi,** CNR-NANO Research Center S3, Modena, Italy; University of Modena, Modena, Italy.

12:00-12:15 Quantum Conductance in Carbon Nanotube Systems (197)

Mark Baxendale, Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä.

12:15-12:30 Combining Independent Measurements on Individual Carbon Nanotubes (629)

Andreas Johansson, Nanoscience Center, Department of Physics, University of Jyväskylä, Jyväskylä, Finland. **Jyri Rintala,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Prasantha Mudimela,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Olli Herranen,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Albert Nasibulin,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Hua Jiang,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Ermelinda Macoas,** Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Porutgal. **Mika Pettersson,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Esko Kauppinen,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Markus Ahlskog,** Nanoscience Center, Department of Physics, University of Jyväskylä, Jyväskylä, Finland.

Lunch & Poster Session 2 (Pembroke College) *see pages 72-75*

Invited Talk (chair: Debdulal Roy)

15:00-15:30 Graphene at High Pressure: Dimensionality Transition, Mechanical and Doping Effects Under Biaxial Strain (684)

Philippe Poncharal, Laboratoire de Physique de la Matière Condensée et Nanostructures, Lyon, France.

15:30-15:45 The Use of Ga+ Focused Ion Beam to Modify Graphene for Device Applications. (546)

Benjamin Fragneau, Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Braulio Archanjo,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Erlon Martins Ferreira,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Victor Victor Carozo,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Clara Almeida,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil **Ado Jorio,** Departamento de Fisica, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **Carlos Achete,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil; Programa de Engenharia Metalúrgica e de Materiais (PEMM), UFRJ, Rio de Janeiro, Brazil.

15:45-16:00 Novel Testing Method Of Carbon Nanotube-Array Actuators (321)

Sebastian Geiger, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Thorsten Mahrholz,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Johannes Riemenschneider,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Peter Wierach,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Michael Sinapius,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany.

16:00-16:15 In Situ TEM Investigations Of Electronic And Mechanical Properties Of Nanotube Architectures (219)

Dai-Ming Tang, National Institute for Materials Science, Tsukuba, Japan; Institute of Metal Research, Shenyang, China. **Li-Chang Yin,** Institute of Metal Research, Shenyang, China. **Cui-Lan Ren,** Institute of Metal Research, Shenyang, China. **Xianlong Wei,** National Institute for Materials Science, Tsukuba, Japan. **Ming-Sheng Wang,** National Institute for Materials Science, Tsukuba, Japan. **Hui-Ming Cheng,** Institute of Metal Research, Shenyang, China. **Yoshio Bando,** National Institute for Materials Science, Tsukuba, Japan. **Chang Liu,** Institute of Metal Research, Shenyang, China. **Dmitri Golberg,** National Institute for Materials Science, Tsukuba, Japan.

16:15-16:30 Optical Heterodyne Detection Visualizes the Spatial Resonance of Multilayer Graphene Cantilevers (508)

Yuichi Yuasa, Osaka Prefecture University, Sakai, Japan. **Atsushi Yoshinaka,** Osaka Prefecture University, Sakai, Japan. **Takayuki Arie,** Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan. **Seiji Akita,** Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan.

16:30-16:45 Collection-Mode Near-Field Nanoscopy of Individual CNTs (423)

Francesco Tantussi, CNISM, Pisa, Italy. **Francesco Fuso,** CNISM, Pisa, Italy; Dipartimento di Fisica, Universita di Pisa, Pisa, Italy. **Maria Allegrini,** CNISM, Pisa, Italy; Dipartimento di Fisica, Universita di Pisa, Pisa, Italy.

16:45-17:30 Panel and Round Table discussion: metrological tools for the industrialization of nanotubes and graphene

17:30-17:45 Closing remarks, **Mildred Dresselhaus**

Poster Sessions

An inner look into biscrolled CNT yarns: Studies on their different typical internal morphologies by microscopic analyses of their cross sections (33)

Xavier Lepro, Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Marcio Lima,** Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Raquel Ovalle Robles,** Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Neema Rawat,** Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Shaoli Fang,** Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA. **Ray Baughman,** Alan G. MacDiarmid NanoTech Institute at The University of Texas at Dallas, Richardson, TX, USA.

Resonant Raman Spectroscopy on 13C Enriched Carbon Nanomaterials (37)

Sara Costa, Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Cristiano Fantini,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Ariete Righi,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil. **Alicja Bachmatiuk,** Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Mark H. Rümmeli,** Leibniz Institute for Solid State and Materials Research, Dresden, Germany. **Riichiro Saito,** Physics department of Tohoku University, Sendai, Miyagi, Japan. **YuFeng Hao,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Carl Magnuson,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Rod Ruoff,** Dept of Mechanical Eng. and Texas Materials Institute, University of Texas, Austin, USA. **Marcos A. Pimenta,** Physics department of Federal University of Minas Gerais, Belo Horizonte, Brazil.

Dispersion and Separation of Single Walled Carbon Nanotubes by Polysaccharides (72)

Yuan Chen, Nanyang Technological University, Singapore, Singapore. **Mary Chan-Park,** Nanyang Technological University, Singapore, Singapore. **Liangyu Yan,** Nanyang Technological University, Singapore, Singapore. **Sara Hagh,** Nanyang Technological University, Singapore, Singapore. **Yin Poon,** Nanyang Technological University, Singapore, Singapore.

Element Mapping of Coated Multiwall Carbon Nanotubes (90)

Meiken Falke, Bruker Nano GmbH, Berlin, Germany. **Andi Käppel,** Bruker Nano GmbH, Berlin, Germany. **Mhairi Gass,** SuperSTEM Laboratory, STFC Daresbury, UK. **Sascha Herrmann,** Chemnitz University of Technology, Center for Microstechnologies, Germany. **Thomas Waechtler,** Chemnitz University of Technology, Center for Microstechnologies, Germany. **Stefan Schulz,** Chemnitz University of Technology, Center for Microstechnologies, Germany.

Metrology of single walled carbon nanotubes with engineered defects (127)

Martin Kalbac, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech R, Prague, Czech Republic. **Hootan Farhat,** Department of Materials Science and Engineering, MIT, Cambridge, USA. **Mario Hoffman,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA. **Ladislav Kavan,** J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech R, Prague, Czech Republic. **Jing Kong,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA. **Mildred Dresselhaus,** Department of Electrical Engineering and Computer Science, MIT, Cambridge, USA; Department of Physics, MIT, Cambridge, USA.

Gate-Induced Blueshift and Quenching of Photoluminescence in Suspended Single-Walled Carbon Nanotubes (139)

Yuichiro K. Kato, Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Satoshi Yasukochi,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Tomoaki Murai,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shigeru Moritsubo,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Takashi Shimada,** Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan. **Shohei Chiashi,** Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan. **Shigeru Maruyama,** Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan.

Characterization, Standardization and Industrial Quality of Multiwall Carbon Nanotubes (157)

John Lehman, Physical Measurement Laboratory, NIST, Boulder, USA. **Mauricio Terrones,** Dept. of Physics, The Pennsylvania State University, University Park, USA. **Elisabeth Mansfield,** Materials Measurement Laboratory, NIST USA, Boulder, USA. **Katherine Hurst,** National Renewable Energy Laboratory, Golden, USA. **Vincent Meunier,** Dept. of Physics, Rensselaer Polytechnic Institute, Troy, USA.

Optical response of single-walled carbon nanotubes in far-infrared region (177)

Soon-Kil Joung, Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan; National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Toshiya Okazaki,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan.

Length Analysis Of Single-Wall Carbon Nanotubes Cut By Sonication (196)

Shigekazu Ohmori, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Takeshi Saito,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Kazuki Ihara,** Green Innovation Research Laboratories, NEC Corporation, Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Yuki Asada,** Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Fumiyuki Nihey,** Green Innovation Research Laboratories, NEC Corporation, Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Motoo Yumura,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan. **Sumio Iijima,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan.

Quantum Conductance in Carbon Nanotube Systems (197)

Mark Baxendale, Queen Mary Univesity of London, London, UK.

Photocurrent Imaging Of Ultra Clean Suspended Carbon Nanotubes (199)

Maria Barkelid, Quantum Transport Group, Delft University of Technology, Delft, The Netherlands. **Gilles Buchs,** Quantum Transport Group, Delft University of Technology, Delft, The Netherlands. **Gary A. Steele,** Molecular Electronics and Devices, Delft University of Technology, Delft, The Netherlands. **Valery Zwiller,** Quantum Transport Group, Delft

University of Technology, Delft, The Netherlands.

In situ NEXAFS study of Initial Growth Process of Carbon Nanotube by Surface Decomposition of SiC (214)

Takahiro Maruyama, Meijo University, Nagoya, Japan. **Satoshi Sakakibara,** Meijo University, Nagoya, Japan. **Hiroaki Itoh,** Meijo University, Nagoya, Japan. **Shigeya Naritsuka,** Meijo University, Nagoya, Japan. **Kenta Amemiya,** KEK PF, Tsukuba, Japan.

Tip Enhanced Raman Scattering & Multiprobe Scanned Probe Imaging & NanoLithography of Carbon Nanotubes & Graphene (215)

Aaron Lewis, Hebrew University of Jerusalem, Dept. of Applied Physics, Jerusalem, Israel. **Tali Yeshua,** Hebrew University of Jerusalem, Dept. of Applied Physics, Jerusalem, Israel. **Yossi Bar-David,** Nanonics Imaging Ltd., Jerusalem, Israel. **Rimma Dekhter,** Nanonics Imaging Ltd., Jerusalem, Israel. **Oleg Zinoviev,** Nanonics Imaging Ltd., Jerusalem, Israel.

High-Resolution Photocurrent Microscopy of Carbon Nanotube Film Photodiodes (217)

Michael Engel, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany; Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; DFG-Center for Functional Nanostructures, Karlsruhe Institute of Technology, Karlsruhe, Germany. **Mathias Steiner,** IBM Thomas J. Watson Research Center, Yorktown Heights, USA. **Phaedon Avouris,** IBM Thomas J. Watson Research Center, Yorktown Heights, USA. **Ralph Krupke,** Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany; DFG-Center for Functional Nanostructures, Karlsruhe Institute of Technology, Karlsruhe, Germany.

In Situ TEM Investigations Of Electronic And Mechanical Properties Of Nanotube Architectures (219)

Dai-Ming Tang, National Institute for Materials Science, Tsukuba, Japan; Institute of Metal Research, Shenyang, China. **Li-Chang Yin,** Institute of Metal Research, Shenyang, China. **Cui-Lan Ren,** Institute of Metal Research, Shenyang, China. **Xianlong Wei,** National Institute for Materials Science, Tsukuba, Japan. **Ming-Sheng Wang,** National Institute for Materials Science, Tsukuba, Japan. **Hui-Ming Cheng,** Institute of Metal Research, Shenyang, China. **Yoshio Bando,** National Institute for Materials Science, Tsukuba, Japan. **Chang Liu,** Institute of Metal Research, Shenyang, China. **Dmitri Golberg,** National Institute for Materials Science, Tsukuba, Japan.

Quantification of the Metallic/Semiconducting Ratio of Bulk SWCNT Samples by Cobalt Porphyrin Probe EPR Spectroscopy (260)

Sofie Cambré, Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Wim Wenseleers,** Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Etienne Goovaerts,** Experimental Condensed Matter Physics Laboratory, University of Antwerp, Antwerp, Belgium. **Daniel E. Resasco,** School of Chemical, Biological and Materials Engineering, University of Oklahoma, Oklahoma, USA.

Micro-Dielectric Environment Effect on the Band Gaps of (n,m)Single-Walled Carbon Nanotubes (263)

Tsuyohiko Fugigawa, Kyushu University, Fukuoka, Japan. **Naotoshi Nakashima,** Kyushu University, Fukuoka, Japan. **Yasuhiko Hirana,** Kyushu University, Fukuoka, Japan. **Yasuhiko Tanak,** Kyushu University, Fukuoka, Japan. **Yasuro Niidome,** Kyushu University, Fukuoka, Japan.

Evaluation of Intrinsic Exciton Diffusion Length in Long Single-Walled Carbon Nanotubes (269)

Jianping Xie, Department of physics, Tokyo University of Science, Tokyo, Japan. **Inaba Takumi,** Department of physics, Tokyo University of Science, Tokyo, Japan. **Yoshikazu Homma,** Department of physics, Tokyo University of Science, Tokyo, Japan.

Solvents for Nanotubes and Graphene - Why the Difference? (278)

Shane D Bergin, Dept. of Chemistry, Imperial College London, London, UK. **Hin Chun Yau,** Dept. of Chemistry, Imperial College London, London, UK. **Angela E Goode,** Dept of Materials, Imperial College London, London, UK. **Yenny Hernandez,** Max Planck Institute for Polymer Research, Mainz, Germany. **Jonathan N Coleman,** School of Physics & CRANN, Trinity College Dublin, Dublin, Ireland. **Milo SP Shaffer,** Dept. of Chemistry, Imperial College London, London, UK.

How to Improve Interference Substrates for the Exploration of Graphene and Nanotubes (294)

Wolfgang Bacsa, CEMES - CNRS, University of Toulouse, Toulouse, France. **Victoria Tishkova,** CEMES - CNRS, University of Toulouse, Toulouse, France.

Interfaces in Carbon Nanotube FETs Studied by Kelvin Probe Force Microscopy (305)

Kosuke Suzuki, Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Yutaka Ohno,** Department of Quantum Engineering, Nagoya University, Nagoya, Japan. **Shigeru Kishimoto,** Department of Quantum Engineering, Nagoya University, Nagoya, Japan; Venture Business Laboratory, Nagoya University, Nagoya, Japan. **Takashi Mizutani,** Department of Quantum Engineering, Nagoya University, Nagoya, Japan.

Novel Testing Method Of Carbon Nanotube-Array Actuators (321)

Sebastian Geiger, German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Thorsten Mahrholz,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Johannes Riemenschneider,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Peter Wierach,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany. **Michael Sinapius,** German Aerospace Center, Institute of Composite Structure and Adaptive Systems, Braunschweig, Germany.

Imaging & Tracking Single-Walled Carbon Nanotube Dynamics in Rock-Like Porous Media (322)

Shannon Eichmann, Rice University, Houston, TX, USA.**Matteo Pasquali,** Rice University, Houston, TX, USA.

Direct Measurements Of Bending Stiffness And Rippling Phenomena In Free-Standing Carbon Nanotubes (348)

Henrik Jackman, Department of Physics and Electrical Engineering, Karlstad University, Karlstad, Sweden. **Pavel Krakhmalev,** Department of Mechanical and Materials Engineering, Karlstad University, Karlstad, Sweden. **Krister Svensson,** Department of Physics and Electrical Engineering, Karlstad University, Karlstad, Sweden.

In Situ Raman Spectroscopy Of Carbon Nanotubes During Growth By A Local Heating Technique (350)

Johan Ek Weis, EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland. **Oleg Nerushev,** EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland. **Eleanor Campbell,** EaStCHEM, School of Chemistry, Edinburgh University, Edinburgh, Scotland; Division of Quantum Phases and Devices, School of Physics, Konkuk University, Seoul, South Korea.

Effect of Laser Power on Raman Spectrum of Single-Walled Nanotubes (355)

Keith Paton, Thomas Swan & Co. Ltd, Consett, UK. **Sarah Byers,** Thomas Swan & Co. Ltd, Consett, UK. **Jennifer Mackay,** Thomas Swan & Co. Ltd, Consett, UK. **Marcelo Motta,** Thomas Swan & Co. Ltd, Consett, UK. **Harry Swan,** Thomas Swan & Co. Ltd, Consett, UK.

Raman Metrology Of Uniaxially Strained Graphene (361)

Otakar Frank, J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic; FORTH / ICE-HT, Patras, Greece. **Georgia Tsoukleri,** FORTH / ICE-HT, Patras, Greece. **John Parthenios,** FORTH / ICE-HT, Patras, Greece. **Konstantinos Papagelis,** Materials Science Department, University of Patras, Patras, Greece. **Ibtsam Riaz,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Rashid Jalil,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Kostya S. Novoselov,** School of Physics and Astronomy, University of Manchester, Manchester, UK. **Martin Kalbac,** J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic. **Ladislav Kavan,** J. Heyrovsky Institute of Physical Chemistry of the AS CR, v.v.i., Prague, Czech Republic. **Costas Galiotis,** FORTH / ICE-HT, Patras, Greece; Materials Science Department, University of Patras, Patras, Greece.

Doping Single-Walled Carbon Nanotubes With Nitrogen: A STM And STS Investigation (384)

Yann Tison, MPQ, Université Paris Diderot, Paris, France; LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Hong Lin,** MPQ, Université Paris Diderot, Paris, France; LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Jérôme Lagoute,** MPQ, Université Paris Diderot, Paris, France. **Vincent Repain,** MPQ, Université Paris Diderot, Paris, France. **Yann Girard,** MPQ, Université Paris Diderot, Paris, France. **Cyril Chacon,** MPQ, Université Paris Diderot, Paris, France. **Toma Susi,** NMG, Department of applied Physics, Aalto University, Espoo, Finland. **Esko Kauppinen,** NMG, Department of applied Physics, Aalto University, Espoo, Finland. **Annick Loiseau,** LEM, UMR 104, ONERA-CNRS, Chatillon, France. **Sylvie Rousset,** MPQ, Université Paris Diderot, Paris, France.

Anisotropic Optical Absorption Of Individual Carbon Nanotubes (385)

Mariusz Zdrojek, Warsaw University of Technology, Faculty of Physics, Warsaw, Poland. **Jaroslaw Judek,** Warsaw University of Technology, Faculty of Physics, Warsaw, Poland. **Michal Wasik,** Warsaw University of Technology, Faculty of Physics, Warsaw, Poland.

Collection-Mode Near-Field Nanoscopy of Individual CNTs (423)

Francesco Tantussi, CNISM, Pisa, Italy. **Francesco Fuso,** CNISM, Pisa, Italy; Dipartimento di Fisica, Universita di Pisa, Pisa, Italy. **Maria Allegrini,** CNISM, Pisa, Italy; Dipartimento di Fisica, Universita di Pisa, Pisa, Italy.

Effect of Variations in Carbon-Carbon Bond Lengths on the Optical Absorption Properties of Different Carbon Nanotubes (459)

Alireza Nojeh, Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Saloome Motavas,** Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada. **Andre Ivanov,** Department of Electrical & Computer Engineering, University of British Columbia, Vancouver, Canada.

Functionalized Carbon Nanotubes: Comparative Study Of Quantative Characterization Methods (468)

Anna Usoltseva, Nanocyl S.A., Sambreville, Belgium. **Julien Amadou,** Nanocyl S.A., Sambreville, Belgium.

Optical Heterodyne Detection Visualizes the Spatial Resonance of Multilayer Graphene Cantilevers (508)

Yuichi Yuasa, Osaka Prefecture University, Sakai, Japan **Atsushi Yoshinaka,** Osaka Prefecture University, Sakai, Japan. **Takayuki Arie,** Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan. **Seiji Akita,** Osaka Prefecture University, Sakai, Japan; CREST-JST, Kawaguchi, Japan.

The Use of Ga+ Focused Ion Beam to Modify Graphene for Device Applications. (546)

Benjamin Fragneau, Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Braulio Archanjo,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Erlon Martins Ferreira,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Victor Victor Carozo,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Clara Almeida,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Ado Jorio,** Departamento de Fisica, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **Carlos Achete,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil; Programa de Engenharia Metalúrgica e de Materiais (PEMM), UFRJ, Rio de Janeiro, Brazil.

Direct Measurement of the Bending Stiffness of Individual Vertically Aligned Carbon Nanofibers (VACNFs) (552)

Farzan Alavian Ghavanini, Chalmers University of Technology, Gothenburg, Sweden. **Henrik Jackman,** Karlstad University, Karlstad, Sweden. **Krister Svensson,** Karlstad University, Karlstad, Sweden. **Per Lundgren,** Chalmers University of Technology, Gothenburg, Sweden. **Peter Enoksson,** Chalmers University of Technology, Gothenburg, Sweden.

Reconstruction of Graphene Layers under Electric Current: Sample Preparation and Preliminary Results (566)

Braulio Archanjo, Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Jessica Campos-Delgado,** Materials Metrology Division, National Institute of Metrology (Inmetro), Duque de Caxias, Brazil. **Daniel Baptista,** Instituto de Física, UFRGS, Porto Alegre, Brazil. **Mauricio Terrones,** Center for Exotic Nanocarbons (JST), Shinshu University, Nagano City, Japan. **Carlos Achete,** Programa de Engenharia Metalúrgica e de Materiais (PEMM), UFRJ, Rio de Janeiro, Brazil.

Controlled Stacked Graphene Bilayer Structures: An Experimental Method (577)

Benjamin Fragneaud, Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Victor Carozo,** Divisão de

Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Braulio S. Archanjo,** Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Carlos A. Achete,** Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil; Programa de Engenharia Metalúrgica e de Materias Univ. Federal do Rio de Janeiro, Rio de Janeiro, Brasil.

Optical Microscopy and Micro-Manipulation Methods to Build Carbon Nanotube Electrical Nano-devices (578)

Benjamin Fragneaud, Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Victor Carozo,** Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Braulio S. Archanjo,** Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil. **Carlos A. Achete,** Divisão de Metrologia de Materiais, INMETRO, Duque de Caxias, Brasil; Programa de Engenharia Metalúrgica e de Materias Univ. Federal do Rio de Janeiro, Rio de Janeiro, Brasil.

Wall-Selective Probing Of Double-Walled Carbon Nanotubes Using Covalent Functionalization (600)

Delphine Bouilly, Université de Montréal, Montréal, Canada. **Janie Cabana,** Université de Montréal, Montréal, Canada. **François Meunier,** Université de Montréal, Montréal, Canada. **Maxime Desjardins-Carrière,** École Polytechnique de Montréal, Montréal, Canada. **François Lapointe,** Université de Montréal, Montréal, Canada. **Philippe Gagnon,** École Polytechnique de Montréal, Montréal, Canada. **Francis L.-Larouche,** Université de Montréal, Montréal, Canada. **Elyse Adam,** École Polytechnique de Montréal, Montréal, Canada. **Matthieu Paillet,** Université de Montréal, Montréal, Canada. **Richard Martel,** Université de Montréal, Montréal, Canada.

Challenging in Characterizing Modified SWCNT (608)

Yadienka Martinez-Rubi, National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Christopher Kingston,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Jingwen Guan,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Benoit Simard,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Jose Miguel Gonzalez,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada. **Teresa Martinez,** National Research Council, Institute for Molecular Sciences, 100 Sussex Drive, Ottawa, Canada.

Carbon Nanoubes as substrates for Surface Enhanced Raman Spectroscopy (615)

Cristiano Fantini, Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Ariete Righi,** Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Marcos Pimenta,** Universidade Federal de Minas Gerias, Belo Horizonte, Brazil. **Daniel Andrada,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Adelina Santos,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Clascidia Furtado,** Centro de desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil. **Riichiro Saito,** Tohoku University, Sendai, Japan.

Combining Independent Measurements on Individual Carbon Nanotubes (629)

Olli Herranen, Nanoscience Center, Department of Physics, University of Jyväskylä, Jyväskylä, Finland. **Jyri Rintala,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Prasantha Mudimela,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Andreas Johansson,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Albert Nasibulin,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Hua Jiang,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Ermelinda Macoas,** Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Porutgal. **Mika Pettersson,** Nanoscience Center, Department of Chemistry, University of Jyväskylä, Jyväskylä, Finland. **Esko Kauppinen,** Department of Applied Physics, Aalto University, Helsinki, Finland. **Markus Ahlskog,** Nanoscience Center, Department of Physics, University of Jyväskylä, Jyväskylä, Finland.

Isolated and shape defined graphene layers in a single litographic step (669)

Antonio Lombardo, University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK. **Silvia Milana,** University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK. **Andrea Ferrari,** University of Cambridge, Department of Engineering, Cambridge CB3 0FA, UK.

STM Images of Carbon-Nanotube Quantum Dots: Seeing a Wigner Molecule of Correlated Electrons (680)

Massimo Rontani, CNR-NANO Research Center S3, Modena, Italy. **Andrea Secchi,** CNR-NANO Research Center S3, Modena, Italy; University of Modena, Modena, Italy.

Measuring Chirality Distribution of NIST RM 8281 Long Fraction Carbon Nanotubes by Raman Spectroscopy (703)

E. H. Martins Ferreira, Divisão de Metrologia de Materiais, INMETRO, Rio de Janeiro, Brazil. **P. B. C. Pesce,** Departamento de Física, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. **C. A. Achete,** Divisão de Metrologia de Materiais, INMETRO, Rio de Janeiro, Brazil; Departamento de Engenharia Metalúrgica e de Materiais, Rio de Janeiro, Brazil. **A. Jorio,** Departamento de Física, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Nanocarbon Composites (CNT-NET)

Friday 15th July

8:00-8:50 Registration

8:50-9:00 Opening Remarks

Invited Talk

9:00-9:40 Polymers and Advanced Polymer Matrix Composites Reinforced with Aligned Carbon Nanotubes: Focus on Mechanical Properties

Brian Wardle, Massachusetts Institute of Technology Dept. of Aeronautics and Astronautics, USA

9:40-10:00 Carbon Nanotube Organisation in Polymer Nanocomposites (216)

Victoria Tishkova, CEMES - CNRS, University of Toulouse, Toulouse, France. Pascal Puech, CEMES - CNRS, University of Toulouse, Toulouse, France. **Emmanuel Flahaut**, CIRIMAT - CNRS, University of Toulouse, Toulouse, France. **Philippe Demont**, CIRIMAT - CNRS, University of Toulouse, Toulouse, France. **Wolfgang Bacsa**, CEMES - CNRS, University of Toulouse, Toulouse, France

10:00-10:20 Structure and Properties of Composites of Carbon Nanotube Fibres (441)

Juan J. Vilatela, Department of Materials Science, University of Cambridge, Cambridge, UK. **Rupesh Khare,** Department of Metallurgical Engineering and Materials Science, IIT Bombay, Mumbay, India. **Alan H. Windle,** Department of Materials

Science, University of Cambridge, Cambridge, UK.

10:20-10:50 Coffee Break

10:50-11:10 Dispersion And Composite Processing Of Polymer Coated Graphene (51)

Micah Green, Department of Chemical Engineering, Texas Tech University, Lubbock,TX, USA. **Sriya Das,** Department of Chemical Engineering, Texas Tech University, Lubbock,TX, USA. **Ahmed Wajid,** Department of Chemical Engineering, Texas Tech University, Lubbock,TX, USA. **John Shelburne,** Department of Chemical Engineering, Texas Tech University, Lubbock,TX, USA.

11:10-11:30 Highly Conductive, Long-Range SWNT Network Structure Made by Wet Shear Dispersion (405)

Kazufumi Kobashi, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Seisuke Ata,** Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Takeo Yamada,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Don Futaba,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Motoo Yumura,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan. **Kenji Hata,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; Technology Research Association for Single Wall Carbon Nanotubes (TASC), Tsukuba, Japan.

11:30-11:50 Carbon Fiber - Carbon Nanotube Hybrid (414)

Mukul Kumar, Meijo University, Nagoya, Japan. **Yoshinori Ando,** Meijo University, Nagoya, Japan.

11:50-12:10 High Shear Fluid Processor Assisted Dispersion of MWCNTs Within Epoxy and the Properties of the Resulting Composites (601)

Hilmi Yurdakul, Materials Science and Engineering, Anadolu University, Eskisehir, Turkey. **Atakan Dogan,** Materials Science and Engineering, Anadolu University, Eskisehir, Turkey. **Oya Durukan,** Materials Science and Engineering, Anadolu University, Eskisehir, Turkey. **Tugrul Seyhan,** Materials Science and Engineering, Anadolu University, Eskisehir, Turkey.

12:10-12:30 A Simulation Study on the Effects of Shear Flow and Nanotube Shape on the Microstructure and Electrical Properties of Carbon Nanotube/Polymer Composites (525)

Ali Erdem Eken, Institute of Optical and Microelectronic Materials, Hamburg Univ. of Technology, Hamburg, Germany. **Emilio J. Tozzi,** Dept. of Chemical Engineering and Materials Science, Univ. of California, Davis, Davis, USA. **Daniel J. Klingenberg,** Dept. of Chemical and Biological Engineering, University of Wisconsin, Madison, Madison, USA. **Wolfgang Bauhofer,** Institute of Optical and Microelectronic Materials, Hamburg Univ. of Technology, Hamburg, Germany.

12:30-13:45 Lunch

Invited Talk

13:45-14:25 Interfaces in Nanotube- and Graphene-Based Nanocomposites (688)

Robert Young, School of Materials, University of Manchester, Manchester, United Kingdom. **Lei Gong,** School of Materials, University of Manchester, Manchester, United Kingdom. **Ian A. Kinloch,** School of Materials, University of Manchester, Manchester, United Kingdom. **Libo Deng,** School of Materials, University of Manchester, Manchester, United Kingdom. **Konstantin S. Novoselov,** School of Physics and Astronomy, University of Manchester, Manchester, United Kingdom.

14:25-14:45 Role Of Nanotube-Nanotube Contacts In Modeling The Reinforcement Efficiency Of Carbon Nanotubes In Polymer Matrices. (390)

Michele Giordano, Institute for Composite and Biomedical Materials CNR, Portici, Italy. **Gabriella Faiella,** Institute for Composite and Biomedical Materials CNR, Portici, Italy. **Vincenza Antonucci,** Institute for Composite and Biomedical Materials CNR, Portici, Italy. **Alfonso Martone,** Institute for Composite and Biomedical Materials CNR, Portici, Italy. **Mauro Zarrelli,** Institute for Composite and Biomedical Materials CNR, Portici, Italy.

14:45-15:05 Impressive Fatigue Life and Fracture Toughness Improvements in Graphene-Based Epoxy Composites (536)

Daniel Bortz, Universidad de Alicante, Alicante, Spain.**Erika Garcia Heras,** Grupo Antolín Ingeniería, Burgos, Spain.**Ignacio Martin-Gullon,** Universidad de Alicante, Alicante, Spain.

15:05-15:25 Unidirectional MWCNT sheet/epoxy composites (517)

Yoku Inoue, Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Yoshitaka Minami,** Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Junichi Muramatsu,** Department of Electric and Electronic Engineering, Shizuoka University, Hamamatsu, Japan. **Naoki Morisawa,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Mikihisa Ishihara,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Yoshinobu Shimamura,** Department of Mechanical Engineering, Shizuoka University, Hamamatsu, Japan. **Morihiro Okada,** Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan. **Hidenori Mimura,** Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan.

15:25-15:45 Manufacturing And Properties Of High Weight-Fraction Aligned Polymer Nanocomposites (APNCs) (421)

Matthias Mecklenburg, Hamburg University of Technology / Institute of Polymers and Composites, Hamburg, Germany. **Daisuke Mizushima,** Tokyo Institute of Technology / Department of Mechanical Science and Engineering, Tokyo, Japan. **Naoto Ohtake,** Tokyo Institute of Technology / Department of Mechanical Science and Engineering, Tokyo, Japan. **Karl Schulte,** Tokyo Institute of Technology / Department of Mechanical Science and Engineering Tokyo Japan. **Wolfgang Bauhofer,** Hamburg University of Technology / Institute of Optical and Electrical Materials, Hamburg, Germany.

15:45-16:05 Coffee Break

16:05-16:25 Network Structure And Electrical Conduction In Carbon Nanotube Modified Polymers (43)

Cyrill Cattin, McGill University, Montreal, Canada. **Pascal**

Hubert, McGill University, Montreal, Canada.

16:25-16:45 Nanocarbon Composites For SHM (594)

Samuel Buschhorn, Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany. **Christian Viets,** Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany. **Karl Schulte,** Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany.

16:45-17:05 Multifunctional Free-Standing Single-Walled Carbon Nanotube Films (55)

Albert Nasibulin, Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Antti Kaskela,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Kimmo Mustonen,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Anton Anisimov,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Virginia Ruiz,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Samuli Kivistö,** Optoelectronics Research Centre, Tampere University of Technology, Tampere, Finland. **Marina Timmermans,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland. **Oleg Okhotnikov,** Optoelectronics Research Centre, Tampere University of Technology, Tampere, Finland. **David Brown,** Canatu Ltd., Helsinki, FInland. **Esko Kauppinen,** Department of Applied Physics and Centre for New Materials, Aalto University, Espoo, Finland.

17:05- 18:15 Poster Session

18:15- 19:00 Free Time

19:00- 19:30 Welcome Drinks

19:30- 22:00 Satellite Dinner

Saturday 16th July

Invited Talk

9:00-9:40 Translation of CNT in the Processing of Conductive Nanocomposites (694)

Philippe Poulin, Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **F. Grillard,** Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **C. Jaillet,** Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **C. Zakri,** Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **P. Miaudet,** Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **A. Derré,** Université de Bordeaux, Centre de Recherche Paul Pascal, CNRS, Pessaq, France. **A. Korzhenko,** ARKEMA, Groupement de Recherches de Lacq, Lacq, France. **P. Gaillard,** ARKEMA, Groupement de Recherches de Lacq, Lacq, France.

9:40-10:00 Carbon Nanofiber Bucky Paper Interleaves for Improved Interlaminar Fracture Resistance of CFRP Composites (420)

Jang Kyo Kim, Hong Kong University of Science and Technology, Hong Kong, Hong Kong. **Shafi ullah Khan**, Hong Kong University of Science and Technology, Hong Kong, Hong Kong.

10:00-10:20 Processing and Properties of Multiscale Carbon Fibre Reinforced Composite for Aerospace Application (180)

Anne-Lise Maillot, EADS Innovation Works - Composites Technologies, Munich, Germany. **Hans Luinge,** EADS Innovation Works - Composites Technologies, Munich, Germany. **Karl Schulte,** Technische Universität Hamburg-Harburg - Institute Polymer Composites, Hamburg, Germany.

10:20-10:50 Coffee Break

Invited talk

10:50-11:30 Localisation Of Carbon Nanotubes In Melt Mixed Thermoplastic Polymer Blends (708)

Petra Pötschke, Leibniz Institute of Polymer Research Dresden, Germany. **Andreas Göldel**, Leibniz Institute of Polymer Research Dresden, Germany. **Gaurav Kasaliwal**, Leibniz Institute of Polymer Research Dresden, Germany

11:30-11:50 Manufacturing Of Hybrid Epoxy/Glass Fibre/CNT Composites Under Electric Field (128)

Alexandros Skordos, Composites Centre, Cranfield University, Cranfield, UK. **Daniel Domingues,** Composites Centre, Cranfield University, Cranfield, UK. **Emmanuel Logakis,** Composites Centre, Cranfield University, Cranfield, UK.

11:50-12:10 An Alternative Method For Obtaining Good Dispersions And Orientation Of Mwcnts In An Aerospace Epoxy Resin (88)

Olga Martin, EPS. Universidad Carlos III de Madrid, Leganes(Madrid), Spain. **Claire Antonelli,** EPS. Universidad Carlos III de Madrid, Leganes(Madrid), Spain. **Jose Joaquin Atencia,** EPS. Universidad Carlos III de Madrid, Leganes(Madrid), Spain. **Mauricio Terrones,** The Pennsylvania State University&Shinshu University, PA 16802-6300&Nagano, USA&Japon. **Juan Baselga,** EPS. Universidad Carlos III de Madrid, Leganes(Madrid), Spain.

12:10-12:30 Mapping Local Microstructure And Mechanical Performance Around Carbon Nanotube Grafted Silica Fibres: Methodologies For Hierarchical Composites (281)

Hui Qian, The Composites Centre, Imperial College London, London, UK; Department of Chemistry, Imperial College London, London, UK; PaCE Group, Department of Chemical Engineering, Imperial College London, London, UK. **Gerhard Kalinka,** BAM Federal Institute for Materials Research and Testing, Berlin, Germany. **K. L. Andrew Chan,** Department of Chemical Engineering, Imperial College London, London, UK. **Sergei G. Kazarian,** Department of Chemical Engineering, Imperial College London, London, UK. **Emile S. Greenhalgh,** The Composites Centre, Imperial College London, London, UK. **Alexander Bismarck,** The Composites Centre, Imperial College London, London, UK; PaCE Group, Department of Chemical Engineering, Imperial College London, London, UK. **Milo S. P. Shaffer,** The Composites Centre, Imperial College London, London, UK; Department of Chemistry, Imperial College London, London, UK.

12:30-13:45 Lunch

13:45-14:05 Thermal, Electrical and Morphological Characterization of High Density Polyethylene/Carbon Black/ Multiwalled Carbon Nanotube Hybrid Composites (428)

Shailesh Bejwadi Shivashankar, J S S Research Foundation,,

Mysore, India. **Siddaramaiah ,** Sri Jayachamarajendra College of Engineering, Mysore, India. **Shanmukhaswamy M N,** Sri Jayachamarajendra College of Engineering, Mysore, India.

14:05-14:25 Influence of Manufacturing on Electrical Performances of Graphite Nanoplatelet Filled Polystyrene (69)

Henrik Persson, Chalmers University of Technology, Göteborg, Sweden. **Jérôme Rondin,** University of Strasbourg, Strasbourg, France. **Michel Bouquey,** University of Strasbourg, Strasbourg, France. **René Müller,** University of Strasbourg, Strasbourg, France. **Mikael Rigdahl,** Chalmers University of Technology, Göteborg, Sweden. **Rodney W. Rychwalski,** Chalmers University of Technology, Göteborg, Sweden.

14:30-14:50 The Effect Of Solvent On Mechanical And Electrical Properties Of Highly Conductive Multiwalled Carbon Nanotube/Silicone Rubber Composites (553)

Sang-Eui Lee, Samsung Advanced Institute of Technology, Yongin-si, South Korea. **Sangsoo Jee,** Samsung Advanced Institute of Technology, Yongin-si, South Korea. **Dongearn Kim,** Samsung Advanced Institute of Technology, Yongin-si, South Korea. **In-taek Han,** Samsung Advanced Institute of Technology, Yongin-si, South Korea. **Hajin Kim,** Samsung Advanced Institute of Technology, Yongin-si, South Korea.

14:50-15:10 Double-Walled Carbon Nanotube - Copper Nanocomposites with a Very Low Friction Coefficient (105)

Christophe Laurent, Toulouse University / CIRIMAT, Toulouse, France.

Christophe Guiderdoni, Toulouse University / CIRIMAT, Toulouse, France. **Alicia Weibel,** Toulouse University / CIRIMAT, Toulouse, France. **Alain Peigney,** Toulouse University / CIRIMAT, Toulouse, France. **Viviane Turq,** Toulouse University / CIRIMAT, Toulouse, France. **Claude Estournès,** Toulouse University / CIRIMAT, Toulouse, France.

15:10-15:30 Micro-scale 'Air-gap' Circuitry With Conducting Carbon Nanotube - Copper Composite (484)

Chandramouli Subramaniam, Technology Research Association for Single wall Carbon Nanotubes (TASC), Tsukuba, Ibaraki 305-8565, Japan. **Takeo Yamada,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8565, Japan. **Don N. Futaba,** National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8565, Japan. **Kenji Hata,** Technology Research Association for Single wall Carbon Nanotubes (TASC), Tsukuba, Ibaraki 305-8565, Japan; National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8565, Japan.

15:30-15:50 Polymer/Carbon Nanotube Composites For Liquid Sensing: Processing, Properties And Physical Model (238)

Tobias Villmow, Leibniz- Institut für Polymerforschung Dresden e.V., 01069 Dresden, Germany. **Sven Pegel,** Leibniz- Institut für Polymerforschung Dresden e.V., 01069 Dresden, Germany. **Andreas John,** Leibniz- Institut für Polymerforschung Dresden e.V., 01069 Dresden, Germany. **Petra Pötschke,** Leibniz- Institut für Polymerforschung Dresden e.V., 01069 Dresden, Germany. **Gert Heinrich,** Leibniz- Institut für Polymerforschung Dresden e.V., 01069 Dresden, Germany; Technische Universität Dresden, Institut für Werkstoffwissenschaft, 01069 Dresden, Germany.

15:50-16:10 Closing remarks

Poster Session

Photoelectric, Nonlinear optical (NLO) and Photorefractive (PR) Properties of CNT/Polymer Composites (25)

Rodney W. Rychwalski, Dept. Mater. Manuf. Tech. of Chalmers University of Technology, Gothenburg, Sweden. **Antonina D. Grishina,** A.N. Frumkin Inst. Phys. Chem. Electrochem. of the Russian. Ac. Sci., Moscow, Russia. **Anatoly W. Vannikov,** A.N. Frumkin Inst. Phys. Chem. Electrochem. of the Russian. Ac. Sci., Moscow, Russia.

A Novel Approach For Nanocarbon Composite Preparation (58)

Albert Nasibulin, Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Larisa Nasibulina,** Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Tatyana Koltsova,** Material Science Faculty, State Polytechnical University, Saint Petersburg, Russia. **Ilya Anoshkin,** Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland. **Alexandr Semencha,** Material Science Faculty, State Polytechnical University, Saint Petersburg, Russia. **Oleg Tolochko,** Material Science Faculty, State Polytechnical University, Saint Petersburg, Russia. **Esko Kauppinen,** Department of Applied Physics and Center for New Materials, Aalto University, Espoo, Finland.

Tailoring the Electrical Properties of Carbon Nanotube-Polymer Composites (183)

Yan Yan Shery Huang, Cavendish Laboratory, University of Cambridge, U.K. **Eugene Terentjev,** Cavendish Laboratory, University of Cambridge, U.K.

Microwave Assisted Surface Modification of MWCNT:In/SnO2 Composite Prepared by Soft Chemistry Route. (190)

S Rajesh, Karunya University, India. **J S,** Karunya University, India. **V A,** Karunya University, India. **M M,** Karunya University, India.

Controlled Growth of Vertically Aligned Carbon Nanotube Arrays and Their Application in Photovoltaic Cells (227)

Zhenzhong Yong, Suzhou Institute Of Nano-Tech And Nano-Biomics, Chinese Academy Of Sciencs, Suzhou, China. **Jiangtao Di,** Suzhou Institute Of Nano-Tech And Nano-Biomics, Chinese Academy Of Sciencs, Suzhou, China. **Geng Xu,** Suzhou Institute Of Nano-Tech And Nano-Biomics, Chinese Academy Of Sciencs, Suzhou, China. **Qingwen Li,** Suzhou Institute Of Nano-Tech And Nano-Biomics, Chinese Academy Of Sciencs, Suzhou, China.

Influence Of Ball Milling On The Properties Of Multiwalled Carbon Nanotubes And Their Polycarbonate Composites (236)

Petra Pötschke, Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Beate Krause,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Tobias Villmow,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Mandy Mende,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Gudrun Petzold,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany.

Localisation Of Carbon Nanotubes In Polyamide Blends With Non-Reactive And Reactive Rubber (237)

Petra Pötschke, Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Beate Krause,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Cecile Gibon,** BASF SE, Ludwigshafen, Germany. **Martin Weber,** BASF SE, Ludwigshafen, Germany. **Hye Jin Park,** BASF SE,

Ludwigshafen, Germany.

Freestanding, robust CNT papers and their composites for Supercapacitors (241)

Minghai Chen, Suzhou Institute of Nano-tech and Nano-bionics,Suzhou, China. **Yu Jin,** Suzhou Institute of Nano-tech and Nano-bionics,Suzhou, China. **Hongyuan Chen,** Suzhou Institute of Nano-tech and Nano-bionics,Suzhou, China. **Qingwen Li,** Suzhou Institute of Nano-tech and Nano-bionics,Suzhou, China.

Twin-Screw Extrusion of PP-MWCNT composites: Influence of feeding position (271)

Michael Thomas Müller, Leibniz Institute of Polymer Research Dresden, Dresden, Dresden, Germany. **Beate Krause,** Leibniz Institute of Polymer Research Dresden, Dresden, Dresden, Germany. **Bernd Kretzschmar,** Leibniz Institute of Polymer Research Dresden, Dresden, Dresden, Germany. **Petra Pötschke,** Leibniz Institute of Polymer Research Dresden, Dresden, Dresden, Germany.

Dispersability Of MWNTs In Polymer Solutions And Its Effect On The Electrical Conductivity Of Thin Films (272)

Ulrike Staudinger, Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany. **Beate Krause,** Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany. **Christine Goltzsche,** Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany. **Petra Pötschke,** Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany. **Gudrun Petzold,** Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany **Brigitte Voit,** Leibniz Institute of Polymer Research Dresden, Hohe Str. 6, 01069, Dresden, Germany.

The Role Of Matrix Viscosity On MWCNT Dispersion And Electrical Properties In Thermoplastic Composites (276)

Robert Socher, Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Michael T. Müller,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Beate Krause,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Regine Boldt,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany. **Petra Pötschke,** Leibniz Institute of Polymer Research Dresden, Dresden, Germany.

Raman Spectroscopy Studies Of Graphene Nanocomposites (289)

Lei Gong, Manchester Materials Science Centre, University of Manchester, Manchester, UK. **Robert Young,** Manchester Materials Science Centre, University of Manchester, Manchester, UK. **Ian Kinloch,** Manchester Materials Science Centre, University of Manchester, Manchester, UK. **Konstantin Novoselov,** Manchester Materials Science Centre, University of Manchester, Manchester, UK.

Development of Joining Method for Aluminum and CFRTP by CNT Reinforced Nano Anchors (307)

Daisuke Mizushima, Tokyo Institute of Technology, Tokyo, Japan. **Hiroki Kajiyama,** Tokyo Institute of Technology, Tokyo, Japan. **Takashi Sato,** NONK Ltd., Tokyo, Japan. **Naoto Ohtake,** Tokyo Institute of Technology, Tokyo, Japan.

Polyurethane-Carbon Nanotube Composite As Anticorrosion Coating Materials (311)

Mohammed Bahattab, Petrochemical Research Institute, KACST, Riyadh, Saudi Arabia. **Mohammed Alfaifi,** Petrochemical Research Institute, KACST, Riyadh, Saudi Arabia. **Ali Alduwaile,** Petrochemical Research Institute, KACST, Riyadh, Saudi Arabia. **Sultan Alburaidi,** Petrochemical Research Institute, KACST, Riyadh, Saudi Arabia.

Hybrid CNT/Silver Flakes - Epoxy Adhesives for Space Applications (316)

Christophe Laurent, Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France. **Fabien Marcq,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France. **Philippe Demont,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France. **Philippe Monfraix,** Thales Alenia Space, Toulouse, France. **Alain Peigney,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France.

Carbon Nanotube-Alumina Nanocomposites: Preparation, Densification and Properties (318)

Christophe Laurent, Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France.**Anne Kasperski,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France.**Alicia Weibel,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France. **Claude Estournès,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France. **Alain Peigney,** Université de Toulouse, Institut Carnot CIRIMAT, Toulouse, France.

Influence Of Thermo-Rheological History On Filler Network And Properties Of Polymer Composites: Carbon black, Carbon Nanotubes And Combinations (347)

Petra Pötschke, Leibniz-Institut für Polymerforschung Dresden e.V., D-01069 Dresden, Germany. **Ingo Alig,** Deutsches Kunststoff-Institut, D-64289 Darmstadt, Germany. **Dirk Lellinger,** Deutsches Kunststoff-Institut, D-64289 Darmstadt, Germany. **Tetyana Skipa,** Deutsches Kunststoff-Institut, D-64289 Darmstadt, Germany. **Konrad Hilarius,** Deutsches Kunststoff-Institut, D-64289 Darmstadt, Germany. **Tobias Villmow,** Leibniz-Institut für Polymerforschung Dresden e.V.,, D-01069 Dresden, Germany.

Epoxy / Nanocarbons composites as Smart materials (357)

Tamer Wafy, Manchester Materials Science Centre, University of Manchester, Manchester, UK. **Robert Young,** Manchester Materials Science Centre, University of Manchester, Manchester, UK.

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Toshiyuki Yasuhara, Tokyo Insitute of Technology, Tokyo, Japan. **Keisuke Ota,** Tokyo Insitute of Technology, Tokyo, Japan. **Naoto Ohtake,** Tokyo Insitute of Technology, Tokyo, Japan.

Polyaniline Nanocomposites With Graphene And Carbon Nanotubes For Bionical Applications (429)

Juan Carlos Garcia Gallegos, Alicante University, Alicante, Spain. **Ignacio Martin Gullon,** Alicante University, Alicante, Spain. **Juan A. Conesa,** Alicante University, Alicante, Spain. **Yadira Itzel Vega Cantu,** IPICYT, San Luis Potosi, Mexico. **Fernando Jaime Rodriguez Macias,** IPICYT, San Luis Potosi, Mexico. **Mauricio Terrones Maldonado,** The Pennsylvania State University, Philadelphia, United States.

Electrical Resistivity of Nano-graphite Reinforced High density polyethylene/Carbon Black Nanocomposites (442)

Shailesh Bejwadi Shivashankar, J S S Research Foundation, SJCE, Mysore, India. **Siddaramaiah**, Sri Jayachamarajendra College of Engineering, Mysore, India. **Shanmukhaswamy M N,** Sri Jayachamarajendra College of Engineering, Mysore, India.

Ultra-broadband Pulse Generation In Fiber Lasers With Double Wall Carbon Nanotube Saturable Absorbers (512)

Fengqiu Wang, Department of Engineering, University of Cambridge, CB3 0FA,, Cambridge, UK. **Tawfique Hasan,** Department of Engineering, University of Cambridge, CB3 0FA,, Cambridge, UK. **Zhipei Sun,** Department of Engineering, University of Cambridge, CB3 0FA,, Cambridge, UK. **Daniel Popa,** Department of Engineering, University of Cambridge, CB3 0FA,, Cambridge, UK. **Edmund Kelleher,** Department of Physics, Imperial College, SW7 2AZ, London, UK. **Zhe Jiang,** Department of Engineering, University of Cambridge, CB3 0FA, Cambridge, UK. **Francesco Bonaccorso,** Department of Engineering, University of Cambridge, CB3 0FA, Cambridge, UK. **Emmanuel Flahaut,** Université de Toulouse; UPS, INP; Institut Carnot Cirimat; F-31062, Toulouse, France; CNRS ; Institut Carnot Cirimat; F-31062, Toulouse, France. **James Taylor,** Department of Physics, Imperial College, SW7 2AZ, London, UK. **Andrea Ferrari,** Department of Engineering, University of Cambridge, CB3 0FA,, Cambridge, UK.

Strain Sensing Using Multiwall Carbon Nanotube / Epoxy Nanocomposite (556)

Christian Viets, Institute of Polymers and Composites, Technische Universität Hamburg-Harburg, Hamburg, Germany. ***Matthias Mecklenburg,*** Institute of Polymers and Composites, Technische Universität Hamburg-Harburg, Hamburg, Germany. **Daisuke Mizushima,** Tokyo Institute of Technology, Department of Mechanical Science and Engineering, Tokyo, Japan. **Naoto Ohtake,** Tokyo Institute of Technology, Department of Mechanical Science and Engineering, Tokyo, Japan. **Karl Schulte,** Institute of Polymers and Composites, Technische Universität Hamburg-Harburg, Hamburg, Germany.

High Shear Dispersion In Thermoset And Thermoplastic Matrices (588)

Samuel Buschhorn, Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany. **Gabriella Faiella,** Institute for Composite and Biomedical Materials, UNINA, Portici, Italy. **Carolin Schulz,** Institut fuer Optische und Elektronische Materialien, TUHH, Hamburg, Germany. **Michele Giordano,** Institute for Composite and Biomedical Materials, UNINA, Portici, Italy. **Karl Schulte,** Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany.

Imaging Of Carbon Nanotubes In Non-Conductive Matrices (592)

Samuel Buschhorn, Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany. **Wenjing Li,** Institut fuer Optische und Elektronische Materialien, TUHH, Hamburg, Germany. **Karl Schulte,** Institut fuer Kunststoffe und Verbundwerkstoffe, TUHH, Hamburg, Germany.

Preparation and Characterization of MWCNT Modified Thermoplastic Starch Composites (593)

Tugrul Seyhan, Materials Science and Engineering Department, Anadolu University, Eskisehir, Turkey. **Oya Durukan**, Materials Science and Engineering Department, Anadolu University, Eskisehir, Turkey. **Hilmi Yurdakul,** Materials Science and Engineering Department, Anadolu University, Eskisehir, Turkey. **Mustafa Oksuzoglu,** Materials Science and Engineering Department, Anadolu University, Eskisehir,, Turkey. **Hande Çelebi,** Chemical Engineering Department, Anadolu University, Eskisehir,, Turkey.

Molecular Dynamics Simulations of Thermal Boundary Conductance in Nanotube-polymer Composites (599)

James Elliott, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK. **Sho Hida,** Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan. **Shigeo Maruyama,** Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan. **Junichiro Shiomi,** Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan.

Interfacial Stress Transfer in Graphene Composites (671)

Arun Raju, School of Materials, University of Manchester, Manchester, UK. **Lei Gong,** School of Materials, University of Manchester, Manchester, UK. **Ibtsam Riaz,** School of Physics, University of Manchester, Manchester, UK. **Rashed Jalil,** School of Physics, University of Manchester, Manchester, UK. **Kostya Novoselov,** School of Physics, University of Manchester, Manchester, UK. **Robert Young,** School of Materials, University of Manchester, Manchester, UK. **Ian Kinloch,** School of Materials, University of Manchester, Manchester, UK.

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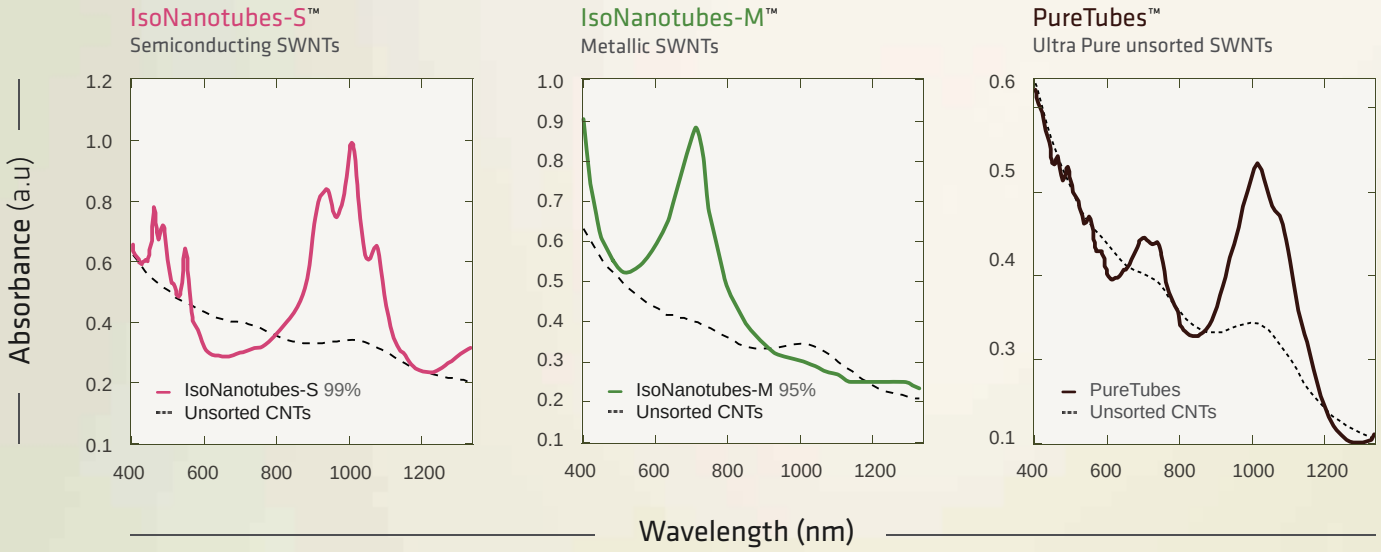

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