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Program - Symposium DD: De Novo Carbon Nanomaterials



2012 MRS Spring Meeting & Exhibit

April 9-13, 2012

San Francisco, California

2012-04-09

Symposium DD

[Show All Abstracts](#)

Symposium Organizers

- Cengiz S. Ozkan, University of California, Riverside
- Kang Wang, University of California, Los Angeles
- Markus J. Buehler, Massachusetts Institute of Technology
- Nicola Pugno, Politecnico di Torino

DD1: Theory, Modeling and Computation

- Chair: Markus Buehler
- Chair: Mark Hersam
- Monday AM, April 9, 2012
- Moscone West, Level 3, Room 3009

8:30 AM - *DD1.1

De Novo Predictions of Carbon Nanomaterials

[William A. Goddard](#)^{1 2}.

Show Abstract**9:00 AM - *DD1.2**

Influence of Grain Boundaries on Mechanical and Thermal Properties of Graphene

Vivek Shenoy¹.

Show Abstract**9:30 AM - *DD1.3**

Equilibrium at the Edge: Atomistic Mechanisms behind Graphene Synthesis

Vasilii I Artyukhov¹, Yuanyue Liu¹, Ksenia V Bets¹, Boris I Yakobson^{1 2 3}.

Show Abstract**10:00 AM -**

BREAK

Show Abstract**10:15 AM - DD1.4**

On the Unzipping Mechanisms of Carbon Nanotubes: Insights from Reactive Molecular Dynamics Simulations

Ricardo P dos Santos¹, Pedro A Autreto², Eric Perim², Gustavo Brunetto², Douglas S Galvao².

Hide Abstract

Graphene has been one of the hottest topics in materials science today. Due to its unique and unusual electronic properties graphene is been considered one of the most promising materials for the basis of a new nanoelectronics. However, in its pristine form graphene is a zero-gap semiconductor. This poses serious limitations to its use in some kind of electronic applications (some kind of transistors). In order to create non-zero graphene-like structures many approaches have been tried, such as, hydrogenation, fluorination and/or other chemical and physical functionalizations, with limited success. It has also been shown that making thin graphene stripes, the so-called graphene nanoribbons (GNRs), it is possible to create non-zero structures with some control of the process. But large scale and controlled GNR synthesis has been proved to be very difficult. Another possibility of producing GNR in a more controllable way is through cutting (unzipping) carbon nanotubes (CNTs). This has been achieved with different chemical [1] and physical [2] approaches. However, in spite of many experimental and theoretical studies on this problem, some important aspects remain to be fully understood. In this work we investigated the process of CNT fracture (unzipping) through molecular dynamics simulations using reactive force fields (ReaxFF), as implemented in the LAMMPS code. We considered multi-walled CNTs of different dimensions and chiralities and under mechanical stretching. Our results show that the unzipping mechanisms are highly dependent on CNT chirality. Well defined and distinct fracture patterns were observed for different chiralities. Zig-zag CNTs favor the creation of GNRs with well defined armchair edges, while armchair and chiral CNTs produce GNRs with less defined (defective) edges. The reasons why almost perfect linear CNT cuts are so frequently observed are also addressed. [1] D. V. Kosynkin et al., Nature v458, 872 (2009). [2] L. Jiao et al, Nature v458, 877 (2009).

10:30 AM - DD1.5

Electronic Structures of Geometrically Restricted Nanocarbons

Artem Baskin¹, Petr Kral¹.

Show Abstract**10:45 AM - DD1.6**

Redesign of Carbon Materials for Novel Storage, Mechanical and Optical Properties

Stefano Leoni¹, Igor Baburin¹, Daniele Selli¹.

Show Abstract

11:00 AM - DD1.7

In-situ Probing of Alloy Catalysts for Low-temperature Graphene Growth

Robert Stewart Weatherup¹, Bernhard C Bayer¹, Piran R Kidambi¹, Raoul Blume², Caterina Ducati³, Carsten Baehtz⁴, Robert Schloegl⁵, Stephan Hofmann¹.

Show Abstract

11:15 AM - DD1.8

Potassium Influence on the Hydrogen Adsorption in Graphene

Jorge Alejandro Tapia¹, Cesar Cab¹, Gabriel Canto².

Show Abstract

11:30 AM - *DD1.9

Functional Nanocomposite Architectures Tailored from B- or N-Doped Carbon Nanomaterials

Sang Ouk Kim¹.

Show Abstract

DD2: Growth, Defects, Mechanisms I

- Chair: Nicola Pugno
- Chair: Cengiz Ozkan
- Monday PM, April 9, 2012
- Moscone West, Level 3, Room 3009

1:45 PM - *DD2.1

From Carbynes and Nanotubes to GraphEnes, GraphAnes, and sp²-nanofoams

Boris I. Yakobson¹.

Show Abstract

2:15 PM - DD2.2

In-situ, High Pressure XPS and XRD Study of Graphene Growth under Realistic CVD Conditions

Piran Ravichandran Kidambi¹, Bernhard C Bayer¹, Robert S Weatherup¹, Raoul Blume², Carsten Baehtz³, Caterina Ducati⁴, Robert Schloegl², Stephan Hofmann¹.

Show Abstract

2:30 PM - DD2.3

Sputter Oriented Nickel and Defect Inhibitors in Graphene

Eugene Zakar¹, Kevin Hauri¹, Richard Fu¹.

Show Abstract

2:45 PM - DD2.4

Understanding Graphene Growth on Copper Substrates

Haider I Rasool^{1 2 3}, James K Gimzewski^{1 2 3}.

Show Abstract

3:00 PM -

BREAK

Show Abstract

3:30 PM - *DD2.5

Functional Inks Based on Monodisperse Carbon Nanomaterials

Mark C Hersam¹.

Show Abstract

4:00 PM - DD2.6

Formation of Graphene Lateral Heterojunctions Using Patterned Regrowth

Mark Levendordf¹, Lola Brown¹, Robin W Havener², Jiwoong Park¹.

Show Abstract

4:15 PM - DD2.7

Transfer-free Growth of Few-layer Graphene by Self-assembled Monolayers

Hyeon Jin Shin¹, Won Mook Choi¹, Seon-Mi Yoon¹, Yun Sung Woo¹, Young Hee Lee², Jae-Young Choi¹.

Show Abstract

4:30 PM - DD2.8

Barrier-guided Chemical Vapor Deposition: A New Approach for the Scalable, Bottom-up Synthesis of Rationally-patterned, Micro- and Nanostructured Graphene Materials

Nathaniel S Safron¹, Myungwoong Kim¹, Padma Gopalan¹, Michael Scott Arnold¹.

Show Abstract

4:45 PM - DD2.9

Direct Layer-by-Layer Growth of Graphene on Co₃O₄(111) at 1000 K by Molecular Beam Epitaxy

Mi Zhou¹, Frank L Pasquale¹, Peter A Dowben², Alex Boosalis², Mathias Schubert², Jeffry A Kelber¹.

Show Abstract

DD3/EE1: Joint Session: Plenary Session: Recent/Advances in Graphene

- Chair: Kazuhiko Matsumoto
- Chair: Tomas Palacios
- Chair: Cengiz Ozkan
- Monday PM, April 9, 2012
- Moscone West, Level 3, Room 3008

1:30 PM - *DD3.1/EE1.1

Graphene-based Electronics and Optoelectronics

Phaedon Avouris¹.

Show Abstract

2:15 PM - *DD3.2/EE1.2

Physics of Dirac Electron in Graphene

[Tsuneya Ando¹](#).**Show Abstract****3:00 PM -**

BREAK

Show Abstract**3:30 PM - *DD3.3/EE1.3**

Manifest of Electron Interactions in High Quality Graphene on Hexa Boron Nitride

[Philip Kim¹](#).**Show Abstract****4:15 PM - *DD3.4/EE1.4**

Functionalized Graphene and Its Use in Applications

[I. Aksay¹](#).**Show Abstract****2012-04-10****Symposium DD****Show All Abstracts****Symposium Organizers**

- Cengiz S. Ozkan, University of California, Riverside
- Kang Wang, University of California, Los Angeles
- Markus J. Buehler, Massachusetts Institute of Technology
- Nicola Pugno, Politecnico di Torino

DD4: Mechanical Properties

- Chair: Kang Wang
- Chair: Goknur Cambaz Buke
- Tuesday AM, April 10, 2012
- Moscone West, Level 3, Room 3009

8:00 AM - *DD4.1

Deformation Mechanism in Vertically-aligned Carbon Nanotube Forests (VACNT) as Revealed by In-situ Uniaxial Compression Experiments and Modeling

[Julia Rosolovsky Greer¹](#).

Show Abstract**8:30 AM - DD4.2**

The Effect of Substrate on High Quality Chemical Vapor Deposited Graphene

Will Gannett^{1,2}, William Regan^{1,2}, Kenji Watanabe³, Takashi Taniguchi³, Michael Crommie^{1,2}, Alex Zettl^{1,2}.

Show Abstract**8:45 AM - DD4.3**

Dependence of Graphene Grain Sizes and Orientations on CVD Growth Conditions

Ayaka Yamada¹, Kenjiro Hayashi¹, Katsunori Yagi¹, Naoki Harada¹, Shintaro Sato¹, Naoki Yokoyama¹.

Show Abstract**9:00 AM - DD4.4**

Multiscale Modelling of Elastic Response of Carbon Nanotube Forests to Aerodynamic Stresses

Ilenia Battiato¹, Daniel M Tartakovsky², Prabhakar R Bandaru².

Show Abstract**9:15 AM - DD4.5**

Uncovering Chaotic Behavior in Super-GHz Nano-Oscillators Based on Carbon Nanotubes

Prathamesh Mahesh Shenai¹, Yang Zhao¹.

Show Abstract**9:30 AM - DD4.6**

Wide-range Mechanical Tunability of Graphene-based Materials

Jeremy T Robinson¹, Maxim Zhalalutdinov¹, Chad Junkermeier¹, Jim Culbertson¹, Thomas Reinecke¹, Rory Stine¹, Paul Sheehan¹, Brian Houston¹, Eric Snow¹.

Show Abstract**9:45 AM - DD4.7**

Mechanical Deformation and Failure of Carbon Nanofibers with Different Functional Groups

Jiangnan Zhang¹, Phillip Loya¹, Cheng Peng¹, Valery Khabashesku², Jun Lou¹.

Show Abstract**10:00 AM -**

BREAK

Show Abstract**DD5: Electrical Properties I**

- Chair: Julia Greer
- Chair: Cengiz Ozkan
- Tuesday AM, April 10, 2012
- Moscone West, Level 3, Room 3009

10:30 AM - *DD5.1

Structured Graphene

Walter De Heer¹.**Show Abstract****11:00 AM - *DD5.2**

Graphene-based Electronics for RF Communications and Sensing

Tomas Palacios¹.**Show Abstract****11:30 AM - DD5.3**

Epitaxial Graphene for Spin Transport

Bruno Dlubak^{1 2 6}, Pierre Seneor^{1 2}, Abdelmadjid Anane^{1 2}, Marie-Blandine Martin^{1 2}, Cyrile Deranlot^{1 2}, Bernard Servet³, Stephane Xavier³, Richard Mattana^{1 2}, Henri Jaffres^{1 2}, Michael Sprinkle⁴, Claire Berger^{4 5}, Walter De Heer⁴, Frederic Petroff^{1 2}, Albert Fert^{1 2}.**Show Abstract****11:45 AM - DD5.4**

Optoelectronic Phenomena in Pristine-edge Graphene Nanoribbons

Charina L. Choi¹, Guosong Hong¹, Liying Jiao¹, Hongjie Dai¹.**Show Abstract****DD6: Analytical Characterization**

- Chair: Riichiro Saito
- Chair: Mihri Ozkan
- Tuesday PM, April 10, 2012
- Moscone West, Level 3, Room 3009

1:30 PM - *DD6.1

Raman Spectroscopy of Double and Triple Layer Graphene

Riichiro Saito¹.**Show Abstract****2:00 PM - DD6.2**

In situ Low-energy Electron Microscopy Studies of Graphene Growth on Pd(111)

Hoi Sing Mok¹, Yuya Murata¹, Shu Nie², Norman Bartelt², Kevin F McCarty², Suneel Kodambaka¹.**Show Abstract****2:15 PM - DD6.3**

Atomic-resolution Characterization of Graphene-based Nanoporous Carbon

Junjie Guo^{1 2}, Cristian I Contescu¹, Nidia C Gallego¹, James R Morris^{1 2}, Gerd Duscher^{1 2}, Stephen J Pennycook¹, Matthew F Chisholm¹.**Show Abstract**

2:30 PM - DD6.4

Atomic Bonding Configurations of Boron and Nitrogen Dopants in Graphene

Matthew Chisholm¹, Oscar D Restrepo², Wolfgang Windl², Gerd Duscher³ ¹, Tissaphern Mirfakhrai⁴, Hongjie Dai⁴.

Show Abstract

2:45 PM - *DD6.5

Exploring the Synthesis and Applications of Graphene

Sergey Dubin¹, Maher El-Kady¹, Veronica Strong¹, Jaime Torres¹, Jonathan Wassei¹, Richard Kaner¹ ².

Show Abstract

3:15 PM -

BREAK

Show Abstract

3:30 PM - DD6.6

Atomic Scale Structure-property Correlation in Monolayer Graphene

Wu Zhou² ¹, Jaekwang Lee² ¹, Micah P Prange² ¹, Mark P Oxley² ¹, Jagjit Nanda¹, Sokrates T Pantelides² ¹, Stephen J Pennycook¹ ², Juan-Carlos Idrobo¹ ².

Show Abstract

3:45 PM - DD6.7

Tip Enhanced Raman Spectroscopy of Graphene on Silicon/Silicon Oxide Substrates

Hesham Taha¹, Rimma Dekhter¹, Yossi Bar-David¹, Galina Fish¹, Aaron Lewis².

Show Abstract

4:00 PM - DD6.8

Imaging and Simulations of Atomic-scale Ripples in Graphene Membrane

Wei L Wang¹, Sagas Handcars¹, Wei Yi¹, David Bell¹, Robert Westervelt¹, Efthimios Kaxiras¹.

Show Abstract

4:15 PM - DD6.9

Origins of the Frictional Characteristics of Fluorinated Graphene

Robert W Carpick¹, Qunyang Li¹, Xin Liu¹, Jeremy T Robison², Paul E Sheehan².

Show Abstract

4:30 PM - DD6.10

Atomic-scale Structure Characterization of Carbon Nanomaterials by Total X-Ray Diffraction and Computer Simulations

Valeri Petkov¹.

Show Abstract

4:45 PM - DD6.11

TEM Imaging of Stacking Order and Twist Angle in Bilayer CVD Graphene

[Lola Brown](#)¹, Robert Hovden², Pinshane Huang², Michal Wojcik¹, David A Muller², Jiwoong Park¹.

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2012-04-11

Symposium DD

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Symposium Organizers

- Cengiz S. Ozkan, University of California, Riverside
- Kang Wang, University of California, Los Angeles
- Markus J. Buehler, Massachusetts Institute of Technology
- Nicola Pugno, Politecnico di Torino

DD7: Hierarchical Nanostructures and Nanocomposites I

- Chair: Riichiro Saito
- Chair: Mihri Ozkan
- Wednesday AM, April 11, 2012
- Moscone West, Level 3, Room 3009

8:00 AM - *DD7.1

Graphene-based and Graphene-derived Materials

Rodney Ruoff¹, [Li Li Zhang](#)¹.

Show Abstract

8:30 AM - DD7.2

Structure-thermal Transport Processes in Three-dimensional Few-layer Graphene / Ultra-thin Graphite Foam

[Michael Thompson Pettes](#)¹, Hengxing Ji¹, Rodney S Ruoff¹ 2, Li Shi¹ 2.

Show Abstract

8:45 AM - DD7.3

Synchronous Synthesis of Graphene-carbon Nanotube Hierarchical Nanostructures

[Maziar Ghazinejad](#)¹ 2, Shirui Guo³, Jennifer Reiber Kyle², Mihrimah Ozkan², Cengiz S Ozkan¹.

Show Abstract

9:00 AM - DD7.4

Formation of 2D and 3D Graphene Nanoarchitectures

[Goknur Cambaz Buke](#)¹, Gleb Yushin², Vadym Mochalin³, Yury Gogotsi³.

Show Abstract

9:15 AM - DD7.5

Growth of Pillared-graphene Architectures on SiC for Efficient Thermal Transportation

John Boeckl¹, Weijie Lu¹, Sabyasachi Ganguli², Ajit K Roy².

Show Abstract

9:30 AM - DD7.6

Tunable Mechanical Properties of Graphene Oxide through Interlayer Hydrogen Bond Distribution

Markus J Buehler¹, Steven Cranford¹, Owen Compton², Karl Putz², Cate Brinson², SonBinh Nguyen².

Show Abstract

9:45 AM - DD7.7

Scaling Model of Catalytic CVD of Carbon Nanotubes and Graphene

John Robertson¹.

Show Abstract

10:00 AM -

BREAK

Show Abstract

DD8: Growth, Defects, Mechanisms II

- Chair: Mihri Ozkan
- Chair: Prabhakar Bandaru
- Wednesday AM, April 11, 2012
- Moscone West, Level 3, Room 3009

10:30 AM - *DD8.1

Lateral and Vertical Junctions in CVD Graphene

Jiwoong Park^{1 2}.

Show Abstract

11:00 AM - DD8.2

Bulk Preparation of Holey Graphenes

Yi Lin¹, Kent A Watson¹, John W Connell².

Show Abstract

11:15 AM - DD8.3

Thermo-chemical Metastability of Multilayer Epitaxial Graphene Oxide: Experiments and Density Functional Theory Calculations

Angelo Bongiorno¹, Si Zhou¹, Suenne Kim², Yike Hu², Claire Berger², Walt de Heer², Elisa Riedo².

Show Abstract

11:30 AM - DD8.4

Macroscopic Graphene Growth with Atomic-layer Thickness Control on Epitaxial Metal Thin Films

Peter Sutter¹, Eli Sutter¹.

Show Abstract

11:45 AM - DD8.5

Nucleation and Growth Kinetics of Graphene Layers on the Surface of Metallic Melts

Shaahin Amini¹, Reza Abbaschian¹.

Show Abstract

DD9: Electrical Properties II

- Chair: Colin Nuckolls
- Chair: Vikas Berry
- Wednesday PM, April 11, 2012
- Moscone West, Level 3, Room 3009

1:30 PM - *DD9.1

Electronic Properties of Chemically Derived Graphene

Klaus Kern^{1 2}.

Show Abstract

2:00 PM - DD9.2

Synthesis of Three Dimensional Carbon Nanostructure Foams for Supercapacitors and Batteries

Wei Wang^{1 3}, Shirui Guo², Miroslav Penchev³, Ali Guvenc³, Isaac Ruiz³, Aaron S George¹, Duoduo Bao⁴, Valentine Vullev⁴, Mihrimah Ozkan^{1 3}, Cengiz S Ozkan^{1 5}.

Show Abstract

2:15 PM - DD9.3

Integration of the Magnetic Insulator EuO onto Graphene

Adrian Swartz¹, Patrick M Odenthal¹, Roland K Kawakami¹.

Show Abstract

2:30 PM - DD9.4

Conformal Graphene Coatings as Energy Harvesting Smart Skins

Abhay Thomas¹, Prashant Dhiman¹, Fazel Yavari¹, Xi Mi², Yunfeng Shi², Nikhil Koratkar¹.

Show Abstract

2:45 PM - DD9.5

Defects in Carbon Based Nanostructures - Implications for Nonlinear Structures and Energy Storage

Prabhakar Bandaru¹, Mark Hoefer², Apparao Rao².

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3:00 PM -

BREAK

Show Abstract

DD10: Carbon Nanotubes I

- Chair: Klaus Kern
- Chair: Jiwoong Park
- Wednesday PM, April 11, 2012
- Moscone West, Level 3, Room 3009

3:30 PM - *DD10.1

Carbon-based Nanomaterials: Design, Synthesis, and Properties

Colin Nuckolls¹.

Show Abstract

4:00 PM - DD10.3

Mass Transport and Selectivity in ALD Functionalized Carbon Nanotube Pores

Francesco Fornasiero¹, Jung B In², Monika M Biener¹, Costas P Grigoropoulos², Yinmin Wang¹, A. J Nelson¹, Kuang J Wu¹.

Show Abstract

4:15 PM - DD10.4

Role of Gas-phase Reactions and Thermal Gradient Control in Carbon Nanotube Synthesis

Seul Ki Youn¹, Baskar P Gopi², Kenneth Teo², Hyung Gyu Park¹.

Show Abstract

4:30 PM - DD10.5

Comparing the Mechanical Response of Carbon Nanotube Bundles in Compression vs. Indentation: An In-situ Study

Siddhartha Pathak¹, Nisha Mohan¹, Ee J Lim¹, Parisa Pour Shahid Saeed Abadi², Samuel Graham², Baratunde A Cola², Julia R Greer¹.

Show Abstract

DD11: Poster Session

- Chair: Nicola Pugno
- Chair: Klaus Kern
- Wednesday PM, April 11, 2012
- Marriott, Yerba Buena, Salons 8-9

8:00 PM - DD11.1

Size Selection of Dispersed, Exfoliated Graphene Flakes and Their Application: Reinforced Composites

Umar Khan¹, Peter May¹, Arlene O'Niel¹.

Show Abstract

8:00 PM - DD11.2

Segregation of Few-layer Graphene with Low Defects by Pulsed Laser Deposition

Angel Ting Ting Koh¹, Yuan Mei Foong¹, Daniel Chua¹.

Show Abstract

8:00 PM - DD11.3

Hybrid Graphene-metal Nanoparticle Systems: Electronic Properties, Gas Interaction and Catalytic Properties

Nripan Mathews¹, Verawati Tjoa^{1 2}, Julianto Chua¹, Wei Jun², Vinayak Dravid³, Subodh Mhaisalkar¹.

Show Abstract

8:00 PM - DD11.5

Polythiophene Assisted Sorting of Semiconducting Single Walled Carbon Nanotubes (SWNTs) for Thin Film Transistors

Huiliang (Evan) Wang¹, Jianguo Mei², Zhenan Bao².

Show Abstract

8:00 PM - DD11.6

Ferromagnetic Nanowires Coated with Graphitic Surfaces as Potential Drug Delivery Nanoplatfoms

M. A Zeeshan¹, S. K Youn², S. Pane¹, E. Pellicer³, S. Fusco¹, S. Schuerle¹, M. D Baro³, J. Sort^{3 4}, H. G Park², B. J Nelson¹.

Show Abstract

8:00 PM - DD11.7

Large-area Metrology of CVD-grown Graphene Layers on Copper Foil Substrates

Dennis Larry Pleskot¹, Maziar Ghazinejad², Jennifer R Kyle³, Mihrimah Ozkan³, Cengiz S Ozkan².

Show Abstract

8:00 PM - DD11.8

Preparation of Graphene from Flames and the Application of TiO₂/Graphene Composites in Photocatalysis

Yupeng Zhang¹, Chunxu Pan^{1 2 3}.

Show Abstract

8:00 PM - DD11.9

FET Biosensors Based on Large-area Graphene Layers: Chitosan-Polyaniline Composite Nanostructures

Tamer Cirak^{1 2}, Miroslav Penchev³, Shirui Guo⁴, Wei Wang⁵, Emir Baki Denkbasi¹, Mihrimah Ozkan³, Cengiz S Ozkan^{2 5}.

Show Abstract

8:00 PM - DD11.10

Fabrication of Gold Nanoparticle Embedded Thin Graphene Film Using Reduction Capability of Dopamine

Wonoh Lee¹, Jea Uk Lee¹, Hwa-Jin Cha¹, Jin-Woo Yi¹, Sang-Bok Lee¹, Joon-Hyung Byun¹, Byung-Sun Kim¹.

Show Abstract

8:00 PM - DD11.11

Growth Behavior of CVD Graphene on Copper in Rapid Thermal Process (RTP) System

Wonjae Kim¹, Juha Riikonen¹, Sanna Arpiainen², Olli Svenski¹, Changfeng Li¹, Harri Lipsanen¹.

Show Abstract

8:00 PM - DD11.12

Photocatalytic Activity of MWCNT/TiO₂ Composites

Silvana Da Dalt¹, Annelise K Alves¹, Carlos P Bergmann¹.

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8:00 PM - DD11.13

Friction Force Study on a Strain Induced Anisotropic Monolayer Graphene

Jin Sik Choi¹, Jin-Soo Kim¹, Ik-Su Byun¹, Duk Hyun Lee¹, Mi Jung Lee¹, Bae Ho Park¹.

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8:00 PM - DD11.14

Assortment of Single-walled Carbon Nanotubes by Functionalization-induced Hydrophilicity

Xuanding Han^{1,2,3}, Eugene Kok³, Kam Chew Leong², Jun Wei³, Pooi See Lee¹, Chee Lip Gan¹.

Show Abstract

8:00 PM - DD11.15

Emulsifier-free Concentrated Graphene Dispersions for Printing Flexible Electronics and Freestanding Graphene Films

Folke Johannes Toelle^{1,2}, Martin Fabritius², Rolf Muelhaupt^{1,2}.

Show Abstract

8:00 PM - DD11.16

Sonochemical Functionalization of Ordered Mesoporous Carbons and Their Applications in Uranium Adsorption from Seawater

Joanna Gorka¹, Richard T Mayes¹, Sheng Dai^{1,2}.

Show Abstract

8:00 PM - DD11.17

Plasma Patterning: Template Free Hydrophobic/Hydrophilic Patterning of Vertically Aligned Carbon Nanotube Arrays

Samuel Yick^{1,2}, Zhaojun Han¹, Kostya Ostrikov^{1,2}.

Show Abstract

8:00 PM - DD11.18

Carbon Nanotubes Growth on Cobalt-containing Amorphous Carbon Films

Naiyun Xu^{1,3,4}, Chin Chong Yap^{1,3}, Hang Tong Teo², Chee Mang Ng⁴, Beng Kang Tay^{1,3}.

Show Abstract

8:00 PM - DD11.19

Mesoporous Graphene Nanocomposites for Supercapacitor Applications

Hamed Hosseini Bay¹, Maziar Ghazinejad¹, Zafer Mutlu³, Zachary Favors³, Miroslav Penchev², Mihrimah Ozkan², Cengiz S Ozkan¹.

Show Abstract

8:00 PM - DD11.20

Effects of Graphitization on Electronic Properties of Graphene on SiC (0001)

Weijie Lu¹, Said Elhamri², Lawrence Grazulis¹, Gerald Landis¹, William C Mitchel¹, John Boeckl¹.

Show Abstract**8:00 PM - DD11.21**

Synthesis of Graphene Layers by Chemical Vapor Deposition Using Tetrabromomethane as Carbon Source

Taejin Choi¹, Hyemin Kang¹, Haneul Jung¹, Juree Hong¹, Sanggeun Lee¹, Hyunik Lee¹, Taeyoon Lee¹, Hyungjun Kim¹.

Show Abstract**8:00 PM - DD11.24**

Effect of Surface Functionalization on the Wetting and Electrochemical Properties of Carbon Nanotube Arrays

Adrianus Indrat Aria¹, Morteza Gharib¹.

Show Abstract**8:00 PM - DD11.26**

Hydrogen Sensing by Pt Nanoparticle-decorated Large-area Graphene Sheets

Miroslav Penchev¹, Tamer Cirak^{5 2}, Wei Wang³, Shirui Guo⁴, Jiebin Zhong², Mihrimah Ozkan^{1 3}, Cengiz S Ozkan^{2 3}, Emir B Denkbaz⁵.

Show Abstract**8:00 PM - DD11.27**

Ultrananocrystalline Diamond Microarrays: Towards Label-free, Reliable, Multiplexed Electrochemical Sensors

Prabhu U Arumugam¹, Shabnam Siddiqui¹, Zhengting Dai¹, Hongjun Zeng¹, Nicolaie Moldovan¹, John Carlisle¹.

Show Abstract**8:00 PM - DD11.30**

Waterborn Carbon

Magdalena Titirici¹, Robin White¹, Shiori Kubo¹, Li Zhao¹, Camillo Falco¹, Stephanie Wohlgemuth¹, Markus Antonietti¹.

Show Abstract**8:00 PM - DD11.31**

Carbide Derived Carbons from Renewable Biopolymer Sources

Stefan Glatzel¹, Cristina Giordano¹, Markus Antonietti¹.

Show Abstract**8:00 PM - DD11.32**

Three Dimensional Characterization of Oxides Formed in Carbon Nanotube Reinforced Tantalum Carbide

Debrupa Lahiri¹, Anup K Keshri¹, Arvind Agarwal¹, Allen Gu², Jeff Gelb².

Show Abstract**8:00 PM - DD11.35**

Conductivity and Transmittance Properties of Graphene Thin Films Prepared from Exfoliated Carbon Nanotubes (CNTs), Highly Oriented Pyrolytic Graphite (HOPG), Natural Flake Graphite, and Carbon Powder

Matthew D Marchese², Rosario A. Gerhardt¹.

Show Abstract

8:00 PM - DD11.36

Controlled Large-Scale Synthesis of Hexagonal Boron Nitride (h-BN) and Graphene/ h-BN Films

Ariel Ismach¹, Harry Chou¹, Cody Pope¹, Alan Covacevich¹, Richard Pinner¹, Luigi Colombo², Rodney Ruoff¹.

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2012-04-12

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Symposium Organizers

- Cengiz S. Ozkan, University of California, Riverside
- Kang Wang, University of California, Los Angeles
- Markus J. Buehler, Massachusetts Institute of Technology
- Nicola Pugno, Politecnico di Torino

DD12: Optical and Thermal Properties

- Chair: Sang Ouk Kim
- Chair: Maziar Ghazinejad
- Thursday AM, April 12, 2012
- Moscone West, Level 3, Room 3009

8:15 AM - *DD12.1

Large-scale Production of Transferable and Dispersible Graphene Nanostructures of Controlled Structural, Electrical and Optical Properties; and Principles Defining Graphene-based Sensors

Vikas Berry¹.

Show Abstract

8:45 AM - *DD12.2

Plumber's Wonderland Found on Graphene

Ju Li¹, Jianyu Huang².

Show Abstract

9:15 AM - DD12.3

Graphene 3-D Hierarchical Structures and Composites via Emulsion Template

Suelen Bargi¹, Cecilia Mattevi¹, Miriam Miranda¹, Ling Wang², Angelika Menner², Alexander Bismarck², Eduardo Saiz¹.

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9:30 AM - DD12.4

Direct Growth of Graphene Nanoribbons for Graphene Device Fabrication

Iñigo Martin-Fernandez¹, Yuegang Zhang¹.

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9:45 AM - DD12.5

Graphene Nanoribbons from CVD Graphene

Ashkan Behnam¹, Austin Lyons¹, Myung-Ho Bae¹, Edmond K Chow¹, Sharnali Islam¹, Christopher M Neumann¹, Eric Pop¹.

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10:00 AM -

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10:30 AM - DD12.6

Advances in Industrial Graphene Metrology and the Role of Image Processing

Jennifer Reiber Kyle¹, Cengiz S Ozkan², Mihrimah Ozkan¹.

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10:45 AM - DD12.7

Strong Rotational Angle Dependence of Raman Spectroscopy in Rotated Double-layer Graphene

Kwanpyo Kim^{1 2 3}, Sinisa Coh^{1 3}, Liang Z Tan^{1 3}, William Regan^{1 3}, Jong Min Yuk^{1 3 4}, Eric Chatterjee¹, Michael F Crommie^{1 2 3}, Marvin L Cohen^{1 2 3}, Steven G Louie^{1 3}, Alex Zettl^{1 2 3}.

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11:00 AM - DD12.8

Direct Visualizing Graphene Layers Using a Transient-Absorption Optical Microscope

Chen Yang¹, Junjie Li², Ji-xin Cheng².

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11:15 AM - DD12.9

Thermal Conductance at Graphene-copper Interface and Role of Phonon Modes

Liang Chen¹, Satish Kumar¹.

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11:30 AM - DD12.10

Thermal Actuation of Graphene Oxide Nanoribbon Mats

Jiyoung Oh¹, Mikhail E Kozlov¹, Javier Carretero-González¹, Elizabeth Castillo-Martínez¹, Ray H Baughman¹.

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11:45 AM - DD12.11

Aligned Carbon Nanotube Array for Ultra-high Interfacial Thermal Conductance

Rong-Shiuan Chu^{1 2}, Yang Zhao², Costas Grigoropoulos^{2 1}, Oscar Dubon^{3 4 1}, Arun Majumdar⁵.

Show Abstract

DD13: Carbon Nanotubes II

- Chair: Nicola Pugno
- Chair: Roland Kawakami
- Thursday PM, April 12, 2012
- Moscone West, Level 3, Room 3009

1:30 PM - *DD13.1

Alignment Controlled Growth of Single Walled Carbon Nanotubes on Quartz

Jianliang Xiao¹, Simon Dunham², Ping Liu³, Yongwei Zhang³, Yonggang Huang^{1,4}, John A Rogers^{2,5}.

Show Abstract

2:00 PM - DD13.2

Growth of Dense Carbon Nanotube Forests on Bulk Copper Substrates Coated with a Single Inconel Thin Film

Korrinn Marie Strunk¹, Joseph J Sopcisak¹, Jennifer L Gray¹.

Show Abstract

2:15 PM - DD13.3

Transition Metal Catalyst Nanostructure for the Synthesis of Highly Vertically Aligned Multi-walled Carbon Nanotubes

Takashi Matsumoto¹, Osayuki Akiyama¹, Daisuke Nishide¹, Yuichi Yamazaki¹, Makoto Wada¹, Naoshi Sakuma¹, Akihiro Kajita¹, Tadashi Sakai¹.

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2:30 PM - DD13.4

Activation of Carbon Nanotube Yarn and Sheet by Radio Frequency Atmospheric Pressure Plasma Jet

Hang Yu¹, Siu F Cheng², Thomas S Williams¹, Joseph Severino³, Igor M De Rosa³, Robert F Hicks^{1,2}.

Show Abstract

2:45 PM - DD13.5

Revealing Diameter-dependent Growth Kinetics in Carbon Nanotube Populations

Mostafa Bedewy¹, Eric R Meshot¹, A. John Hart¹.

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3:00 PM -

BREAK

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DD14: Hierarchical Nanostructures and Nanocomposites II

- Chair: Tomas Palacios
- Chair: Rodney Ruoff
- Thursday PM, April 12, 2012
- Moscone West, Level 3, Room 3009

3:30 PM - DD14.1

A Facile Route to Sandwich-like Graphene/Metal Oxide Nanocomposite

Hsun-Wei Cho¹, Jih-Jen Wu¹.**Show Abstract****3:45 PM - DD14.2**

Surface Modifications of Graphene-based Polymer Nanocomposites by Different Synthesis Techniques

Burcu Saner Okan¹, Selmiye Alkan Gürsel¹, Yuda Yueruem¹.**Show Abstract****4:00 PM - DD14.3**

Advanced Carbon Nanotube-alumina Composite for Applications

Mamoru Omori¹, Go Yamamoto¹, Keiichi Shirasu¹, Toshiyuki Hashida¹.**Show Abstract****4:15 PM - DD14.4**

In Silico Tensile Test of Graphene Cables

Federico Bosia², Nicola Maria Pugno¹.**Show Abstract****DD15: Poster Session**

- Chair: Goknur Cambaz Buke
- Chair: Cengiz Ozkan
- Thursday PM, April 12, 2012
- Marriott, Yerba Buena, Salons 8-9

8:00 PM - DD15.1

Probing Mechanical Properties of Chemical Vapor Deposition Graphene Membranes Using Indentation Methods

Gwan-Hyoung Lee^{1,5}, Ryan Cooper¹, Sungjoo An¹, Arend van der Zande¹, Nicholas Petrone¹, Sunwoo Lee², Alex Hammerberg¹, Changgu Lee³, Bryan Crawford⁴, Jeffrey Kysar¹, James Hone¹.**Show Abstract****8:00 PM - DD15.2**

Extremophiles for Biologically-based Reduction of Graphene Oxide into Graphene

Yuji Tanizawa¹, Sreejith Raveendran², Yasuhiko Yoshida², Toru Maekawa², D. Sakthi Kumar², Ryugo Tero¹, Hiroshi Okada¹, Adarsh Sandhu^{1,3}.**Show Abstract****8:00 PM - DD15.4**

Electric Field Induced Reduction of Graphene Oxide: A Direct Evidence Form In Situ Raman Study

Satyaprakash Sahoo¹, Gurpreet Singh¹, Anand Singh Gaur¹, Ram S Katiyar¹.**Show Abstract****8:00 PM - DD15.5**

Large Scale Catalytic Growth of Graphene on Nickel for Transparent Conductive Electrodes

Alexandru Delamoreanu^{1,2}, Caroline Rabot², Christophe Vallee¹, Aziz Zenasni².

Show Abstract

8:00 PM - DD15.6

Sol-gel Chemistry in the Hydrothermal Carbonization

Tim-Patrick Fellingner¹, Robin J White¹, Maria-Magdalena Titirici¹, Markus Antonietti¹.

Show Abstract

8:00 PM - DD15.9

Structure and Bonding in Nanodomains and at Their Interfaces in Silicon Carbonitride Polymer-derived Ceramics

Scarlett Widgeon¹, Gabriela Mera², Yan Gao², Emil Stoyanov³, Sabyasachi Sen¹, Alexandra Navrotsky³, Ralf Riedel².

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8:00 PM - DD15.10

Investigation of the Evaporation of the Nickel Catalyst during Growth of Carbon Spheres

Shanee Pacley¹, William Mitchel¹, Emory Beck-Millerton¹, Howard Smith², Dave Anderson².

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8:00 PM - DD15.11

Approaching the Theoretical Limit for Reinforcing Polymers with Graphene

Peter May¹, Umar Khan¹, Arlene O'Neill¹, Jonathan N Coleman¹.

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8:00 PM - DD15.12

Electromechanical Actuation of Pristine Graphene and Graphene Oxide; Optimization and Comparison

Geoffrey W Rogers¹, Jefferson Z Liu¹.

Show Abstract

8:00 PM - DD15.13

Modulation of the Electronic Property of Graphene via the Hydroxylated and Defective SiO₂ Substrates

Chin-Lung Kuo¹, Chi-Jen Yang¹.

Show Abstract

8:00 PM - DD15.14

Novel Graphene/Carbon Nanotube Hybrid Anode Materials for Lithium Ion Batteries

Shirui Guo^{1,4}, Wei Wang³, Valentine Vullev⁵, Mihrimah Ozkan^{4,1}, Cengiz S Ozkan^{2,4}.

Show Abstract

8:00 PM - DD15.15

Modifying Electronic Transport Properties of Graphene by Electron Beam Irradiation

Yuheng He¹, Lin Wang¹, Xiaolong Chen¹, Zefei Wu¹, Wei Li¹, Yuan Cai¹, Ning Wang¹.

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8:00 PM - DD15.16

The Relationship of Morphological Structure, Electronic Structure and Electrical Transport Property: A Sample Study of Carbon Nanotubes

Jing Gao¹, Jun Zhong¹, Xuhui Sun¹.

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8:00 PM - DD15.17

DFT Study of the Adsorption of Hydrogen Sulfide on Graphene: The Case of Defects

Heriberto Hernandez Coccoletzi¹, Jesús E Castellanos Águila², Gregorio Hernández Coccoletzi³.

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8:00 PM - DD15.18

Electric Field Induced Growth of Aligned Cow Nipple-like Carbon Micron-nano Composite Structure via Chemical Vapor Deposition

Chengwei Liao¹, Yupeng Zhang¹, Chunxu Pan^{1 2 3}.

Show Abstract

8:00 PM - DD15.19

Low Temperature Structural Control of Carbon Nickel Thin Films

David Bosworth¹, Nadia Stelmashenko¹, Zoe Barber¹.

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8:00 PM - DD15.20

Effects of Substrate Pre-Annealing and Tilt Angle Parameters and Process Tube Location on the Morphological and Electrical Properties of Graphene Layers

Zafer Mutlu², Isaac Ruiz³, Hamed Hosseini Bay¹, Dennis Pleskot², Zachary J. Favors², Aaron George², Miroslav Penchev³, Shirui Gue^{4 2}, Wei Wang², Maziar Ghazinejad^{1 2}, Mihrimah Ozkan³, Cengiz S. Ozkan^{1 2}.

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8:00 PM - DD15.21

Scalable Chemical Vapor Deposition of Graphene

Tom Salagaj¹, Jeonghyn (Jeff) Hwang², Michael Spencer², Nick Sbrockey¹, Gary S Tompa¹.

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8:00 PM - DD15.22

Characterization of Graphene Membranes for Nanofiltration

Sean C O'Hern¹, Cameron A Stewart¹, Jongho Lee¹, Tarun Jain¹, Juan-Carlos Idrobo², Tahar Laoui³, Motaz Atieh³, Rohit Karnik¹.

Show Abstract

8:00 PM - DD15.23

Emerging Energy Storage Devices Based on Composite Nanostructures of Graphene and Rare Earth Metal Oxides

Jiebin Zhong¹, Wei Wang³, Jian Lin¹, Miroslav Penchev², Mihrimah Ozkan², Cengiz S Ozkan^{1 3}.

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8:00 PM - DD15.25

Defect-mediated Properties of Graphene-boron Nitride Superlattices for Thermoelectrics

Dinkar Nandwana¹, Elif Ertekin¹.

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8:00 PM - DD15.26

Chirality Enrichment and Diameter Control of Laser-synthesized Single-wall Carbon Nanotubes for Energy Applications

Thomas Mastrangelo¹, Jamie E Ellis¹, Alysha Helenic^{1 2}, Chris M Schauerma^{1 3}, Brian J Landi^{1 2}.

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8:00 PM - DD15.28

Gold Subnanoclusters: Filling the Defects of Reduced Graphene Oxides

Hyeyoung Koo¹, Wonsan Choi¹.

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8:00 PM - DD15.29

N-doping Effects of Graphene by N₂-plasma Treatment

Minwook Jung^{1 2}, Dae Sung Jeong¹, Sun Sook Lee¹, Chong-Yun Park², Ki-Seok An¹.

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8:00 PM - DD15.30

Investigation of Covalently Bonded Fullerenes and Carbon Nanotubes in Pillared Graphene Nanostructures

Zachary James Favors¹, Cengiz Ozkan¹, Zafer Mutlu¹, Mihrimah Ozkan¹.

Show Abstract

8:00 PM - DD15.31

Fabrication of Transparent Conductive Thin Films with the Multilayer Structure Using Multi-walled Carbon Nanotubes and Graphene Oxides

Hyunchul Jang¹, Jungmi Choi¹, Junghyun Sok¹.

Show Abstract

8:00 PM - DD15.32

Three-dimensional Electrical Profiling of Carbon Nanotube Interconnects

Thomas Hantschel¹, Andreas Schulze^{1 2}, Andre Dathe¹, Pierre Eyben¹, Marleen van der Veen¹, Bart Vereecke¹, Xiaoxing Ke³, Wilfried Vandervorst^{1 2}.

Show Abstract

8:00 PM - DD15.33

Barrier Properties of Graphene-TiO₂ Nanocomposites: UV-induced Photoreduction of Graphene Oxide for High Performance and Long-term Stable Organic Devices

Sooji Nam¹, Jaeyoung Jang¹, Jihun Hwang¹, Seonuk Park¹, Chan Eon Park¹.

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8:00 PM - DD15.34

Doping-concentration-dependent Structural and Electrical Properties of p-type Graphene Doped with AuCl_3

Dong Hee Shin¹, Chang Oh Kim¹, Sung Kim¹, Suk-Ho Choi¹.

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8:00 PM - DD15.35

Size-dependent Absorption and Photoluminescence Behaviors of Graphene Quantum Dots

Dong Hee Shin¹, Sung Kim¹, Chang Oh Kim¹, Suk-Ho Choi¹, Sung Won Hwang², Cheolsoo Sone², Min-Kook Kim³, Hyoung Joon Choi³.

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8:00 PM - DD15.36

Self-aligned Low Contact Resistance CNT-via Interconnect Structure Utilizing Multi-layer Metal/Catalyst

Tzu-Ling Liu¹, Tri-Rung Yew¹.

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8:00 PM - DD15.37

MnO₂ Decorated Three Dimensional Graphene Heterostructures for Supercapacitor Electrodes

Wei Wang^{1,3}, Shirui Guo², Miroslav Penchev³, Duoduo Bao⁴, Valentine Vullev⁴, Mihrimah Ozkan^{1,3}, Cengiz Ozkan^{1,5}.

Show Abstract

8:00 PM - DD15.38

Generation of Hydrogen Peroxide on a Pyridine-like Nitrogen-nickel Doped Graphene Surface

Eduardo Rangel^{1,2}, Luis Fernando Magana¹, Luis Enrique Sansores².

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8:00 PM - DD15.39

Functionalization of Single Walled Carbon Nanotubes with Arenediazonium Salt in Molten Urea

Hector Leija¹, Oxana Kharissova¹.

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8:00 PM - DD15.41

When Small is Different: The Case of Membranes inside Tubes

Eric Perim¹, Alexandre F Fonseca², Douglas S Galvao¹.

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8:00 PM - DD15.42

Experimental and Theoretical Study on the Energy Dependent Surface Evolution and Microstructure Changes in Copper Nanostructured Composite

Yuan Mei Foong¹, Angel Koh¹, Daniel Chua¹.

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8:00 PM - DD15.43

Simultaneous Synthesis and Patterning of Graphene by Drop-and-Synthesis Inkjet Printing

Kukjoo Kim¹, Cheol Jang¹, Eungtaek Kim¹, Sung Il Ahn², Kyung Cheol Choi¹.

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8:00 PM - DD15.44

Process Optimization Growth of Large Area Single and Multilayer Graphene on Copper Substrates

Isaac Ruiz¹, Maziar Ghazinejad³, Adan Velasco³, Mihrimah Ozkan¹, Cengiz S Ozkan².

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8:00 PM - DD15.46

Covalent Functionalization of Single-walled Carbon Nanotubes by Ferrocene Derivatives for Bioelectrochemical Applications

Naoual Allali^{1 2}, Veronika Urbanova¹, Victor Mamane², Jeremy Waldbock¹, Mathieu Etienne¹, Martine Mallet¹, Xavier Devaux³, Brigitte Vigolo⁴, Yves Fort², Alain Walcarius¹, Alexander V Soldatov⁵, Edward McRae⁴, Manuel Dossot¹.

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8:00 PM - DD15.47

Conductivity of CNT to CNT Bumps

Chin Chong Yap^{1 2}, Dunlin Tan^{1 2}, Christophe Brun², Edwin Hang Tong Teo^{1 2 3}, Jun Wei⁴, Baillargeat Dominique², Beng Kang Tay^{1 2}.

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8:00 PM - DD15.49

Growth of Carbon Nanotube Forests on Carbon Fibers with a SiO₂ Interlayer

Evaldo Jose Corat¹, Erica F Antunes¹, Viviane Q da Silva¹, Vagner E Marques¹, Vladimir J Trava-Airoldi¹.

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- Cengiz S. Ozkan, University of California, Riverside
- Kang Wang, University of California, Los Angeles
- Markus J. Buehler, Massachusetts Institute of Technology
- Nicola Pugno, Politecnico di Torino

DD16: Electrical Properties III

- Chair: Yonggang Huang
- Chair: Yuan Chen

- Friday AM, April 13, 2012
- Moscone West, Level 3, Room 3009

8:00 AM - *DD16.1

Spin-transport and Magnetism in Graphene

Roland Kawakami¹.

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8:30 AM - DD16.2

Photoconductivity of Graphene-based Composite

Wonjun Park^{1 2}, Jiuning Hu^{1 2}, Yong P Chen^{3 2 1}.

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8:45 AM - DD16.3

Quantifying Charge Transfer and Doping of Graphene by Organic Molecules

Alexander Samuels¹, David Carey¹.

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9:00 AM - DD16.4

Mapping Edge-state Wavefunctions in Chiral Graphene Nanoribbons

Dimas de Oteyza^{1 2}, Yenchia Chen^{1 3}, Xiaowei Zhang^{1 3}, David Strubbe¹, Liyang Jiao⁴, Hongjie Dai⁴, Steven Louie¹, Michael Crommie^{1 3}.

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9:15 AM - DD16.5

Controllable Electronic Property of Block Co-Polymer/Graphene Field Effect Transistor and Its Application as Robust pH Sensor

Shirui Guo^{1 3}, Maziar Ghazinejad², Xiangdong Qin¹, Huaxing Sun¹, Wei Wang⁴, Francisco Zaera¹, Cengiz S Ozkan^{2 4}, Mihrimah Ozkan^{3 1}.

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9:30 AM - DD16.6

Nafion/CNTs-based Membranes for Mixed Proton and Electron Conduction in Innovative Sun-driven Water Splitting Devices

M. Tortello¹, S. Bianco², V. Ijeri^{3 4}, P. Spinelli³, E. Tresso³.

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9:45 AM - DD16.7

A Nanomechanical Approach to Sequencing DNA Using Carbon Resonators

Alex Greaney¹, Jeffrey C Grossman².

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10:00 AM -

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Show Abstract**DD17: Growth, Defects, Mechanisms III**

- Chair: Kang Wang
- Chair: David Carey
- Friday AM, April 13, 2012
- Moscone West, Level 3, Room 3009

10:30 AM - DD17.1

The Shape of Graphene Domains on Copper Substrates

Lili Fan¹.

Show Abstract**10:45 AM - DD17.2**

Synthesis of High-quality Large-area Graphene from Polycyclic Aromatic Hydrocarbons

Xi Wan¹, Kun Chen¹, Xiaomu Wang¹, Shanghui Chen², Jian Chen², Jianbin Xu¹.

Show Abstract**11:00 AM - DD17.3**

Ethanol-assisted Graphene Oxide-based Thin Film Formation at Pentane-Water Interface

Yuan Chen¹, Fuming Chen¹.

Show Abstract**11:15 AM - DD17.4**

Continuously Spun Pure Carbon Nanotube Fibre Based Composites

Krzysztof K Koziol¹, Jinhu Chen¹, Agnieszka Lekawa-Raus¹, Sameer S Rahatekar².

Show Abstract**11:30 AM - DD17.5**

New Origin of Ripples Formation on Graphene: Role of Thermosolutal Instabilities of Substrate

Tereza M Paronyan¹, Elena M Pigos¹, Gugang Chen¹, Avetik Harutyunyan¹.

Show Abstract**DD18: Hierarchical Nanostructures and Nanocomposites III**

- Chair: Maziar Ghazinejad
- Chair: Shirui Guo
- Friday PM, April 13, 2012
- Moscone West, Level 3, Room 3009

1:30 PM - DD18.1

Nanomechanics of Graphene Nanoscrolls

Nicola Maria Pugno¹, Xinghua Shi³, Cheng Yuan², Huajian Gao².

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1:45 PM - DD18.2

Reduction of Graphene Oxide in the Presence of Ethanol and Methanol: An Experimental and Theoretical Study

Cheng Gong¹, Muge Acik¹, Ramin M Abolfath², Yves J Chabal¹, Kyeongjae Cho¹.

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2:00 PM - DD18.3

Hierarchical Graphene Macroassemblies

Marcus Andre Worsley¹, Matthew D Merrill¹, Matthew E Suss¹, Arne Wittstock¹, Michael Stadermann¹, Joe H Satcher¹, Juergen Biener¹, Theodore F Baumann¹.

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2:15 PM - DD18.4

Polyoxometalate Clusters Supported on Functionalized Graphene Sheets as Nanohybrids for the Catalytic Combustion of Liquid Fuels

Jean-Philippe Tessonnier¹, Mark A Barteau¹, Daniel M Dabbs², Ilhan A Aksay², Francis M Haas³, Frederick L Dryer³, Richard A Yetter⁴.

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2:30 PM - DD18.5

Graphene Oxide-supported Nanostructured Carbon Materials

Gun-hee Moon^{1,2}, Wonyong Choi¹, Yongsoon Shin².

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2:45 PM - DD18.6

Graphene-boron Nitride Heterostructures

Peter Sutter¹, Jayeeta Lahiri¹, Rocio Cortes¹, Eli Sutter¹.

Show Abstract

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