



Fifteenth International Conference on the Science and Applications of Nanotubes

2-6 June 2014

University of Southern California

Los Angeles, California, USA



Summary:

The Fifteenth International Conference on the Science and Application of Nanotubes (NT14) was held at the University of Southern California in Los Angeles, California on June 2-6, 2014. NT14 upheld the NT tradition of presenting the latest results in the science and applications of nanotubes and related materials in plenary sessions. Emphasis was given to convivial poster sessions and student participation. Over 225 participants attended the conference, including students, post-docs, faculty, and members from industry. A total of 45 talks were presented, as well as 157 posters. A complete list of abstracts can be found at <http://nt14.org/>.

NT14 Program Schedule

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	June 1	June 2	June 3	June 4	June 5	June 6	June 7
9:00	Satellite Symposia CCTN14, MSIN14, CNTFA14	Shoushan Fan	Kenji Hata	Ming Zheng	Young Hee Lee	Feng Wang	Satellite Symposia GSS14
9:15							
9:30		Florian Banhart	Alexander Hoegele	Giorgia Pastorin	H.Kataura Y. Nakai	Yutaka Ohno	
9:45		R. Saito	Artyukhov	R. Zhang	S.Maruyama	M. Picher	
10:00		Nasibulin	H. Hasdeo	Goltapehei	R. Krupke	Xi Ling	
10:15		Poster 1+2 Summary	Poster 3+4 Summary	Poster 5+6 Summary	Sofie Cambre	F. Papadim. A. Vierck	
10:30					K. Otsuka	Summary and Poster	
10:45					H. Wang	NT15 Preview	
11:00					H. Jiang	Closing	
11:15					A. Loiseau		
11:30		Poster Session 1 and Exhibition	Poster Session 3 and Exhibition	Poster Session 5 and Exhibition	Max Shulaker	Lunch	
11:45							
12:00							
12:15							
12:30							
12:45	Registration/Badge Pick-up	Lunch	Lunch	Lunch	Excursion and Banquet		
13:00							
13:15							
13:30							
13:45							
14:00							
14:15		Stephen Purcell	O. T. Gul	Jerry Tersoff			
14:30		Nikolaev	X. Wei	Laurent Cognet			
14:45		J. Campo	Sakurai				
15:00		J. Yang	B. H. Son	T.Maruyama			
15:15							
15:30							
15:45							
16:00		Poster Session 2 and Exhibition	Poster Session 4 and Exhibition	Poster Session 6 and Exhibition			
16:15							
16:30							
16:45							
17:00							
17:15		G. Soavi	T. Susi	J. S. Lauret			
17:30		Mikito Koshino	Alan Windle	Yuichiro Kato			
17:45							
18:00-20:00	Welcome Reception						

Keynote Talk		Poster summary
Invited Talk		Poster Session
Contributed Talk		Satellite Symposium

Organizational Structure: The NT14 conference organizing committee consists of a local organizing committee and an advisory board.

The Local Organizing Committee:

Stephen Cronin (University of Southern California)
Chongwu Zhou (University of Southern California)
Marc Bockrath (University of California at Riverside)
Steve Louie (University of California at Berkeley)

Advisory Board:

Christophe Bichara
(CINAM, CNRS and Aix Marseille Université, France)

Stephen Doorn
(Los Alamos National Laboratory, USA)

Esko Kauppinen
(Aalto University, Finland)

Jacques Lefebvre
(National Research Council, Canada)

James Elliott
(Cambridge University, UK)

Elena Obraztsova
(Prokhorov General Physics Institute, RAS, Russia)

Stephanie Reich
(Freie Universitat Berlin, Germany)

Hisanori Shinohara
(Nagoya University, Japan)

Yudasaka Masako
(National Institute of Advanced Industrial Science and Technology (AIST), Japan)

Young-Woo Son
(Korea Institute for Advanced Study, Korea)

Fei Wei
(Tsinghua University, China)

Stephen B. Cronin
(University of Southern California, USA)

Program Summary

Monday (June 2)

K1: Carbon Nanotubes: From Basic Research to Commercialization (Shoushan Fan)

I1: Atomic Carbon Chains: A Perfectly One-Dimensional Carbon Phase Beyond Nanotubes (F. Banhart)

CT1: Coherent phonon spectra of G band in single wall carbon nanotubes (R. Saito)

CT2: Single-Walled Carbon Nanotube Networks for Ethanol Vapor Sensing Application (A. Nasibulin)

Poster Session 1+2 Summary (D. Tomanek)

Poster Session 1 and Exhibition

Lunch

I2: Giant Currents and Temperatures for Coulomb Blockade during Field Emission from Single Wall Carbon Nanotubes
(S. T. Purcell)

CT3: Automated carbon nanotube synthesis by water-assisted CVD (P. Nikolaev)

CT4: Giant nonlinear optical response from dye-filled carbon nanotube hybrids (J. Campo)

CT5: Radial Deformation of Single-Walled Carbon Nanotubes on Quartz Substrates and the Resultant Anomalous Diameter-Dependent Reaction Selectivity (J. Yang)

Poster Session 2 and Exhibition

CT6: Ultrafast charge photogeneration and dynamics in semiconducting carbon nanotubes (G. Soavi)

I3: Electronic properties in moiré superlattice in rotationally stacked atomic layers (M. Koshino)

Tuesday (June 3rd)

K2: Milestones in Synthesis, Dispersion, and Applications that Realized Single-walled Carbon Nanotubes Industrialization
(K. Hata)

I4: Cryogenic Optical Spectroscopy of Carbon Nanotubes
(A. Högele)

CT7: Origins of carbon nanotube helicity and preference for (n,n-1) tubes (V. I. Artyukhov)

CT8: Quantum interference effect in Raman spectra of metallic nanotubes (E. H. Hasdeo)

Poster 3+4 Summary

Poster Session 3 and Exhibition

Lunch

CT9: Using Nanotube Transistors for Single-Molecule Studies of DNA Polymerase I (O. T. Gul)

CT10: Optoelectronic Properties and Electromechanical Resonance Behavior in Individual Suspended Carbon Nanotube pn-Junctions and Devices (S. Cronin)

CT11: Optical Properties of Single Chirality (5,4) SWCNTs
(X. Wei)

CT12: Catalyst control for the selective growth of Semiconductor Single-Walled Carbon Nanotubes
(S. Sakurai)

CT13: Imaging ultrafast carrier transport in carbon nanotube and nanowire transistors using femtosecond photocurrent microscopy (B. H. Son)

Poster Session 4 and Exhibition

CT14: Identifying dopants and catalytically active sites in nitrogen-doped carbon nanotubes (T. Susi)

I5: A decade of Carbon Nanotube Fibres: projections for the future (A. Windle)

Wednesday (June 4th)

K3: Carbon Nanotube Sorting via Molecular Interactions in Liquid Phases (M. Zheng)

I6: Strategic Functionalization of Nanomaterials for Potential Biomedical Applications (G. Pastorin)

CT15: Macroscale Superlubricity in Centimeters Long Perfect Double-walled Carbon Nanotubes under Ambient Conditions
(R. Zhang)

CT16: On the Nitrogen Doping Mechanism in Small Diameter Single Walled Carbon Nanotubes; Impact on Electronic Properties and Growth Selectivity
(H. R. B. Goltapehei)

Poster 5+6 Summary (C. Bichara)

Poster Session 5 and Exhibition

I7: Structure and Transport at Metal-Nanotube Contacts
(J. Tersoff)

I8: Detection and Spectroscopy of Individual Carbon Nanotubes dedicated to bio-imaging (L. Cognet)

CT17: Single-walled carbon nanotube growth from Pt catalysts by cold-wall ACCVD (T. Maruyama)

Poster Session 6 and Exhibition

CT18: Chirality dependence of the absorption cross-section of carbon nanotubes (J.-S. Lauret)

I9: Single Carbon Nanotube Devices for Integrated Photonics (Y. K. Kato)

Thursday (June 5th)

K4: Towards large-area monocrystalline graphene: Growth and observations (Y. H. Lee)

CT19: Chirality sorting of SWCNTs using gradient elution in gel column chromatography (H. Kataura)

CT20: Large thermoelectric power of highly concentrated semiconducting single-wall carbon nanotube film
(Y. Nakai)

CT21: Controlled Growth of Single-Walled Carbon Nanotubes and Application to CNT-Si Solar Cells
(S. Maruyama)

CT22: Waveguide-integrated light-emitting carbon nanotubes
(R. Krupke)

I10: Aligning organic dipolar molecules in carbon nanotubes for nonlinear optics (S. Cambré)

CT23: Full-length selective removal of metallic single-walled carbon nanotubes by organic film-assisted electrical breakdown
(K. Otsuka)

CT24: Tuning the Threshold Voltage of Carbon Nanotube Transistors by n-Type Molecular Doping for Robust and Flexible Complementary Circuits (H. Wang)

CT25: Relationship between Fe-Catalyzed Single-Walled Carbon Nanotubes and Fe Catalyst Nanoparticles (H. Jiang)

CT26: Near-band edge optical properties of h-BN: from bulk to nanolayers and nanotubes (A. Loiseau)

I11: Carbon Nanotube Computer: Transforming Scientific Discoveries into Working Systems
(M. Shulaker)

Excursion and Banquet

Friday (June 6th)

K5: Optical Spectroscopy of Individual Carbon Nanotubes
(F. Wang)

I12: Flexible Electronics Applications of Carbon Nanotube Thin films (Y. Ohno)

CT27: Nucleation of Graphene and its Conversion to Single Walled Carbon Nanotube revealed
(M. C. Picher)

CT28: Raman Enhancement Effect on Two-dimensional Layered Materials: graphene, h-BN and MoS₂
(X. Ling)

CT29: Thermodynamics of Quasi-Epitaxial Assembly of FMN around various (n, m)-SWNTs (F. Papadimitrakopoulos)

CT30: Distinguishing individual and ensemble carbon nanotubes by Raman spectroscopy
(A. Vierck)

Summary and Poster Awards

NT15 Preview

Closing

Poster Sessions

Monday (June 2nd)

Poster Sessions 1

T1: Coherent phonon spectra of G band in single wall carbon nanotubes (A. R. T. Nugraha)

T2: Quantum interference effect in Raman spectra of metallic nanotubes (E. H. Hasdeo)

T3: Spontaneous formation of O₈ clusters and chains within nanostructures (D. V. P. Massote)

T4: Wave propagation along coplanar transmission line covered with inkjet printed multi-walled carbon nanotubes network (I. Oueriemi)

T5: Phase diagram of Ni-C nanoparticles from computer simulation (Y. Magnin)

T6: Is exciton BEC possible in individual carbon nanotubes? A theoretical prospective (I. Bondarev)

T7: The influence of the curvature of surface and π electrons on adsorption of nanocarbons (T. Araki)

T8: Detection mechanisms in carbon-nanotube-based molecular sensors (Y. Li)

T9: Focusing of low energy electrons by Carbon Nanotubes (S. A. Hevia)

T10: Theoretical Limits to Suspended Graphene Varactors and Tunneling Relays (M. A. Ghany)

T11: Electronic properties of bilayer β -graphyne (M. Pacheco)

T12: Computational Modeling of Channel Length Modulation in Carbon Nanotube Field Effect Transistors (A. W. Bushmaker)

T13: Ab initio molecular dynamics study of bond dissociation mechanism of ethanol during carbon nanotube growth via CVD process (T. Oguri)

T14: Origins of carbon nanotube helicity and preference for (n,n-1) tubes (V. I. Artyukhov)

T15: SWCNT Growth from Organic Precursors Without a Catalyst: Possibilities and Limitations Revealed by Theoretical Simulations (H.-B. Li)

T16: Spontaneous origami in multi-phase 2D phosphorus (Z. Zhu)

T17: Polygonal nanotubes of multi-phase layered phosphorus (J. Guan)

T18: Adsorption of NH₃ and BH₃ on the Surface of Boron Nitride Nanotubes – A DFT Study (R. Sundaram)

Poster Session 2

C1: Giant nonlinear optical response from dye-filled carbon nanotube hybrids (J. Campo)

C2: S-SWNT interaction with microring resonators (A. Noury)

C3: Carbon nanotube integration strategies with silicon photonics (A. Noury)

C4: Radial Deformation of Single-Walled Carbon Nanotubes on Quartz Substrates and the Resultant Anomalous Diameter-Dependent Reaction Selectivity (J. Yang)

C5: Optical Properties of Single Chirality (5,4) SWCNTs (X. Wei)

C6: Strained graphene nanoribbons and hexagonal quantum rings under external magnetic fluxes (D. Faria)

C7: Ultrafast charge photogeneration and dynamics in semiconducting carbon nanotubes (G. Soavi)

C8: In-situ Observation on Wetting Behavior of Ionic Liquid on a Carbon Nanotube (K. Imadate)

C9: Photoconductivity spectroscopy of individual suspended carbon nanotubes (T. Uda)

C10: In-plane Conduction of Dense Carbon Nanotube Forest formed on Silicon Carbide (M. Inaba)

C11: Testing the pseudospin conjecture in carbon nanotubes: transport measurement to determine the scattering strength of charged impurity as a function of chirality (R. Tsuchikawa)

C12: Raman Spectroscopy coupled with environmental scanning transmission electron microscope (M. Picher)

C13: Chirality dependence of the absorption cross-section of carbon nanotubes (F. Vialla)

C14: Electron temperature dependence of the strength of the electron-phonon coupling in double wall carbon nanotubes (I. Chatzakis)

C15: Identifying dopants and catalytically active sites in nitrogen-doped carbon nanotubes (T. Susi)

C16: Observation of Upconversion Photoluminescence from Carbon Nanotubes (Y. Miyauchi)

C17: Tensile Strength of CNT Fibres: Characteristic Length, Stress Transfer and other Impact Factors
(T. S. Gspann)

C18: Experimentally Determined Electronic States of Oxygen-doped Single-walled Carbon Nanotubes
(T. Shiraishi)

C19: Imaging ultrafast carrier transport in carbon nanotube and nanowire transistors using femtosecond photocurrent microscopy
(B. H. Son)

C20: Determining the Progression of CNT Sheet Deformation with Wide Angle X-Ray Diffraction
(J. Severino)

C21: Exciton diffusion and related decay processes in individual air-suspended carbon nanotubes
(A. Ishii)

C22: Spontaneous Exciton Dissociation and Stark Effect in Carbon Nanotubes (M. Yoshida)

C24: Optoelectronics with Metallic Carbon Nanotube pn-Devices (M. Amer)

C25: Double-resonance Raman scattering of iTO and LA phonons in carbon nanotubes (C. Tyborski)

C26: Single-wall carbon nanotube films filled with acceptor molecules for transparent electrodes (E. D. Obraztsova)

C27: Electron Tomography for Quantitative 3-Dimensional Characterization of Carbon Nanotube Composites (B. Natarajan)

C28: SWNT vs MWNT. Comparative study of electrical properties in composites and transparent films
(M. Pedtechenskiy)

C29: Slip inhibition between graphenes by de-fluorination of fluorinated multi-walled carbon nanotubes
(H. Nishizaka)

C30: Microsecond-Resolution Single-Molecule Dynamic Sensing (M. V. Akhterov)

C31: Highly thermal conductive CNT/carbon fiber/polymer Composite for thermal interface material
(S. Ata)

C32: Photocurrent microscopy reveals chiral index fingerprint and thermoelectric power of CNT FETs
(L. Aspirtate)

C33: Electronic Dissipation in Single-Walled Carbon Nanotubes Imaged by Kelvin Probe Force Microscopy
(E. J. Fuller)

C34: Distinguishing individual and ensemble carbon nanotubes by Raman spectroscopy (A. Vierck)

C35: Using Image force microscopy to visualize optical absorption in individual single walled carbon nanotubes
(D. Nowak)

Tuesday (June 3rd)

Poster Session 3

S1: Single-walled carbon nanotube ink for large area transparent conducting films by rod-coating method

(Y. Meng)

S2: A simple method for purifying metallic impurities from Multi-walled Carbon Nanotubes by Chloroform Treatment (C. J. Lim)

S3: Substituent Effect of Small Aromatic Solubilizers on Selective Separation of Single-Walled Carbon Nanotubes (M. Fukuzawa)

S4: Structure separation of metallic SWCNTs using gel column chromatography (T. Tanaka)

S5: Full-length selective removal of metallic single-walled carbon nanotubes by organic film-assisted electrical breakdown (K. Otsuka)

S6: Effect of Temperature on The Selection of Semiconducting Single Walled Carbon Nanotubes using Poly(3-dodecylthiophene-2,5-diyl)

(W. Gomulya)

S7: The effect of DNA adsorption on optical transition in mono-dispersed single-walled carbon nanotube

(M. Ito)

S8: Thermodynamics of Quasi-Epitaxial Assembly of FMN around various (n,m)-SWNTs (F. Papadimitrakopoulos)

S9: In situ characterization of DGU separation by full 2D fluorescence-excitation and resonant Raman spectroscopy in the centrifuge tube (S. Cambré)

S10: The functionalization of multi-walled carbon nanotubes and carbon materials for application in gas separation and gas sensors (J. A. A. Gibson)

S11: Single chirality desorption of single-wall carbon nanotubes using mixed surfactant gel chromatography

(Y. Yomogida)

S12: Chirality sorting of SWCNTs using gradient elution in gel column chromatography (H. Kataura)

Poster Session 4

M1: Designer stabilizer for preparation of pristine graphene/polysiloxane films and networks (D. Parviz)

M2: High-performance carbon nanotubes reinforced aluminum matrix composites fabricated by friction stir processing and rolling (Z. Y. Ma)

M3: Pristine Graphene/Polymer Hydrogel and Aerogel Structures (F. Irin)

M4: Large Area Electrospinning of Carbon Nanotubes for Advanced Composite Materials (S. G. King)

M5: Preparation of Graphene wrapped LiFePO₄/C nanocomposites by Mild Solution Synthesis for Lithium Ion Batteries (M. Liu)

M6: Porous Micro-spherical LiFePO₄/Graphene Nanocomposites with High Tap Density for High-performance Li-Ion Battery Cathode Materials (S. Gao)

M7: Epoxy composites with aligned assemblies of carbon nanotubes and high-performance carbon nanotubes fibres (A. Mikhalechyan)

M8: Preparation of Single-Walled Carbon Nanotube/Ultrathin Cross-Linked Polymer Hybrids for Biomedical Applications and their Functionalization (Y. Tsutsumi)

M9: Backside fluorine-functionalized graphene for gas detection (M. Katkov)

M10: Large Area Graphene Ion Sensitive Field Effect Transistors with Tantalum Pentoxide Sensing Layers for pH Measurement (I. Fakih)

M11: Impedance Spectroscopy of Epoxy Matrix Nanocomposites Reinforced with Graphene Nanoplatelets (S. H. Pezzin)

M12: Preparation and characterization of epoxy/graphene nanocomposite (G. Li)

M13: Bulk Direct Band Gap MoS₂ by Plasma Induced Layer Decoupling (R. Dhall)

M14: Covalent and non-covalent functionalization of graphene by dip-pen nanolithography (A. Vijayaraghavan)

M15: Graphenylene-based nanotubes (A. T. Koch)

M16: Carbon Nanospheres/Silicon/Alumina Hollow Structure as Anode for Lithium-Ion Batteries

(B. Li)

M17: 2-D Solid State Hydrogen Molecules in Layered Structure Potassium Intercalated GO (T. H. Lee)

M18: Chemical Route for Graphite Nanoplatelets (Y. Demkiw)

M19: Carbon nanotube/polyaniline nanocomposites applied as gas sensor device for NH₃ (M. Eising)

M20: Near-band edge optical properties of h-BN: from bulk to nanolayers and nanotubes (A. Loiseau)

M21: 2-D hybrids of graphene and single-walled carbon nanotube (R. Wang)

M22: Electrical properties and crystallization behavior of poly(ethylene terephthalate)/multiwall carbon nanotube nanocomposites (C. Ding)

M23: Raman Enhancement Effect on Two-dimensional Layered Materials: graphene, h-BN and MoS₂ (X. Ling)

M24: Polystyrene - Poly(3-thiophene acetic acid)/MWCNT Composite Fibers by Electrospinning for Actuator Devices (C. M. Ibañez)

M25: Effect of Different Carbon Nanostructures as Reinforcements on the Performance of Polyaniline Actuators (J. C. Garcia-Gallegos)

M26: Supercompressible Porous Foam Network made of Single-Walled Carbon Nanotubes coated with Graphene (Y. Oh)

M27: Scalable synthesis of hierarchically structured carbon nanotube-graphene fibers for capacitive energy storage (Y. Chen)

M28: Preparation of highly active nitrogen-doped few-layer graphene/carbon nanotube composite electrocatalyst for oxygen reduction reaction in alkaline media (S. Ratso)

M29: Photoluminescence study of tungsten disulfide grain boundaries (T. Kato)

M30: Transition metal dichalcogenide film transistors (T. Takenobu)

M31: Growth and functionalization of layered transition metal dichalcogenides by controllable mild plasma treatment (T. Takahashi)

M32: Copper-coated Nanotubes at the Single Nanotube Scale (D. Pan)

M33: Lysosomal membrane permeabilization induced by carbon nanohorns caused reactive oxygen species generation and apoptosis in RAW264.7 cell
(M. Yang)

M34: Effects of plasma on growth of suspended graphene nanoribbon from nickel nanobar under rapid heating plasma CVD (H. Suzuki)

M35: Industrialization of Boron Nitride Nanotubes: From Synthesis to Applications (K. S. Kim)

M36: Synthesis, Raman Spectroscopy Studies and Photoluminescence Edge Enhancement on Monolayered WS₂ (H. R. Gutierrez)

M37: Thermodynamically favorable dissolution of graphene via intercalation of graphite (P.L. Cullen)

Wednesday (June 4th)

Poster Session 5

D1: Tuning the Threshold Voltage of Carbon Nanotube Transistors by n-Type Molecular Doping for Robust and Flexible Complementary Circuits (H. Wang)

D2: Novel hierarchical nanostructure based on nitrogen doped carbon nanotubes and maghemite for electrochemical water oxidation (T. Sharifi)

D3: High Bias Characteristics of Individual, Suspended Carbon Nanotube p-n Junction Photodiodes (S. Chang)

D4: Giant Circular Dichroism in Individual Carbon Nanotubes Induced by Extrinsic Chirality (Y.K. Kato)

D5: Large thermoelectric power of highly concentrated semiconducting single-wall carbon nanotube film (Y. Nakai)

D6: Macroscale Superlubricity in Centimeters Long Perfect Double-walled Carbon Nanotubes under Ambient Conditions (R. Zhang)

D7: Hierarchical Nanostructured Carbon/Sulfur Hybrid Cathode for High-Performance Lithium-Sulfur Battery (H. Peng)

D8: Single-Walled Carbon Nanotube Networks for Ethanol Vapor Sensing Application (A. Nasibulin)

D9: Carbon nanotube graphene hybrid film and its thermionic emission (X. Lin)

D10: Robust Transistor of Single Wall Carbon Nanotube in a Network Structure, Rubber Materials and Gel (A. Sekiguchi)

D11: Waveguide-integrated light-emitting carbon nanotubes (R. Krupke)

D12: High uniformity networks of individual SWCNTs for thin film transistors from a novel floating catalyst reactor (A. Kaskela)

D13: Thin film electronics based on direct deposition of aerosol-synthesized SWCNTs (P. Laiho)

D14: Carbon nanotubes network for 10⁸ on/off ratio field effect transistors (V. Derenskiy)

D15: Characterization of Dye-Sensitized Solar Cells with Counter Electrode made of Single-Walled Carbon Nanotubes (T. Chiba)

D16: Microfluidic Device with Carbon Nanotube Channel Walls for Blood Plasma Extraction (Y. Yeh)

D17: Highly Conductive CNT Thin Films for Organic Solar Cells (A. CATHELINE)

D18: SWNT Transparent Conductive Thin Films from SEERe- Nanotubide Inks (S. Fogden)

D19: Carbon nanotube sponge as electrochemical capacitor electrodes capturing any capacitive particles (K. Hasegawa)

D20: Thermoacoustic Chips with Carbon Nanotube Thin Yarn Arrays (Y. Wei)

D21: Sub-10 μm top-gate carbon nanotube thin-film transistors based on high-speed flexographic printing process (M. Maeda)

D22: Light emission and detection with carbon nanotubes (L. Peng)

D23: Carbon Nanotube Thin Film Transistors for Printed Electronics (K. Ojanperä)

D24: Using Nanotube Transistors for Single-Molecule Studies of DNA Polymerase I (O. Tolga Gul)

D25: LCNDs : Photonic Functionalization of MWCNT Towards Light Conversion Nanostructured Devices (E. Cavalcanti Rodrigues Vaz)

D26: Thermoelectric devices based on sandwiched carbon nanotube forests and the effect of contact electrodes (Harrison D. E. Fan)

D27: Application of Nanoparticle Antioxidants to Enable Hyperstable Chloroplasts for Solar Energy Harvesting (Ardemis Anoush Boghossian)

Poster Session 6

G1: Growth of Half-Meter Long Carbon Nanotubes Based on Schulz-Flory Distribution (R. Zhang)

G2: On the Nitrogen Doping Mechanism in Small Diameter Single Walled Carbon Nanotubes; Impact on Electronic Properties and Growth Selectivity (H. BarzegarGoltapehei)

G3: Loading of Metal Nanoparticle on Oxidation-free Carbon Nanotubes for Fuel Cell Application and their Durability (T. Fujigaya)

G4: Fluidized Bed CVD of Submillimeter-Long Carbon Nanotubes Using an Internal Heat-Exchange Reactor (Z. Chen)

- G5:** Quality Control of Electric Arc Single-Walled Carbon Nanotubes (E. Bekyarova)
- G6:** Fabrication of carbon nanotube nanogap electrodes by helium-ion sputtering for molecular contacts (C. Thiele)
- G7:** Advances in bottom-up assembly of carbon nanotubes and graphene devices (A. Oikonomou)
- G8:** Controlled Growth of Single-Walled Carbon Nanotubes and Application to CNT-Si Solar Cells (S. Maruyama)
- G9:** Automated carbon nanotube synthesis by water-assisted CVD (P. Nikolaev)
- G10:** Simple and scalable aligned nanotube films (D. Tune)
- G11:** Hybrid Carbon Source for Single-Walled Carbon Nanotube Synthesis by Aerosol CVD Method (Ilya V. Anoshkin)
- G12:** Fabrication and Characterization of Nitrogen-Induced Single-Walled Carbon Nanotubes Field-Effect Transistors (S. Kim)
- G13:** Synthesis of semiconducting single-wall carbon nanotubes by hydrogen etching (W. Li)
- G14:** Growth of Single-walled Carbon Nanotubes from Opened Edges of Carbon Nanotubes (S. Chiashi)
- G15:** Synthesis and application of carbon nanocones as CNT substitutes for electron emission and AFM probes (M. Delmas)
- G16:** Catalyst control for the selective growth of Semiconductor Single-Walled Carbon Nanotubes (S. Sakurai)
- G17:** In situ observation of carbon nanotube re-growth by scanning electron microscopy (H. Wang)
- G18:** Direct Growth of High-Density Carbon Nanotube Arrays on Copper foils toward Thermal Interface Materials (N. Na)
- G19:** Single-walled carbon nanotube growth from Pt catalysts by cold-wall ACCVD (T. Maruyama)
- G20:** Preparation and Properties of PVDF membrane filled with carbon nanotubes (W. Wang)
- G21:** Laser annealing of single-wall carbon nanotubes (Nicolas Souza Carmona)

Satellite Symposia Program Schedules

	CCTN14	MSIN14	CNTFA14	GSS14
Location	EEB 132	SLH 100	SLH 102	SLH 100
Time	June 1	June 1	June 1	June 7
9:00	I1: Jerry Tersoff	K1: J Kono	K1: Mark Hersam	K1: A. Castro Neto
9:15				
9:30				
9:45	I2: Jerry Bernholc	I1: A. Balandin	I1: Yuan Chen	I1: K. Tsugakoshi
10:00		CT1: Subbaiyan	CT1: Bilu Liu	CT1: Artyukhov
10:15				
10:30	(Coffee) Break	(Coffee) Break	(Coffee) Break	(Coffee) Break
10:45				
11:00	CT1: Vasilii Artyukhov	I2: H. Wang	I2: Jie Liu	I2: Wenjuan Zhu
11:15				
11:30	CT2: Andrew T. Koch	CT2: A. Ishii	I3: Fei Wei	CT2: M.
11:45		CT3: P. Finnie		CT3: N. Perea
12:00	CT3: Zhen Zhu	I3: R. Bruce Weisman	I4: Andrea Ferrari	I3: A. Balandin
12:15				
12:30	CT4: Jie Guan	CT4: J. Campo	CT2: A Sekiguchi	CT4: H-B. Li
12:45		CT5: T. Uda	CT3: M Maeda	CT5: N. Clark
13:00				
13:15	Lunch	Lunch	Lunch	Lunch
13:30				
13:45				
14:00	I3: Young-Woo Son	I4: Stefan Strauf	I5: Ali Javey	K2: J. Hone
14:15		CT6: Yomogida	I6: Lianmao Peng	
14:30		CT7: Yoshida		
14:45	I4: Igor Bondarev	I5: S. Maruyama	I7: T Takenobu	I4: F. Withers
15:00				CT6:
15:15				
15:30	(Coffee) Break	(Coffee) Break	(Coffee) Break	(Coffee) Break
15:45				
16:00	CT5: Takumi Araki	I6: R. Dhall	I8: Qingwen Li	I5: M. Blee
16:15				
16:30	CT6: Hai-Bei Li	CT8: A. Loiseau	I9: A Nasibulin	CT7: T. Susi
16:45		I7: T. Saito		CT8: I. Fakih
17:00	I5: Toma Susi		I10: KL Jiang	CT9: M. Katkov
17:15		I8: Y. Miyauchi		I6: H-M. Cheng
17:30			CT4: Obraztsova	
17:45	Closing remarks	Closing remarks	Closing remarks	Closing remarks
18:00-20:00	Welcome Reception	Welcome Reception	Welcome Reception	