9th Albany Nanotechnology Symposium Program
South Auditorium, SUNY Polytechnic Institute

257 Fuller Rd, Albany NY - 12203
Wednesday, Nov 11th, 2015 (9:00 AM – 5:00 PM)

General information
Please check in at the South auditorium rotunda as soon as you arrive. During the conference you can access the CNSE guest wireless using:
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Please see Pg 7 for the site map/parking information.

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Keynote Address (10:00 – 11:00 AM)

David Lubensky
IBM Distinguished Researcher, Director of the Center for mobile enterprise research

Abstract
Technological shifts driven by Big Data, mobility, security and cloud computing are rapidly transforming business and society. The Apple-IBM partnership is developing 100 transformational mobile apps for many industries
IBM is fulfilling the promise of the landmark partnership we announced with Apple in 2014. This is the advent of mobile for serious business. And when we bring a consumer-quality experience to business professionals, in combination with analytics, security, and integration with legacy data, in ways that exploit native capabilities like iBeacon, FaceTime, a microphone, GPS or mapping -- we are unlocking new value for business. Research established a Center for Mobile Enterprise Research in support of Apple-IBM partnership. We've contributed to development of more than 30 applications, including several that were born in Research. We're creating analytics solutions on top of Mobile apps to quickly show value and accelerate commercialization. We're exploring drones in agriculture, and re-imagining hospital of the future using state of the art technologies powered by mobile, wearables, IOT, cognitive, and secure cloud computing.

Speaker Bio: Since 1995, David has been with IBM T.J. Watson Research Center. His research topics at IBM have been in speech recognition, machine translation, natural language processing, mobile, wearables, drones, IOT and emerging hospital of the future solutions. He led the first deployment of the NLP-based financial trading solution with a banking client. He was the PI and managed a large WW team responsible for commercialization of Real Time Translation technologies which resulted in the first pervasive deployment of machine translation inside the global enterprise (a.k.a. n.Fluent). In the Mobile area, Mr. Lubensky established a Center for Mobile Enterprise Research (CMER) in support of Apple partnership. His global team specializes in mobile healthcare, security, and cognitive and has a proven track record deploying solutions with commercial and government clients. He is a Member of the IBM Academy of Technology, and the recipient of numerous IBM Invention and Outstanding Technical Achievement Awards. David Lubensky holds more than 50 issued and filed patents.

PROGRAM

8:30-9:00 AM	**Welcome, Check-in & Poster setup**
9:00-10:00 AM	**Closed poster session - Presenters & Judges only**
10:00-10:15 AM	**Welcome: Nicole Saulnier, Chair ANTS-2015 & Mukesh Khare, VP Semiconductor Technology Research, IBM**
10:00-11:00 AM	**Keynote Address - *The Apple-IBM Ecosystem*** **David Lubensky, IBM Distinguished Researcher, Director of the Center for Mobile Enterprise Research (Abstract & Bio : Pg 5)**
11:15-12:30 PM	**Session I - Lightning talks**
11:15-11:20 AM	Zhigang Song, Sweta Pendyala, Laura Safran, Weihao Weng, Jinghong Li, Steve Lucarini, David Clark, Brett Engel, Amanda Tessier and Yandong Liu. "**Failure Analysis and Characterization of TS TiN Extrusion in 14HP SAIL"**
11:22-11:27 AM	Devika Sil. **"Surfactant Free Synthesis of Plasmonic Nanoparticles and Their Application in Optical Detection of Simple Molecules" (*Student)***
11:29-11:34 AM	Tim Brunner. **"Patterned Wafer Geometry(PWG) metrology for improving process-induced overlay and focus problems"**
11:36-11:41 AM	Josh Holt, J. Yang-Scharlotta and Nathaniel Cady. **"Radiation Testing of Tantalum Oxide-based Resistive Memory" (*Student)***
11:43-11:48 AM	Kafai Lai, Chi-Chun Liu, Hsinyu Tsai, Yongan Xu, Cheng Chi, Ananthan Raghunathan, Parul Dhagat, Gazi Huda, Jaime Morillo, Brent Goplen, Krisitn Schmidt, Jed Pitera, Markus Brink, Michael Guillorn, Daniel Sanders, Nelson Felix, Todd Bailey and Matthew Colburn. **"Where are we in Design-Technology Co-Optimization (DTCO) for Directed Self-Assembly (DSA) based Lithography?"**
11:50-11:55 AM	Adarsh Basavalingappa, Michael Hargrove, Mihir Upadhyaya, Vibhu Jindal, David Fried and Gregory Denbeaux. **"Extreme Ultraviolet Mask Blank Defect Evolution Study with SEMulator3D™" (*Student)***
11:57-12:02 AM	Franco Stellari, Keith Jenkins, Alan Weger, Barry Linder and Peilin Song. **"Self-Heating Characterization of SOI FinFETs using 2D Time Resolved Emission"**
12:04-12:09 PM	Steven Grzeskowiak, Amrit Narasimhan, Jonathon Schad, Mark Neisser, Leonidas Ocola, Robert Brainard and Gregory Denbeaux. **"Cross sections of EUV PAGs: Influence of Molecular Structure" (*Student)***
12:11-12:16 PM	Luciana Meli, Scott Halle, Robert Delancey, Kaushik Vemareddy, Gary Crispo, Ravi Bonam, Martin Burkhardt and Daniel Corliss. **"Toward Defect Guard-Banding of EUV Exposures by Full Chip Optical Wafer Inspection of EUV Mask Defect Adders"**
12:18-12:23 PM	Juntao Li, Pierre Morin, Kangguo Cheng, Fred Allibert, Nicolas Loubet, Hong He, Gauri Karve, Junli Wang, Bruce Doris and John Gaudiello. **"Elastic Relaxation of Intrinsically Strained Fins: Nanobeam Diffraction (NBD) and Simulation Studies"**
12:25-12:30 PM	Liam Wisehart, Amrit Narasimhan, Steven Grzeskowiak, Mark Neisser, Leonidas Ocola, Gregory Denbeaux and Robert Brainard. **"Modeling of Energy Deposition and Charging in EUV Lithography" (*Student)***
	Brown Bag Lunch
1:30-3:00 PM	**Session II - Lightning talks**
1:30-1:35 PM	Joshua Rubin, Kevin Winstel, Alex Hubbard, Cody Murray, Kisup Chung, James Kelly, Babar Khan, Arvind Kumar and Vamsi Paruchuri. **"Essential Edge Protection Techniques for Successful Multi-Wafer Stacking"**
1:37-1:42 PM	Brian Mcgowan and James Lloyd. **"Decay of magnetoresistance in a low-k dielectric subjected to bias temperature stress: A novel methodology of measuring the kinetics of degradation." (*Student)***
1:44-1:49 PM	Luc Belanger, Luc Guerin and Christian Bergeron. **"Large Die 3D Stacking with Thermal Compression Bonding at IBM Bromont site (Quebec - Canada)"**
1:51-1:56 PM	Raj Jana. "**Piezoelectric Gated Steep Transistors"**
1:58-2:03 PM	Zhenjun Zhang. **"Impact of hydrogen annealing on nickel graphene junction" (*Student)***
2:05-2:10 PM	Dongbing Shao, Larry Clevenger and Robert Wong. **" Integrated Layout based monte-carlo simulation for dense design scaling"**
2:12-2:17 PM	Adarsh Basavalingappa and James Lloyd. **"Copper Anisotropy: Impact on Electromigration" (*Student)***

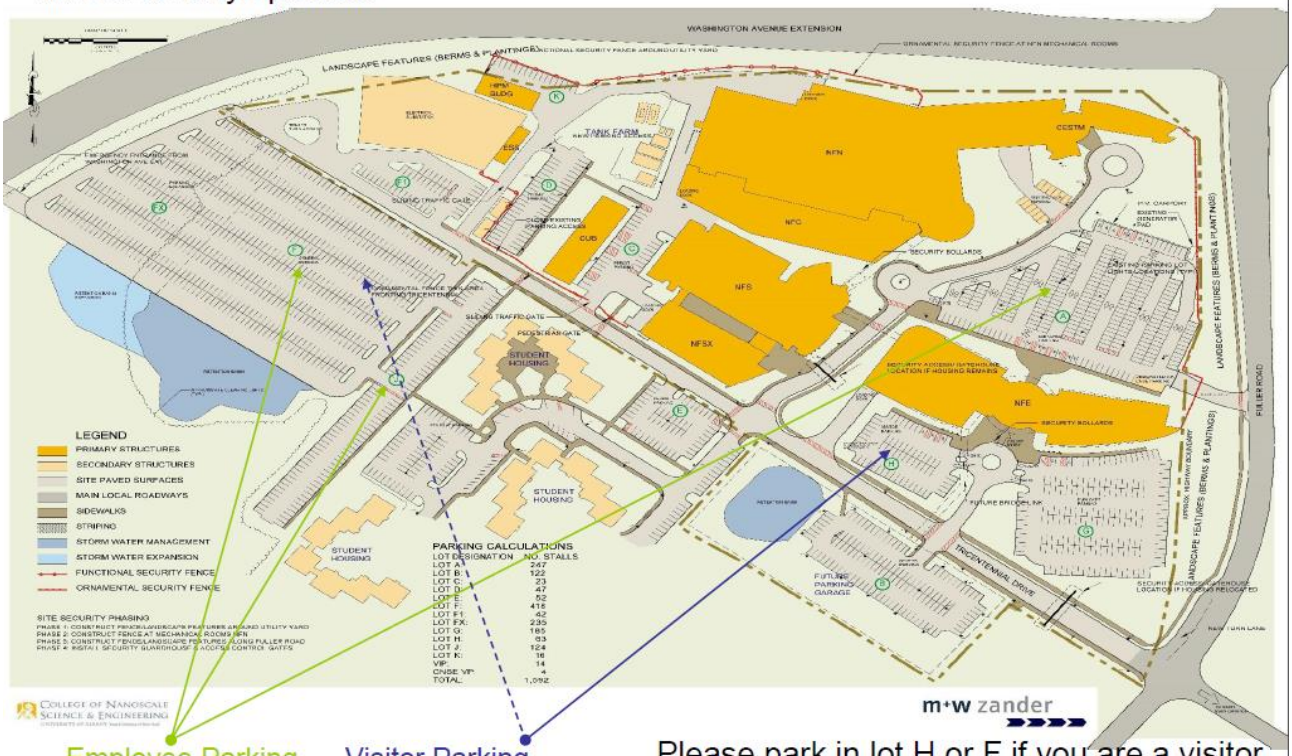
2:19-2:24 PM	Sravan Kumar Sunkoju, Sandra Schujman, Jonathan Mann, John Wax, David Metacarpa and Pradeep Haldar. **"Optical Monitoring System for CIGS deposition techniques" (*Student)***
2:26-2:31 PM	Katherine Dropiewski, Vadim Tokranov, Michael Yakimov, Steven Bentley, Rohit Galatage, Ajey Jacob and Serge Oktyabrsky. **"III-Sb Nanowires on Si: a Path Towards Scalable CMOS" (*Student)***
2:33-2:38 PM	Na Cai, Xuefeng Zeng, Kevin Wu, Ho Young Song and Weihong Gao. "**Automated klarf-based defect inspection by electron-beam inspection tool: a novel approach to inline monitoring and/or process change validation" (*Student)***
2:40-2:45 PM	Karsten Beckmann and Nathaniel C. Cady. **"Endurance and random telegraph noise in ReRAM devices based on amorphous and crystalline hafnia"**
2:47-2:52 PM	Wen Pin Peng, Min-Hwa Chi and Garo Derderian. **"Elimination of Tungsten-Voids in Middle-of-line Contacts for Advanced CMOS and FinFET Technology"**
3:00-4:30 PM	**Public Poster Session**
1	Larry Clevenger. Challenges in Present and Future BEOL (Back End of Line) Technologies
4	Dongbing Shao, Larry Clevenger and Robert Wong. Integrated Layout based monte-carlo simulation for dense design scaling
5	Dong-Ick Lee, Jiang Liu and Ivan Chakarov. 10nm FINFET Process Simulation Development
6	Na Cai, Xuefeng Zeng, Kevin Wu, Ho Young Song and Weihong Gao. Automated klarf-based defect inspection by electron-beam inspection tool: a novel approach to inline monitoring and/or process change validation
7	Young Ki Kim, Yen-Jen Chen, Xueli Hao and Phillip Tatti. Focus control enhancement and focus response analysis methodology on product
8	Juntao Li, Pierre Morin, Kangguo Cheng, Fred Allibert, Nicolas Loubet, Hong He, Gauri Karve, Junli Wang, Bruce Doris and John Gaudiello. Elastic Relaxation of Intrinsically Strained Fins: Nanobeam Diffraction (NBD) and Simulation Studies
9	Ning Lu and Richard Wachnik. Modeling of Resistance in FinFET Local Interconnect
10	Franco Stellari, Keith Jenkins, Alan Weger, Barry Linder and Peilin Song. Self-Heating Characterization of SOI FinFETs using 2D Time Resolved Emission
11	Jung Yoon and Enri Marini. 3D NAND Technology - Implications to Enterprise Storage Applications
12-Student	Brian Mcgowan and James Lloyd. Decay of magnetoresistance in a low-k dielectric subjected to bias temperature stress: A novel methodology of measuring the kinetics of degradation.
13-Student	Liam Wisehart, Amrit Narasimhan, Steven Grzeskowiak, Mark Neisser, Leonidas Ocola, Gregory Denbeaux and Robert Brainard. Modeling of Energy Deposition and Charging in EUV Lithography
14-Student	Steven Grzeskowiak, Amrit Narasimhan, Jonathon Schad, Mark Neisser, Leonidas Ocola, Robert Brainard and Gregory Denbeaux. Cross sections of EUV PAGs: Influence of Molecular Structure
15	Fred Stevie, Chuanzhen Zhou, Marinus Hopstaken, Zhichun Zhang, Zhengmao Zhu and Andrew Turansky. SIMS Measurement of Hydrogen Detection Limit: Comparison of Different SIMS Instrumentation
16	Jiseok Kim, Byounghak Lee, Yumi Park, Murali Kota and Francis Benistant. ab-initio study on Schottky-barrier modulation in NiSi2/Si interface
17	Ajay Kumar Kambham, Daniel Flatoff and Paul Van Der Heide. Atomic Scale Characterization of 3D Semiconductor Structures by Atom Probe Tomography
18	Purushothaman Srinivasan. SiGe pFETs for 10nm: A FEOL Reliability perspective
19	Terence Kane. Identification and Characterization of 7nm Lithography Defects
20	Tim Brunner. Patterned Wafer Geometry(PWG) metrology for improving process-induced overlay and focus problems
21	Weihao Weng, Yun Yu Wang, Frieder Baumann, Michael Gribelyuk, David Cooper, Alexandre Pofelski and Laurent Grenouillet. Nanoscale strain measurements in TEM for electron devices: dual lens dark field electron holography, high angle annular dark field scanning transmission electron microscopy and nano-beam electron diffraction
22	Matthew Shoudy, Brock Mendoza, Paul Hall, Thomas Haigh, Joe Connors, Donna Boyles and Jean Wynne. BEOL PE CVD Low Temperature Silane Oxide Defect Improvement

23	Zhigang Song, Sweta Pendyala, Laura Safran, Weihao Weng, Jinghong Li, Steve Lucarini, David Clark, Brett Engel, Amanda Tessier and Yandong Liu. Failure Analysis and Characterization of TS TiN Extrusion in 14HP SAIL
24-Student	Zhenjun Zhang. Impact of hydrogen annealing on nickel graphene junction
25	Son Nguyen, Tuan Vo, Thomas Haigh Jr, Deepika Privadarshini, Takeshi Nogami, Stephan Cohen, Hosadurga Shobha, Alfred Grill, Donald Canaperi, Roy Gordon and Y Au. Selective manganese deposition for Cu_low k nano device interconnect
26	Wen Pin Peng, Min-Hwa Chi and Garo Derderian. Elimination of Tungsten-Voids in Middle-of-line Contacts for Advanced CMOS and FinFET Technology
27	Wen Pin Peng, Min-Hwa Chi and Yang Zhang. Reduction of “Dark-Gate” defects in Replacement-Metal-Gate process and Middle-of-line contacts for advanced CMOS technology
28	Raj Jana. Piezoelectric Gated Steep Transistors
29	Paul Fortier, Tymon Barwicz, Nicolas Boyer, Alexander Janta-Polczynski, Yochi Taira, Ted Lichoulas, Eddie Kimbrell, Hidetoshi Numata, Shotaro Takenobu, Yan Thibodeau, Swetha Kamlapurkar and Sebastian Engelmann. Optical interconnect packaging for silicon photonic devices using an existing microelectronic assembly infrastructure
30-Student	Adarsh Basavalingappa and James Lloyd. Copper Anisotropy: Impact on Electromigration
31-Student	Adarsh Basavalingappa, Michael Hargrove, Mihir Upadhyaya, Vibhu Jindal, David Fried and Gregory Denbeaux. Extreme Ultraviolet Mask Blank Defect Evolution Study with SEMulator3D™
32	Luc Belanger, Luc Guerin and Christian Bergeron. Large Die 3D Stacking with Thermal Compression Bonding at IBM Bromont site (Quebec - Canada)
33	Luciana Meli, Scott Halle, Robert Delancey, Kaushik Vemareddy, Gary Crispo, Ravi Bonam, Martin Burkhardt and Daniel Corliss. Toward Defect Guard-Banding of EUV Exposures by Full Chip Optical Wafer Inspection of EUV Mask Defect Adders
34	Hong Jin Kim, Tae Hoon Lee and Venugopal Govindarajulu. Nano-sized ceria particle synthesis, characterization and challenges for nanoscale scratch-free chemical mechanical polishing (CMP) process
35-Student	Sravan Kumar Sunkoju, Sandra Schujman, Jonathan Mann, John Wax, David Metacarpa and Pradeep Haldar. Optical Monitoring System for CIGS deposition techniques
37	Yue Zhou, Timothy Brunner, Donald Wall, Deneil Park, Karsten Gutjahr and Richard McGowan. False topography prevention of Patterned Wafer Geometry(PWG) metrology
40	Justin Long. GCIB-LSP Etching for WiW Gate Height Control
41	Huan Hu. 3D Additive Printing With a Heated AFM Tip For Nanodevice Fabrication
42	Liqiao Qin, Sipeng Gu, Ja-Hyung Han, Hon Jin Kim, Dinesh Koli and Adam Lawyer. The Polishing Performance Study of SiCN
43	Shogo Mochizuki, Rainer Loesing, Yun Yu Wang and Hemanth Jagannathan. A Study of Si:CP films through in-situ doped Si epitaxy and implantation process for n-type metal-oxide-semiconductor devices
44	Shesh Mani Pandey. FinFETs Performance Optimization - Junction slope and Fin Slope Relationship
45	You Li, Rahul Mishra and Robert Gauthier. Design and Optimization of ESD Lateral NPN Device in 14nm FinFET SOI CMOS Technology
46-Student	Katherine Dropiewski, Vadim Tokranov, Michael Yakimov, Steven Bentley, Rohit Galatage, Ajey Jacob and Serge Oktyabrsky. III-Sb Nanowires on Si: a Path Towards Scalable CMOS
47	Mohammad Hasanuzzaman and Hasan Nayfeh. TCAD Analysis on the Role of Silicide Contact Shape on pFET Ron in 14nm SOI FinFET Technology
48	Qun Gao, Mohammad Hasanuzzaman, Kai Zhao, Robert Robinson and Stephen Furkay. Impact of EG residue and gate ledge clean on 14nm SOI FinFET device performance
49-Student	Devika Sil. Surfactant Free Synthesis of Plasmonic Nanoparticles and Their Application in Optical Detection of Simple Molecules
50	Kafai Lai, Chi-Chun Liu, Hsinyu Tsai, Yongan Xu, Cheng Chi, Ananthan Raghunathan, Parul Dhagat, Gazi Huda, Jaime Morillo, Brent Goplen, Krisitn Schmidt, Jed Pitera, Markus Brink, Michael Guillorn, Daniel Sanders, Nelson Felix, Todd Bailey and Matthew Colburn. Where are we in Design-Technology Co-Optimization (DTCO) for Directed Self-Assembly (DSA) based Lithography?

51	Joshua Rubin, Kevin Winstel, Alex Hubbard, Cody Murray, Kisup Chung, James Kelly, Babar Khan, Arvind Kumar and Vamsi Paruchuri. Essential Edge Protection Techniques for Successful Multi-Wafer Stacking
52	Yongsik Moon, Liqiao Qin, Dinesh Koli and Cliff Snow. Location Specific Gas Cluster Ion Beam (GCIB) for Advanced CMOS Logic Technology
53	Christina Turley, Jed Rankin, Louis Kindt, Masayuki Kagawa, Takeshi Isogawa and Zhengqing John Qi. EUV Mask Black Border Evolution: Part II
54	Kai Sun, Thomas Mitchell and Abbas Guvenilir. Identifying key design rules in advanced semiconductor technologies
55-Student	Josh Holt, J. Yang-Scharlotta and Nathaniel Cady. Radiation Testing of Tantalum Oxide-based Resistive Memory
56	Bianzhu Fu, Michael Gribelyuk, Robert Scott, Esther Chen, Jeffrey Riendeau and Jeremy Russell. The influence of beam convergence angle on channeling effect during STEM/EDS quantification of SiGe concentration
57-Student	Karsten Beckmann and Nathaniel C. Cady. Endurance and random telegraph noise in ReRAM devices based on amorphous and crystalline hafnia
58	Robert Bruce, Takefumi Suzuki, Joe Lee, Eric Joseph, Sebastian Engelmann, Azumi Itou, Mark Nakamura, Goh Matsuura, John Arnold and Eric Sikorski. Pushing the Limits of Dielectric Etch with Novel Fluorocarbon Etch Gases
59	Yongan Xu, Tom Faure, Ramya Viswanathan, Granger Lobb, Richard Wistrom, Sean Burns, Lin Hu, Ioana Graur, Ben Bleiman, Dan Fischer, Yann Mignot, Yoshifumi Sakamoto, Yusuke Toda, John Bolton, Todd Bailey , Nelson Felix, John Arnold, Matthew Colburn. Lithographic Qualification of High Transmission Mask Blank for 10nm Node and Beyond
4:00-5:00 PM	**Awards**

Map of the College of NanoScale Science and Engineering

ANTS 2015 symposium



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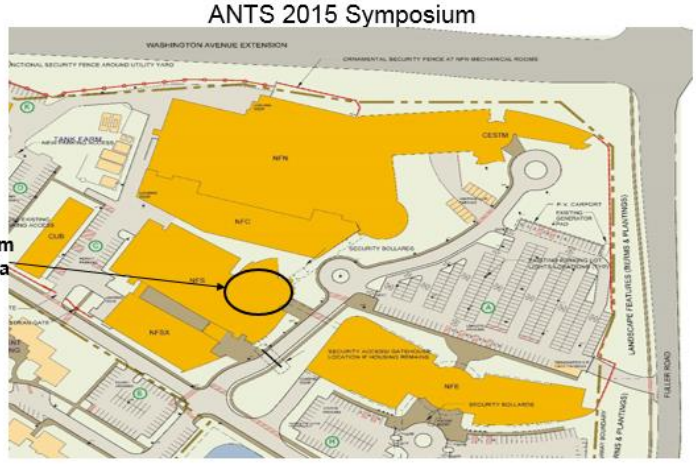

South Auditorium & South Rotunda 1st Floor

Please check-in directly at the south auditorium entrance, registration is open 8:30 AM – 10:00 AM