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Symposium Program

Wednesday November 14th

Time	Event	Presenter(s)
8:00 – 8:45 am	Registration / Poster Setup	
8:45 – 9:00 am	Opening Remarks	Tom Gow, IBM and Rinus Lee, EDS
9:00 – 10:00 am	**EDS Distinguished Lecture**: Brainstorming in Silicon	Rajiv Joshi, IBM
10:00 – 10:15 am	*Coffee Break*	
10:15 – 11:00 am	Poster Session Judging	
11:00 – 11:30 am	**Invited Talk:** Si-CMOS-compatible microphotonics platform which will enable on-chip imaging and sensing applications	Anuradha Murthy Agarwal, MIT
11:30 – 11:45 am	Plasma treatment effect on the gate stack electrical properties	T. Li, C. Park, R. Bao, and K. Watanabe
11:45 – 12:00 pm	Behavior of Shewanella Oneidensis MR-1 in a Sulfur and Zinc-Rich Medium and Its Applications for Biosensing and Biomaterials	Dylan Rees, Shayla Sawyer and Yuri Gorby
Noon – 1:30 pm	*TEL Lunch in ZEN Building*	
1:30 – 2:00 pm	**Invited Talk:** Nanoscale Engineering for Sensing and Computing	Nathan Cady, SUNY Polytechnic Institute
2:00 – 5:00 pm	Poster Session	
5:30 – 7:00 pm	Women In Engineering (WIE) Event in Champlain CR	Myung He Na, IBM; Kathleen Dunn, SUNY Poly; Susan Sharfstein, SUNY Poly; Fatemeh Shahedipour, SUNY Poly; Anuradha Agarwal, MIT; Mukta Farooq, IBM

Thursday, November 15th – Morning Session

Time	Event	Presenter(s)
8:00 – 9:00 am	Registration and Morning Coffee	
9:00 – 9:30 am	**EDS Distinguished Lecture:** Heterogeneous Integration	Mukta Farooq, IBM
9:30 – 9:50 am	Back End Tutorial: Ru Liner Scaling With ALD Tan Barrier Process For Low Resistance 7 Nm Cu Interconnects And Beyond	Koichi Motoyama, IBM
9:50 – 10:10 am	Back End Tutorial: Modified ALD TaN Barrier with Ru Liner and Dynamic Cu Reflow for 36nm Pitch Interconnect Integration	Prasad Bhosale, IBM
10:10 – 10:30 am	Back End Tutorial: Pinch off Plasma CVD Deposition Process and Material Technology for Nano-device Air Gap/Spacer Formation; Selective CVD Metal Deposition Technology for Nano-device fabrication Formation	Son Van Nguyen, IBM
10:30 – 11:00 am	**Invited Talk:** Advances in Focused Ion Beam Imaging, Spectroscopy and Fabrication	Robert Hull, RPI
11:00 – 11:15 am	*Coffee Break*	
11:15 – 11:30 am	Performance and Reliability of Asymmetrical Underlapped FinFET based 6T and 8T SRAMs in Sub-10nm Domain	M. U. Mohammed, A. Nizam, and M. H. Chowdhury
11:30 – 11:45 am	Design and Development of Stretchable Geometry AlGaN/GaN High Electron Mobility Transistors	I. Mahaboob, K. Hogan, E. Rocco, F. S. Shahedipour-Sandvik, R.P. Tompkins, and N. Lazarus
11:45 – 12:00 pm	Stochasticity and Robustness in Spiking Neural Networks	W. Olin-Ammentorp, J. Plank, C. Schuman, G. Bruer, M. Dean, G. Rose, and N. Cady
Noon – 12:15 pm	Memory Technology enabling the next Artificial Intelligence revolution	R. Godse, A. McPadden, V. Patel, and J. Yoon

12:15 – 1:30 pm	*EDS/IBM Lunch in Champlain (NFE 3rd Floor)*	

Thursday, November 15th – Afternoon Session

Time	Event	Presenter(s)
1:30 – 1:45 pm	The Resistivity Size Effect in Epitaxial Co(0001) and Ru(0001) Layers	E. Milosevic, S. Kersongpanya, and D. Gall
2:00 – 2:15 pm	Structural Characterization of Hafnia-Zirconia Dielectrics for Higher-K and Ferroelectric Applications	V. Mukundan, K. Beckmann, S. Consiglio, K. Tapily, R. Clark, G. Leusink, N. Cady, and A. C. Diebold
2:15 – 2:30 pm	Power Demand Pairing of Fuel Cells with Mixed-Use Commercial Building and Data Center Demand Utilizing Heat Capture	B. Boland, T. Ross, M. Fancher, G. Denbeaux, and A. Stuart
2:30 – 2:45 pm	Fabrication process validation and investigations of lithium-ionic conductors for solid electrolyte Li-ion batteries	H. Frost, S. Flottman, and H. Efstathiadis
2:45 – 3:00 pm	Morpho-Butterfly Inspired Gas Sensors for High Temperature Applications	N. Houlihan, R. Potyrailo and M. Carpenter
3:00 – 3:30 pm	**Invited Talk:** Rapid and Holistic Technology Evaluation for Exploratory DTCO in Beyond 7nm Technologies	Myung Hee Na, IBM
3:30 – 4:30 pm	Poster Session	
4:30 – 5:30 pm	**Plenary Lecture**: Digital Disruption: An Engineer's Perspective on Life, the Internet of Things and the Importance of Play	John Cohn, IBM
5:30 – 6:00 pm	Awards / Final Remarks	

Poster Session
November 14, 2:00 – 5:00 PM & November 15, 3:30 – 4:30 PM

Submission #	Title	Authors
4	Dimensionality reduction of the complete bipartite graph with k edges removed for quantum walks	Viktoria Koscinski and Chen-Fu Chiang
5	CARBON FILMS FOR CORROSION RESISTANT PHOTOELECTROCHEMICAL CELLS	Philip Schneider, Iulian Gherasoiu and Harry Efstathiadis
6	High Quality Factor Silicon Photonics Optical Ring Resonator Biosensor Design	Liaquat Ali, Mahrukh Khan, Mahmood Uddin Mohammed and Masud H Chaudhry
7	Fabrication process validation and investigations of lithium-ionic conductors for solid electrolyte Li-ion batteries	Hunter Frost, Spencer Flottman and Harry Efstathiadis
8	Double-Gate FDSOI Based SRAM Bitcell Circuit Designs with Different Back-Gate Biasing Configurations	Mahmood Uddin Mohammed, Athiya Nizam and Masud H Chowdhury
9	Simulation of Quantum Walks via Hamiltonian Reduction	Aaron Gregory and Chen-Fu Chiang
10	Reactively Sputtered Zn(O,S) Buffer Layer Suitable for Roll-to-Roll Fabrication of Cu(In,Ga)Se2 Devices	Graeme Housser and Harry Efstathiadis
11	Field-Enhanced Near-Infrared Reflector (NIR) as Smart-Glass for Energy-Saving Applications	Mark Altwerger, Iulian Gherasoiu and Harry Efstathiadis
16	Nb2O5 BASED RESISTIVE RANDOM ACCESS MEMORY DEVICES	Sierra Russell, Karsten Beckmann and Nathaniel Cady
17	Study of titanium nitride underlayer properties and its influence on tungsten growth	Shanti Pancharatnam, Jean Wynne, Gauri Karve, Adra Carr, Brock Mendoza, Lisamarie White, Gabriel Rodriguez, Scott DeVries and Wei Wang
18	Metal/Oxide/Si Interface Electrostatics Visualization with BEEM	Jack Rogers, Westly Nolting and Vincent LaBella
21	Investigation of plasmonic based nanocomposite thin films for high temperature gas sensing	Laila Banu, Radislav Potyrailo and Michael Carpenter

23	Efficient Scintillation from InAs Quantum Dots in a GaAs Matrix	Katherine Dropiewski, Allan Minns, Michael Yakimov, Vadim Tokranov, Serge Oktyabrsky
24	Effect of Silica Particles in Re-used Slurry for Substrate Silicon Wafer on CMP Process	Mami Kubota, Christopher Netzband and Kathleen A Dunn
25	XPS Investigation of the Oxidation State of Different Ceria Powders for CMP Slurry	Christopher Netzband and Kathleen Dunn
30	The Development of the Charge Transport Model to Predict Dielectric Failure	Yueming Xu, Joel Plawsky and Toh-Ming Lu
31	A new semiconductor: Ti0.5Mg0.5N(001)	Baiwei Wang and Daniel Gall
32	Energy Efficient FDSOI and FinFET based Power Gating Circuit Using Data Retention Transistor	Farid Uddin Ahmed, Zarin Tasnim Sandhie, Mahmood Uddin Mohammed, Abdul Hamid Bin Yousuf and Masud Chowdhury
33	The Resistivity Size Effect in Epitaxial Co(0001) and Ru(0001) Layers	Erik Milosevic, Sit Kersongpanya and Daniel Gall
36	Hollow Polymer Microneedle Fabrication for Injection, Collection and Imaging of Intravital Tissue and Diseased Tissue Models	Tristen Head, Logan Butt, Rojin Jafari, Xianjun Ye, Atul Dhall, Matthew Strohmayer, David Entenberg, Natalya Tokranova, John Condeelis, James Castracane and Nathaniel Cady
37	Integration of Cyclic Olefin Copolymer Microfluidics And Silicon-Based Sensors for Lab-On-A-Chip Applications	Minhaz Abedin, Natalya Tokranova, Raymond Jakubowicz, Benjamin Miller and Nathaniel Cady
38	Microstructure and Resistivity of Electroless Cobalt for BEOL Metallization	Kevin Musick
39	Metal Oxide Semiconductor-based gas sensor for Acetone sensing	Awani Khodkumbhe, Rahul Prajesh, Ajay Agrawal, Vikas Saini and Mohd Nahid
40	TaOx-based resistive memory devices highly resistant to displacement damage effects	Joshua Holt, Karsten Beckmann, Zahiruddin Alamgir, Nadia Suguitan, Sierra Russell, Evan Iler, Hassaram Bakhru, Jean Yang-Scharlotta and Nathaniel Cady
41	Nontrivial van der Waals interactions in layered halide perovskite (C4H9NH3)2PbI4	Zhizhong Chen, Yiping Wang, Xin Sun, Yu Xiang, Yang Hu, Jie Jiang, Jing Feng, Yi-Yang Sun, Gwo-Ching Wang, Toh-Ming Lu, Wertz Esther and Jian Shi
42	Characterization of N type Si doped ZnO and ZnO thin films deposited by RF magnetron sputtering	Jesse Claypoole, Mark Altwerger, Spencer Flottman and Harry Efstathiadis
44	Muller Matrix Spectroscopic Ellipsometry(MMSE) based Scatterometry Simulations of Si/SixGe1-x Multi-NS Nanowire Test Structures Fins for Advanced Node Optical Metrology	Madhulika Korde, Subhadeep Kal, Cheryl Pereira, Nick Keller, Aelan Mosden and Alain Diebold
45	Development of nanostructured Ge1-xSnx alloy using ion beam techniques for band gap engineering	Gourav Bhowmik and Mengbing Huang
46	Development of Cu Substrate Preparation Techniques for Graphene Synthesis	Siddarth Laveti, Thomas Manna, Jodi Hotalen and Carl Ventrice