Hudson Mohawk Chapter – AVS

Spring Meeting

Monday 4/28/2014

HVCC TEC-SMART Campus

345 Hermes Road
Malta, NY 12020

2:00 PM	Reception and Refreshments
2:15 PM	TEC-SMART Tour
3:00 PM	Welcome by AVS Chapter, National AVS Update
3:15 PM	NEATEC Overview, Abe Michelen
3:35 PM	HVCC vacuum training curriculum, Fred Strnisa and students
4:15 PM	Oral Presentations
5:45 PM	Poster Presentations and Dinner
7:15 PM	Awards Ceremony and Brief Chapter Update
7:30 PM	Adjourn
7:30 PM	*Brief meeting of Chapter Board Members*

ORAL PRESENTATIONS

INVESTIGATION OF FOCUSED ION-BEAM INDUCED AUGER ELECTRON SPECTROSCOPY FOR CHEMICAL TOMOGRAPHY APPLICATIONS

Hamed Parvaneh and Robert Hull
Department of Materials Science & Engineering, Rensselaer Polytechnic Institute, Troy, New York 12180

HEXAGONAL BORON NITRIDE AS PASSIVATION LAYER FOR GRAPHENE INTERCONNECTS

Nikhil Jain and Bin Yu
College of Nanoscale Science and Engineering
State University of New York, Albany, NY 12203, USA

Ni DOPING ON Cu SURFACES: REDUCED COPPER RESISTIVITY

P.Y. Zheng, R.P. Deng and D. Gall
Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, NY, 12180

EXAMINATION OF CHARGE TRANSPORT IN SMART MATRIX LIGHT HARVESTING ARRAYS ASSEMBLED VIA A LAYER-BY-LAYER TECHNIQUE FOR USE IN MOLECULAR-BASED SOLAR CELLS

Marissa R. Civic and Peter H. Dinolfo
Department of Chemistry & Chemical Biology
Rensselaer Polytechnic Institute, 110 8th Street, Troy, NY 12180

POSTERS

Industrial Applications of Auger Electron Spectroscopy (AES) in GE Research and Development Laboratory

Laurie Le Tarte and Hong Piao*
General Electric Co., Niskayuna, NY 12309, U.S.
Denny Paul, *Physical Electronics*

EPITAXIAL WN_x FILMS DEPOSITED BY REACTIVE DC MAGNETRON SPUTTERING ON MgO(001), MgO(111), AND Al_2O_3(0001)

Brian Ozsdolay,[1] Karthik Balasubramanian,[1] Chris Mulligan,[2] and Daniel Gall[1]
[1] Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, Troy, NY 12180, USA
[2] U.S. Army Armament Research Development and Engineering Center, Benét Laboratories, Watervliet, NY 12189.

Effects of post metal gate anneal, dielectric thickness, and integration schemes on the crystallinity of ALD deposited HfO_2

Steven Consiglio a), b), Kandabara Tapily, Robert D. Clark, Toshio Hasegawa, Fumitaka Amano, and Gert J. Leusink
TEL Technology Center, America, LLC, 255 Fuller Rd., Albany, New York, 12203, USA
Jean Jordan-Sweet
IBM T.J. Watson Research Center, P.O. Box 218, Yorktown Heights, New York 10598, USA
Relja Vasić, Manasa Medikonda, and Alain C. Diebold a)
SUNY College of Nanoscale Science and Engineering, 257 Fuller Rd., Albany, New York, 12203.

INFLUENCE OF SUBSTRATE ORIENTATION ON THE GROWTH OF GRAPHENE ON Cu SINGLE CRYSTALS

Tyler R. Mowll, Zachary R. Robinson, Parul Tyagi,
Eng Wen Ong, and Carl A. Ventrice, Jr.
SUNY College of Nanoscale Science and Engineering, Albany, New York 12203

Au/HfO$_2$ INTERFACE TUNING WITH PHOSPHONIC ACID MOLECULAR NANOLAYERS

Matthew Kwan and Ganpati Ramanath
Rensselaer Polytechnic Institute, Materials Science and Engineering Department, Troy, NY 12180.

LUBRICIOUS SUPERHARD NbC$_x$N$_y$ FILMS

K. Zhang [a,b], D. Gall [b], W.T. Zheng [a]
a) *Department of Materials Science, Jilin University, Changchun 130012, People's Republic of China.*
b) *Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, Troy, NY 12180.*

ENHANCED OPTICAL SECOND-HARMONIC GENERATION FROM EPITAXIAL GRAPHENE ON VICINAL SiC(0001) SUBSTRATE

Yong Q. An, Ji Ung Lee, and Alain C. Diebold
College of Nanoscale Science and Engineering, State University of New York, Albany, New York 12203.

IMPROVEMENT IN SWITCHING PROPERTIES OF HfO$_2$ RESISTIVE RANDOM ACCESS MEMORY DEVICES AFTER ION IMPLANTATION

Jihan O. Capulong[1] and Nathaniel C. Cady[1]
[1]*SUNY College of Nanoscale Science and Engineering, Albany, NY, 12203, USA*

Extraordinary Photoconductive Properties of In2Se3 Nanosheets Applied to EUV Research

Robin Jacobs-Gedrim, Mariyappan Shanmugam, Yudhishtir Kandel, Nikhil Jain, Christopher Durcan, Thomas Murray, Richard Moore II, Kevin Ryan, Richard Matyi, Charles Settens, Abraham Hmiel and Bin Yu, College of Nanoscale Science & Engineering, SUNY Albany, Albany, NY, United States.

Surface Preparation Challenges in Crystalline Silicon (c-Si) Photovoltaic Manufacturing

Kristopher Davis[1,2], Scott McWilliams[2,3], Marianne Rogers[1,2], Andrew C. Rudack[2,3], Winston Schoenfeld[1,2], Hubert Seigneur[1,2], Joseph Walters[1,2], Linda Wilson[2,3]
[1]Florida Solar Energy Center, [2]U.S. Photovoltaic Manufacturing Consortium, [3]SEMATECH, Inc.