

# TUESDAY sept 14 - Morning

Plenary lecture

ROOM E – RETTORATO building

**CHAIRMAN: H. Hahn**

8.45

**PL04 Atomic and molecular scale control of electrochemical reactions**

M. Aono<sup>1</sup>, T. Hasegawa<sup>1</sup>, T. Nakayama<sup>1</sup>, and Y. Okawa<sup>1</sup> - <sup>1</sup>*International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki 305-0044, Japan*

# TUESDAY sept 14 - Morning

## Session Tu-am-A

T05 - Nanoelectronics, nanodevices and sensors (MEMS, NEMS...)  
**ROOM A - Physics FERMI building**

## CHAIRMAN: A. Bearzotti

**9.45 INVITED - Tu-am-A-I1 Control of the Energy Levels of a Single Atom in a Back-Gated Silicon Quantum Dot**

E. Prati<sup>1</sup>, M. Belli<sup>1</sup>, S. Cocco<sup>1</sup>, G. Petretto<sup>1</sup>, and M. Fanciulli<sup>1,2</sup> - <sup>1</sup>Laboratorio MDM, IMM-CNR, Via Olivetti 2, I-20041 Agrate Brianza; <sup>2</sup>Dipartimento di Scienza dei Materiali, Università degli Studi Milano-Bicocca, I-20125 Milano, Italy

**10.15 Tu-am-A-C2 Fabrication and Properties of metal Doped ZnO Nanowires**

E. Matei<sup>1</sup>, I. Enculescu<sup>1</sup>, M. Enculescu<sup>1</sup>, N. Preda<sup>1</sup>, S. Granville<sup>2</sup>, and J.-Ph. Ansermet<sup>2</sup> - <sup>1</sup>National Institute for Materials Physics, Atomistilor 105 bis, Magurele, Ilfov, Romania; <sup>2</sup>Ecole Polytechnique Federale, Lausanne, Switzerland

### Coffee Break

**11.15 INVITED - Tu-am-A-I2 Micro/Nano Pillar Based Single Crystal Semiconductor Devices on Amorphous Substrates for Efficient and Low-cost Energy Conversion**

M. Saif Islam, Matthew Ombaba & Logeeswaran VJ - *Integrated Nanodevices & Systems Research, Dept. of Electrical & Computer Engineering, University of California-Davis*

**11.45 Tu-am-A-C3 Charge mobility in single-crystal organic field-effect-transistors (FETs)**

V.Y. Butko<sup>1,2</sup>, W. So<sup>3</sup>, D.V. Lang<sup>3</sup>, X. Chi<sup>4</sup>, J.C. Lashley<sup>5</sup>, A.P. Ramirez<sup>6</sup> - <sup>1</sup>Ioffe Physical Technical Institute, 26 Polytechicheskaya, St. Petersburg, 194021, Russia; <sup>2</sup>St. Petersburg Academic University-Nanotechnology Research and Educational Centre, 8/3 Khlopin, St Petersburg, 195220, Russia; <sup>3</sup>Lucent Technologies, 600 Mountain Avenue, Murray Hill, New Jersey, 07974, USA; <sup>4</sup>Texas A and M University Kingsville, USA; <sup>5</sup>Los Alamos National Laboratory, USA; <sup>6</sup>UC Santa Cruz, USA

**12.00 Tu-am-A-C4 Structural and electrical properties of Nickel Silicide Nanodots on [001] Silicon**

A. Alberti<sup>1</sup>, G. D'Arrigo<sup>1</sup>, C. Bongiorno<sup>1</sup> and E. Rimini<sup>2</sup> - <sup>1</sup>Istituto per la Microelettronica e Microsistemi (CNR-IMM), Zona Industriale VIII Strada 5, 95121 Catania, Italy; <sup>2</sup>Dipartimento di Fisica, Università degli Studi di Catania, Viale A. Doria 6, 95125 Catania, Italy

**12.15 Tu-am-A-C5 Bottom layer thickness effect on electrical and morphological properties of T6 /PDI8-CN<sub>2</sub> Heterostructure Field Effect Transistors**

F.V. Di Girolamo<sup>\*</sup>, M. Barra, F. Chiarella, R. Di Capua, S. Lettieri, M. Salluzzo, V. Tkachenko, A. Cassinese - *CNR-SPIN and Department of Physics Science, University of Naples Federico II, Piazzale Tecchio 80125, Naples, Italy*

**12.30 Tu-am-A-C6 Superconducting nanostriplines as quantum detectors**

A. Casaburi<sup>1</sup>, M. Ejrnaes<sup>1</sup>, R. Cristiano<sup>1</sup>, F. Mattioli<sup>2</sup>, A. Gaggero<sup>2</sup>, R. Leoni<sup>2</sup>, N. Martucciello<sup>3</sup>, S. Marchetti<sup>4</sup>, S. Pagano<sup>3,4</sup> - <sup>1</sup>Istituto di Cibernetica "E. Caianiello" del C.N.R., 80078 Pozzuoli, Italy; <sup>2</sup>Istituto di Fotonica e Nanotecnologie del C.N.R., 00156 Roma, Italy; <sup>3</sup>Istituto SPIN del C.N.R. 84081 Salerno, Italy; <sup>4</sup>Dipartimento di Matematica e Informatica, Università di Salerno, 84081 Fisciano, Italy

# TUESDAY sept 14 - Morning

## Session Tu-am-B

T02 - Nanostructured materials for energy applications  
ROOM B - Chemistry CAGLIOTI building (Ground floor)

## CHAIRMAN: A. Bieberle-Hutter

- 9.45 **INVITED - Tu-am-B-I1 Advanced metal-air batteries based on silicon fuel**  
Yair Ein-Eli - *Department of Materials Engineering, Technion-Israel Institute of Technology, Haifa 32000, Israel.* -
- 10.15 **Tu-am-B-C1 Control of the reflectivity of highly disordered Si nanowire for photovoltaic application**  
A. Convertino, M.Cuscunà, and F. Martelli - *Istituto per la Microelettronica e i Microsistemi del Consiglio Nazionale delle Ricerche, via del Fosso del Cavaliere 100, 00133 Rome, Italy*
- 10.30 **Tu-am-B-C2 Pulsed KrF laser synthesis of single-wall-carbon-nanotubes, their purification and integration into SWCNTs/n-Si hybrid devices for photovoltaic applications**  
V. Le Borgne<sup>1</sup>, L.A. Gautier<sup>1</sup>, M. Mohamedi<sup>1</sup>, F. Rosei<sup>1</sup>, P. Castrucci<sup>2</sup>, M. Scarselli<sup>2</sup>, M. De Crescenzi<sup>2</sup>, and M. A. El Khakani<sup>1,\*</sup> - <sup>1</sup>*Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650 Lionel-Boulet, Varennes, QC, Canada, J3X 1S2* <sup>2</sup>*Dipartimento di Fisica, Università di Roma "Tor Vergata", 1 Via della Ricerca Scientifica, Roma, 00133 Italy*
- Coffee break*
- 11.15 **Tu-am-B-C3 Bulk nanostructured thermoelectric materials**  
M. S. Toprak, S. Li, M. Saleemi, A. Khan, and M. Muhammed - *Royal Institute of Technology (KTH), Functional Materials Division, Isafjordsgatan 22, SE-16440 Kista, Sweden*
- 11.30 **Tu-am-B-C4 AC Electrical and Ferroelectric Properties of PbGeSe Thin Films**  
Z.S. El Mandouh, H.A. El Meleegi, and M.O. Abou-Helal - *National Research Center, Physics Division, Electron Microscope and Thin Films Lab., EL Tahrir St. , Dokki , Cairo , Egypt;*
- 11.45 **Tu-am-B-C5 Nonequilibrium structure of nanostructured Ca<sub>2</sub>SnO<sub>4</sub> and Zn<sub>2</sub>SnO<sub>4</sub> prepared by mechanosynthesis**  
V. Šepelák<sup>1</sup>, S. Indris<sup>1</sup>, I. Bergmann<sup>2</sup>, S. M. Becker<sup>1</sup>, M. Bruns<sup>3</sup>, A. Feldhoff<sup>4</sup>, C. Kübel<sup>1</sup>, K. D. Becker<sup>5</sup>, P. Heitjans<sup>4</sup>, and H. Hahn<sup>1</sup> - <sup>1</sup>*Karlsruhe Institute of Technology, Institute of Nanotechnology, Eggenstein-Leopoldshafen, 76344, Germany;*
- 12.00 **Tu-am-B-C6 Surface treatment of carbon nanotubes, nanofibers and hollow spheres as nanomaterials for supercapacitors**  
V.K.Varentsov<sup>1,2</sup>, Yu.G.Mateyshina<sup>1,3</sup>, N.F.Uvarov<sup>1,2</sup>, B.B.Bokhonov<sup>1</sup>, A.S.Ulihin<sup>1</sup>, Kuvshinov G.G.<sup>2</sup>, V.I.Varentsova<sup>1</sup>, and S.I. Yusin<sup>1,2</sup> - <sup>1</sup>*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Kutateladze Str., 18, Novosibirsk, 630128, Russia;* <sup>2</sup>*Novosibirsk State Technical University, Karl Marx Prosp. 42, Novosibirsk, 630092, Russia;* <sup>3</sup>*Novosibirsk State University, Pirogova Str., 2, Novosibirsk, 630090, Russia*
- 12.15 **Tu-am-B-C7 Electrical characterization of highly textured films of Y-doped barium zirconate grown by pulsed laser deposition (PLD)**  
E. Fabbri<sup>1</sup>, D. Pergolesi<sup>1</sup>, S. Sanna<sup>2</sup>, A. Tebano<sup>3</sup>, A. D'Epifanio<sup>2</sup>, E. Di Bartolomeo<sup>2</sup>, G. Balestrino<sup>3</sup>, S. Licoccia<sup>2</sup>, and E. Traversa<sup>1,2</sup> - <sup>1</sup>*International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044 Japan;* <sup>2</sup>*NAST Center & Department of Chemical Science and Technologies, University of Roma "Tor Vergata", 00133 Rome, Italy;* <sup>3</sup>*INFN CNR-SPIN and Department of Mechanical Engineering, University of Roma "Tor Vergata", Rome, Italy*
- 12.30 **Tu-am-B-C8 Structural and Optical properties of TiO<sub>2</sub> thin films derived by sol-gel dip coating process**  
S.Kermadi, N.Agoudjil<sup>1</sup>, S.Sali, M.Boumaour - <sup>1</sup>*Laboratoire des cellules photovoltaïques .Bd Frantz Fanon BP 399 Alger Algeria;* <sup>2</sup>*Laboratoire de physico-chimie des matériaux et environnement Faculte de chimie USTHB . Alger Algeria*

# TUESDAY sept 14 - Morning

## Session Tu-am-C T26 - Nanomagnetism ROOM C - CNR

### CHAIRMAN: I.K. Schuller

#### 9.45 INVITED - Tu-am-C-I1 Magnetic nanoparticles for novel applications

G.C. Hadjipanayis<sup>1</sup> - <sup>1</sup>University of Delaware, Department of Physics and Astronomy, 217 Sharp Lab, 104 The Green, Newark, DE 19716 USA

#### 10.15 Tu-am-C-C1 Qualitative and quantitative imaging of magnetic stray fields in RECo<sub>5</sub> thin films

U. Wolff<sup>1</sup>, S. Schnittger<sup>2</sup>, J. Norpoth<sup>2</sup>, C. Jooss<sup>2</sup>, L. Schultz<sup>1</sup>, V. Neu<sup>1</sup> - <sup>1</sup>IFW Dresden, P.O. Box 270116, 01171 Dresden, Germany; <sup>2</sup>Institut für Materialphysik, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany

#### 10.30 Tu-am-C-C2 Effect of dipolar interaction on the magnetization state of chains of rectangular dots located either head-to-tail or side-by-side

D. Bisero<sup>1</sup>, P. Cremon<sup>1</sup>, M. Madami<sup>2</sup>, S. Tacchi<sup>2</sup>, G. Gubbiotti<sup>2</sup>, G. Carlotti<sup>2</sup>, A.O. Adeyeye<sup>3</sup>, N. Singh<sup>3</sup> and S. Goolaup<sup>3</sup> - <sup>1</sup>CNISM-Dipartimento di Fisica, Università di Ferrara, Italy; <sup>2</sup>CNISM-Dipartimento di Fisica, Università di Perugia, Italy; <sup>3</sup>Department of Electrical and Computer Engineering, National University of Singapore 117576, Singapore

#### Coffee Break

#### 11.15 INVITED - Tu-am-C-I2 Particular and granular magnetic nanostructures for advanced magnetic recording schemes

Josef Fidler<sup>1</sup>, Jehyun Lee<sup>1</sup>, Markus Fuger<sup>1</sup>, Dieter Suess<sup>1</sup>, and Thomas Schrefl<sup>2</sup> - <sup>1</sup>Inst. of Solid State Physics, Vienna University of Technology, 1040 Vienna, Austria; <sup>2</sup>St. Poelten University of Applied Science, 3100 St. Poelten, Austria

#### 11.45 Tu-am-C-C3 Effects of the competition between intraparticle anisotropy and interparticle exchange anisotropy in Fe films produced by femtosecond pulsed laser deposition

V. Iannotti<sup>1</sup>, S. Amoroso<sup>1</sup>, G. Ausanio<sup>1</sup>, D. Fiorani<sup>2</sup>, L. Lanotte<sup>1</sup>, G. Margarit<sup>3</sup> and K.N. Trohidou<sup>3</sup> - <sup>1</sup>CNR-SPIN Department of Physical Science, Naples Univ. Federico II, p.le V. Tecchio 80, I-80125 Napoli, Italy; <sup>2</sup>ISM - CNR, Area della Ricerca, Via Salaria km 29.500, 00016 Monterotondo Scalo, Italy; <sup>3</sup>Institute of Materials Science NCSR "Demokritos" Aghia Paraskevi, 15310 Athens, Greece

#### 12.00 Tu-am-C-C4 Synthesis and magnetic properties of size-selected CoPt nanoparticles

F. Tournus<sup>1</sup>, N. Blanc<sup>1</sup>, A. Tamion<sup>1</sup>, M. Hillenkamp<sup>2</sup>, and V. Dupuis<sup>1</sup> - <sup>1</sup>LPMCN, Univ. Lyon 1, CNRS UMR 5586, 69622 Villeurbanne, France; <sup>2</sup>LASIM, Univ. Lyon 1, CNRS UMR 5579, 69622 Villeurbanne, France

#### 12.15 Tu-am-C-C5 Piezomagnetic, piezoelectric and linear magnetoelectric effects inherent to nanosystems

M. Glinchuk<sup>1</sup>, E. Eliseev<sup>1</sup>, A. Morozovska<sup>2</sup>, B. Zaulychny<sup>1</sup>, V. Skorokhod<sup>1</sup>, and R. Blinc<sup>3</sup> - <sup>1</sup>Institute for Problems of Materials Science, NAS of Ukraine, Krjijanovskogo 3, 03142 Kiev, Ukraine; <sup>2</sup>V. Lashkarev Institute of Semiconductor Physics, NAS of Ukraine, prospect Nauki 41, 03028 Kiev, Ukraine; <sup>3</sup>Jožef Stefan Institute, P. O. Box 3000, 1001 Ljubljana, Slovenia

#### 12.30 Tu-am-C-C6 Collective Behavior of Magnetic NPs Applications

V. Salgueirino, A. B. Davila-Ibanez, and N. Fontaina-Troitino - Universidade de Vigo, Fisica Aplicada, 36310, Vigo, Spain

#### 12.45 Tu-am-C-C7 Magnetic phase transitions in nanoclusters and nanostructures

I. P. Suzdalev, and Yu. V. Maksimov - Semenov Institute of Chemical Physics RAS, 119991 Moscow, ul. Kosygina 4, Russian Federation

# TUESDAY sept 14 - Morning

## Session Tu-am-D

T04 - Advanced characterization techniques of nanostructures  
ROOM D - Physics MARCONI building

## CHAIRMAN: M. Vittori

### 9.45 INVITED - Tu-am-D-I1 Picometre Electron Microscopy

K. W. Urban - *Research Centre Juelich, Institute for Solid State Research and Ernst Ruska Centre for Microscopy & Spectroscopy with Electrons, 52425 Jülich, Germany*

### 10.15 Tu-am-D-C1 Modifying topology and spin character of quantum- confined electronic states in Ag(111) films

P. Moras<sup>1</sup>, D. Topwal<sup>2</sup>, P. M. Sheverdyaeva<sup>3</sup>, L. Ferrari<sup>4</sup>, J. Fujii<sup>5</sup>, G. Bihlmayer<sup>6</sup>, S. Blügel<sup>6</sup>, K. He<sup>7</sup>, Y. Takeichi<sup>7</sup>, M. Ogawa<sup>7</sup>, T. Okuda<sup>7</sup>, A. Harasawa<sup>7</sup>, T. Hirahara<sup>8</sup>, A. Kakizaki<sup>7</sup>, I. Matsuda<sup>7</sup>, and C. Carbone<sup>1</sup> - <sup>1</sup>ISM-CNR, Trieste, Italy; <sup>2</sup>ICTP, Trieste, Italy; <sup>3</sup>ELETTRA, Trieste, Italy; <sup>4</sup>ISC-CNR, Roma, Italy; <sup>5</sup>TASC-INFN-CNR, Trieste, Italy; <sup>6</sup>IFF, Jülich, Germany; <sup>7</sup>ISSP, The University of Tokyo, Chiba, Japan; <sup>8</sup>Department of Physics, The University of Tokyo, Tokyo, Japan

### 10.30 Tu-am-D-C2 Micro-Raman and TERS-based characterizations of nanostructures

T.S. Perova<sup>1</sup>, J. Wasyluk<sup>1</sup>, P. Rainey<sup>2</sup>, H.S. Gamble<sup>2</sup>, and B.M. Armstrong<sup>2</sup> - *Department of Electronic and Electrical Engineering, University of Dublin, Trinity College, Dublin 2, Ireland; <sup>2</sup>Northern Ireland Semiconductor Research Centre, The Queen's University of Belfast, Ashby Building, Stranmillis Road Belfast UK BT9 5AH*

### Coffee Break

### 11.15 INVITED - Tu-am-D-I2 Small angle X-ray scattering as *in situ* tool at the nanoscale: watch molecules during the self-assembly

H. Amenitsch<sup>1</sup> - <sup>1</sup>*Institute of Biophysics and Nanosystems Research, Schmiedlstr. 6, A-8042 Graz, Austria*

### 11.45 INVITED - Tu-am-D-I3 Imaging with coherent x-rays for nanotechnology and nanomedicine

G. Margaritondo<sup>1</sup>, J. H. Je<sup>2</sup>, and Y. Hwu<sup>3</sup> - <sup>1</sup>*Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland; <sup>2</sup>X-ray Imaging Center, Pohang University of Science and Technology (POSTECH), Pohang 790-784, South Korea; <sup>3</sup>Institute of Physics, Academia Sinica, Nankang, Taipei 11529, Taiwan*

### 12.15 Tu-am-D-C3 3D Fourier Transform Holography of a single nanostructure

D. Carbone<sup>1</sup>, V. Chamard<sup>2</sup>, J. Stangl<sup>3</sup>, A. Diaz<sup>4</sup>, G. Chen<sup>3</sup>, C. Alfonso<sup>2</sup>, C. Mocuta<sup>5</sup>, T.H. Metzger<sup>1,6</sup>, T. Schulli<sup>1</sup> - <sup>1</sup>*European Synchrotron Radiation Facility, BP220 38043 Grenoble, France; <sup>2</sup>IM2NP-CNRS, Aix-Marseille University, FST av. Escadrille Normandie Niemen, 13397 Marseille, France. <sup>3</sup>Institute of Semiconductor and Solid State Physics, Johannes Kepler University, 4040 Linz, Austria; <sup>4</sup>Paul Scherrer Institut, 5232 Villigen, Switzerland <sup>5</sup>Synchrotron Soleil, L'Orme des Merisiers, Saint-Aubin 91192 Gif-sur-Yvette, France, <sup>6</sup>Max-Planck Institute of Colloids and Interfaces, 14424 Potsdam, Germany*

### 12.30 Tu-am-D-C4 Polarized X-ray excited optical luminescence imaging of nano-LEDs

G. Martinez-Criado<sup>1</sup>, J. A. Sans<sup>1</sup>, R. Tucoulou<sup>1</sup>, P. Cloetens<sup>1</sup>, J. Susini<sup>1</sup>, A. Homs<sup>1</sup>, B. Alen<sup>2</sup>, L. Gonzalez<sup>2</sup>, J. Yoo<sup>3</sup>, and G. Yi<sup>3</sup> - <sup>1</sup>*European Synchrotron Radiation Facility, 38043 – Grenoble, France; <sup>2</sup>Microelectronics Institute Madrid, CNM-CSIC, 28760 – Tres Cantos, Spain; <sup>3</sup>Seoul National University, Seoul 151-747, Republic of Korea*

# TUESDAY sept 14 - Morning

## Session Tu-am-E

T01 - 2D molecular self assembling on surfaces and surface functionalization

ROOM E - RETTORATO Building

CHAIRMAN: G. Contini

### 9.45 Tu-am-E-C2 Synthesis and characterization of modified silane covered magnetite for imaging and drug delivery

F. Nepi<sup>1</sup>, R. Salvati<sup>1</sup>, M. Rossi<sup>2</sup>, G. Varvaro<sup>3</sup>, P. D'Elia<sup>4</sup>, S. Capuani<sup>5</sup>, B. Maraviglia<sup>5</sup>, M. Barteri<sup>1</sup> - <sup>1</sup>"La Sapienza" University, Department of Chemistry "Cannizzaro", P.le A. Moro 5, 00185 Rome, Italy; <sup>2</sup>"La Sapienza" University, Department of Energetics, Via A. Scarpa 14, 00185 Rome, Italy; <sup>3</sup>CNR - IMS - Via Salaria Km 29.500, 00016 Monterotondo Scalo, Italy; <sup>4</sup>Policlinico "Umberto I", Dipartimento di Ginecologia ed Ostetricia, Viale del Policlinico 155, 00161 Rome, Italy; <sup>5</sup>"La Sapienza" University, Department of Physics "Marconi" P.le A. Moro 5, 00185 Rome, Italy

### 10.00 Tu-am-E-C3 Hydrophilic grafted layer with tunable strength and the range of hydrophobic interactions

Igor Luzinov<sup>1</sup>, Olha Hoy<sup>1</sup>, Bogdan Zdyrko<sup>1</sup>, Robert Lupitsky<sup>2</sup>, Roman Sheparovych<sup>2</sup>, Dennis Aulich<sup>3</sup>, Jiafang Wang<sup>4</sup>, Eva Bittrich<sup>5</sup>, Klaus-Jochen Eichhorn<sup>5</sup>, Petra Uhlmann<sup>5</sup>, Karsten Hinrichs<sup>3</sup>, Marcus Müller<sup>4</sup>, Manfred Stamm<sup>5</sup>, Sergiy Minko<sup>2</sup> - <sup>1</sup>School of Materials Science and Engineering, 161 Sirrine Hall, Clemson University, Clemson, SC 29634, USA; <sup>2</sup>Department of Chemistry and Biomolecular Science, 8 Clarkson Ave, Clarkson University, Potsdam, NY 13699, USA; <sup>3</sup>ISAS-Institute for Analytical Sciences, Albert-Einstein-Str. 9, 12489 Berlin, Germany; <sup>4</sup>Institut für Theoretische Physik, Georg-August-Universität, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany; <sup>5</sup>Leibniz-Institut für Polymerforschung Dresden e.V., Hohe Strasse 6, 01069 Dresden, Germany

### 10.15 Tu-am-E-C4 Protein adsorption on DC-Chol-DOPE cationic liposomes and DC-Chol-DOPE/DNA lipoplexes visualized by means of SDS-PAGE

Daniela Pozzi, L. Callipo, G. Caracciolo, C. Cavaliere, A. Laganà, and R. Samperi - Dipartimento di Chimica, Università di Roma "La Sapienza", P.le Aldo Moro 5, 00185 Roma, Italia

### Coffee Break

### 11.15 Tu-am-E-C5 DNA Fixation on n-Type Silicon Surface and Electrophysical Properties of the Interface

P.A. Sokolov, N.V. Bazlov, N. A. Kasyanenko - St.-Petersburg State University, Faculty of Physics, Ulyanovskaya st.1, Petrodvorets, St-Petersburg, 198504, Russia

### 11.30 Tu-am-E-C6 Photocurrent generation through mono- and bi-component peptide-based self assembled monolayers: antenna and junction effect

A. Porchetta,<sup>1</sup> E. Gatto,<sup>1</sup> M. Caruso,<sup>1</sup> M. Crisma,<sup>2</sup> F. Formaggio,<sup>2</sup> C. Toniolo<sup>2</sup> and M. Venanzi<sup>1</sup> - <sup>1</sup>Department of Chemical Sciences and Technologies, University of Rome "Tor Vergata", 00133 Rome, Italy; <sup>2</sup>ICB, Padova Unit, CNR, Department of Chemistry, University of Padova, 35131 Padova, Italy

### 11.45 Tu-am-E-C7 Task-oriented engineering of zirconia nanoparticles surfaces

O. Gorban, A. Doroshkevich, B. Perekrestov, S. Synyakina, I. Danilenko, V. Glazunova, G. Volkova, T. Konstantinova - Donetsk Institute of Physics and Engineering NAS of Ukraine, R. Luxemburg str. 72, Donetsk, 83114, Ukraine

### 12.00 Tu-am-E-C8 Fabrication of super-hydrophobic surfaces by direct replication of lotus leaves

E. Lepore<sup>1</sup>, and N. Pugno<sup>1</sup> - <sup>1</sup>Laboratory of Bio-Inspired Nanomechanics "Giuseppe Maria Pugno", Department of Structural Engineering and Geotechnics, Politecnico di Torino, Torino, Italy

### 12.15 Tu-am-E-C9 Endohedral metallofullerenes in self-assembled monolayers

M. C. Gimenez-Lopez<sup>1</sup>, J. A. Gardener<sup>2</sup>, A. Q. Shaw<sup>2</sup>, A. Iwasiewicz-Wabnig<sup>2</sup>, K. Porfyraakis<sup>2</sup>, C. Balmer<sup>2</sup>, G. Dantelle<sup>2</sup>, M. Hadjipanayi<sup>3</sup>, A. Crossley<sup>2</sup>, N. R. Champness<sup>1</sup>, M. R. Castell<sup>2</sup>, G. A. D. Briggs<sup>2</sup> and A. N. Khlobystov<sup>1</sup> - <sup>1</sup>School of Chemistry, University of Nottingham, UK NG7 2RD; <sup>2</sup>Department of Materials, University of Oxford, Oxford, UK OX1 3PH; <sup>3</sup>Department of Physics, University of Oxford, Parks Road, Oxford, UK OX1 3PU

### 12.30 Tu-am-E-C10 Co and Py nanodots obtained by self-assembling of polystyrene nanospheres and conventional electron beam lithography

P. Tiberto, L. Boarino, F. Celegato, M. Coisson, E. Enrico, N. De Leo, F. Vinai - INRIM, Electromagnetism, Strada delle Cacce 91, 10135 Torino, Italy

# TUESDAY sept 14 - Morning

## Session Tu-am-F

T09 - Mechanical properties of nanostructured materials

ROOM F - Chemistry CAGLIOTI building (2<sup>nd</sup> floor)

## CHAIRMAN: S. Van Petegem

### 9.45 INVITED - Tu-am-F-I1 Correlation between dislocation structure and mechanical behavior in nanometals

X. Huang, J. Kidmose, G. Winther, and N. Hansen - *Risø National Laboratory for Sustainable Energy, Materials Research Division, Danish-Chinese Center for Nanometals, Technical University of Denmark, DK-4000 Roskilde, Denmark*

### 10.15 Tu-am-F-C1 Extraordinary mechanical properties of SPD-produced nanostructured alloys: origin and innovation potential

R. Z. Valiev - *Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, 12 K. Marx str., Ufa 450000 Russia*

### 10.30 Tu-am-F-C2 Deformations in nano-sized metallic systems

A. Kuzmin, C.Q.Chen, Y.T.Pei, Jeff Th.M. De Hosson - *Department of Applied Physics, Zernike Institute for Advanced Materials, University of Groningen, the Netherlands*

### Coffee Break

### 11.15 INVITED - Tu-am-F-I2 Strengthening mechanism of nano-scale twins

Lei Lu - *Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang 110016, China*

### 11.45 Tu-am-F-C3 Forced chemical mixing in Ag-Cu immiscible system using high pressure torsion

M. Pouryazdan Panah<sup>1</sup>, D. Wang<sup>1</sup>, T. Scherer<sup>1</sup>, R.S. Averback<sup>2</sup>, and H. Hahn<sup>1</sup> - <sup>1</sup>*Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, D-76021, Karlsruhe, Germany;* <sup>2</sup>*Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, 1304 W. Green St., Urbana, IL 61801, USA*

### 12.00 Tu-am-F-C4 Mechanical Properties of Hybrid Nanocrystalline Cellular Materials

G. D. Hibbard - *University of Toronto, Materials Science and Engineering, 184 College Street, Toronto, M5S 3E4, Canada*

### 12.15 Tu-am-F-C5 Fatigue Properties of Nanostructured Metals and Alloys

A. Singh<sup>1</sup>, M. Dao<sup>1</sup>, L. Lu<sup>2</sup> and S. Suresh<sup>1</sup> - <sup>1</sup>*Department of Material Science and Engineering, Massachusetts Institute of Technology, 77 Mass Ave., Cambridge, MA, USA;* <sup>2</sup>*Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

### 12.30 Tu-am-F-C6 Cooperative grain boundary sliding and limited ductility of nanocrystalline Pd-10%Au alloy

Yu. Ivanisenko<sup>1</sup>, L. Kurmanaeva<sup>1</sup>, C. Kübel<sup>1</sup>, J. Weissmüller<sup>1,2</sup>, J. Markmann<sup>2</sup> H.-J. Fecht<sup>1,3</sup> - <sup>1</sup>*Karlsruhe Institut für Technologie, Institut für Nanotechnologie, Karlsruhe, Germany;* <sup>2</sup>*Universität des Saarlandes, Technische Physik, Saarbrücken, Germany;* <sup>3</sup>*Universität Ulm, Institut für Mikro- und Nanomaterialien, Ulm, Germany*

### 12.45 Tu-am-F-C7 Synthesis, Microstructure and Mechanical Properties of Nanocrystalline and Ultrafine Grained Cu and Al Matrix Nanocomposites Produced by Powder Consolidation

Deliang Zhang<sup>1\*</sup>, Aamir Mukhtar<sup>1</sup>, Amro A. Gazawi<sup>1</sup>, Charlie Kong<sup>2</sup>, Paul Munroe<sup>2</sup> *Waikato Centre for Advanced Materials (WaiCAM), School of Engineering, University of Waikato, Private Bag 3105, Hamilton, New Zealand;* <sup>2</sup>*Electron Microscopy Unit, University of New South Wales, Sydney, 2052, Australia*

# TUESDAY sept 14 - Afternoon

Plenary lecture  
ROOM E – RETTORATO building

**CHAIRMAN: M. Girasole**

**14.15 PL05  
functions**

**Playing with Forces: how the stretching of proteins can alter their**

Viola Vogel - *Department of Materials, ETH Zurich, Wolfgang-Pauli-Strasse  
10, CH-8093, Zürich, Switzerland*



# TUESDAY sept 14 - Afternoon

## Session Tu-pm-A

### T10 - Modelling and simulation of nanostructures

ROOM A - Physics FERMI building

## CHAIRMAN: A. Amore Bonapasta

- 16.30** *INVITED - Tu-pm-A-I1* **Embedded and doped Si nanocrystals: Electronic, magnetic and optical properties from first principles**  
*F. Bechstedt - Institut für Festkörpertheorie und –optik, Friedrich-Schiller-Universität, Max-Wien-Platz 1, Jena, 07743, Germany*
- 17.00** **Tu-pm-A-C1** **Search for dark spin state in a triple quantum dot system**  
*B. R. Bułka<sup>1</sup>, J. Łuczak<sup>1</sup>, and T. Kostyrko<sup>2</sup> - <sup>1</sup>Institute of Molecular Physics, Polish Academy of Sciences, ul. M. Smoluchowskiego 17, 60-179 Poznań, Poland; <sup>2</sup>Faculty of Physics, A. Mickiewicz University, ul. Umultowska 85, 61-614 Poznań, Poland*
- 17.15** **Tu-pm-A-C2** **A new insight to structure of ultrafine isolated Al nanoparticles via Molecular dynamics simulation**  
*Amir Chamaani<sup>1</sup>, Reza Darvishi<sup>2</sup>, Yashar Behnamian<sup>3</sup>, Ehsan Marzanrad<sup>4</sup>, and Alireza Aghaei<sup>4</sup> - <sup>1</sup>New materials Department, Materials and Energy Research Center, P.O. Box 14155-4777, Tehran, Iran; <sup>2</sup>ICAMS, Ruhr-University Bochum, Bochum 44801, Germany; <sup>3</sup>Chemical and Materials Engineering Department, University of Alberta Edmonton AB, T6G 2V4, Canada; <sup>4</sup> Ceramic Department, Materials and Energy Research Center, P.O. Box 14155-4777, Tehran, Iran*
- 17.30** *INVITED - Tu-pm-A-I2* **Hierarchical pattern of microfibrils in a 3D fluorapatite–gelatine nanocomposite: Simulation of a bio-related structure building process**  
*J. Brickmann<sup>1</sup>, P. Duchstein<sup>2</sup>, S. Kokolakis<sup>1</sup>, R. Kniep<sup>2</sup> - <sup>1</sup>Physical Chemistry, TU Darmstadt, Petersenstr. 20, Darmstadt, 64287, Germany, <sup>2</sup>MPI for Chemical Physics of Solids, Nöthnitzer Str. 40, Dresden, 01187, Germany*
- 18.00** **Tu-pm-A-C3** **Prediction of thermodynamic stability of metal/oxide interface**  
*Hong Mei Jin and Ping Wu - Institute of High Performance Computing, 1 Fusionopolis Way, #16-16 Connexis, Singapore 138632, Singapore*

# TUESDAY sept 14 - Afternoon

## Session Tu-pm-B

T02 - Nanostructured materials for energy applications  
ROOM B - Chemistry CAGLIOTI building (Ground floor)

## CHAIRMAN: H.L. Tuller

**16.30 INVITED - Tu-pm-B-I1 Nanoionics: From Thin Metal/Metaloxide Films to Devices**

A. Bieberle-Hütter, J.M.L. Rupp, and L.J. Gauckler - *Nonmetallic Inorganic Materials, ETH Zurich, Wolfgang-Pauli-Str. 10, HCI G539, CH-8093 Zurich, Switzerland, anja.bieberle@mat.ethz.ch*

**17.00 Tu-pm-B-C1 Ordered crystalline growth of different SOFC electrolyte materials by pulsed laser deposition (PLD)**

D. Pergolesi<sup>1</sup>, E. Fabbri<sup>1</sup>, V. Esposito<sup>2</sup>, S. Sanna<sup>2</sup>, A. Tebano<sup>3</sup>, A. D'Epifanio<sup>2</sup>, E. Di Bartolomeo<sup>2</sup>, G. Balestrino<sup>3</sup>, S. Licocchia<sup>2</sup>, and E. Traversa<sup>1,2</sup> - <sup>1</sup>*International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044 Japan;* <sup>2</sup>*NAST Center & Department of Chemical Science and Technologies, University of Roma "Tor Vergata", 00133 Rome, Italy;* <sup>3</sup>*INFN CNR-SPIN and Department of Mechanical Engineering, University of Roma "Tor Vergata", Rome, Italy - Pergolesi.Daniele@nims.go.jp*

**17.15 Tu-pm-B-C2 Hollow Carbon Nanosphere Based Lithium-ion Negative Electrodes High Rate Low Temperature Performance**

J. Cox and M. J. Wagner - *Department of Chemistry, The George Washington University, Washington DC, 20052, USA*

**17.30 Tu-pm-B-C3 Detailed investigation on calcium-based heterogeneous basic nano-catalysts for transesterification reactions**

F. Deganello<sup>1</sup>, M.L. Testa<sup>1</sup>, V. La Parola<sup>1</sup> and G. Pantaleo<sup>1</sup> - <sup>1</sup>*ISMN-CNR sezione di Palermo, Via Ugo La Malfa 153, Palermo, Italy*

**17.45 Tu-pm-B-C4 Nanostructures and thin films of multiferroic materials for future spintronics and optoelectronics-related nanodevices**

R. Nechache<sup>1,2</sup>, E. Traversa<sup>2,3</sup>, S. Licocchia<sup>2</sup> and F. Rosei<sup>1</sup> - <sup>1</sup>*Centre Énergie, Matériaux et Télécommunications, INRS, 1650, boulevard Lionel-Boulet, Varennes, Québec J3X 1S2, Canada.* <sup>2</sup>*NAST Center & Department of Chemical Science and Technology, U. of Roma Tor Vergata, Via della Ricerca Scientifica, 00133 Rome (Italy).* <sup>3</sup>*International Research Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044 (Japan)*

**18.00 Tu-pm-B-C5 Irradiation effect on properties of nanomaterials**

R. Andrievskiy - *Institute of Problems of Chemical Physics, Russian Academy of Sciences, Semenov Prosp. 1, Chernogolovka, Moscow Region, 142432, Russia*

# TUESDAY sept 14 - Afternoon

## Session Tu-pm-C

T17 - Atomic clusters + T21 - Atomic manipulation

ROOM C - CNR

## CHAIRMAN: P. Piseri

- 16.30** *INVITED - Tu-pm-C-I1* **Ligand-protected gold clusters: building blocks of new nanomaterials?**  
Hannu Häkkinen - *Departments of Physics and Chemistry, Nanoscience Center, University of Jyväskylä, FI-40014 Jyväskylä, Finland*
- 17.00** *INVITED - Tu-pm-C-I2* **Counting the Atoms in Supported, Monolayer-Protected Gold Clusters**  
Z. W. Wang<sup>1</sup>, O. Toikkanen<sup>2</sup>, F. Yin<sup>1</sup>, Z. Y. Li<sup>1</sup>, B. M. Quinn<sup>2</sup>, J. Akola<sup>3</sup>, O. Lopez-Acevedo<sup>3</sup>, H. Häkkinen<sup>3</sup>, R. E. Palmer<sup>1</sup> - <sup>1</sup>*Nanoscale Physics Research Laboratory, School of Physics and Astronomy, University of Birmingham, B15 2TT, U.K.*; <sup>2</sup>*Department of Chemistry, School of Science and Technology, Aalto University, P.O. Box 16100, FI-00076 Aalto, Finland*; <sup>3</sup>*Nanoscience Center, Departments of Physics and Chemistry, University of Jyväskylä, P.O. Box 35, FI-40014 Jyväskylä, Finland*
- 17.30** **Tu-pm-C-C1** **X-ray photoemission from free lead clusters with complex morphology**  
T. Mazza<sup>1</sup>, P. Piseri<sup>1</sup>, M. Devetta<sup>1</sup>, L. Ravagnan<sup>1</sup>, P. Milani<sup>1</sup>, E. Kukk<sup>2</sup>, M. Huttula<sup>3</sup>, M. Mikkela<sup>3</sup>, M. Tchapyguine<sup>4</sup>, and O. Björneholm<sup>5</sup> - <sup>1</sup>*Cimaina and Dipartimento di Fisica, Università degli Studi di Milano, via Celoria 16 I20133 Milano, Italy*; <sup>2</sup>*Department of Physics, University of Turku, FIN-20014 Turku, Finland*; <sup>3</sup>*Department of Physics, University of Oulu, FIN-90014 Oulu, Finland*; <sup>4</sup>*Max-lab, Lund University, Box 118, SE-22100, Lund, Sweden*; <sup>5</sup>*Department of Physics, Uppsala University, Box 530, SE-75121, Uppsala, Sweden*
- 17.45** **Tu-pm-C-C2** **Ti Clusters Photofragmentation Experiments At The SCSS EUV FEL Facility**  
M. Devetta<sup>1</sup>, T. Mazza<sup>1</sup>, P. Milani<sup>1</sup>, P. Piseri<sup>1</sup>, H. Fukuzawa<sup>2</sup>, K. Motomura<sup>2</sup>, X.-J. Liu<sup>2</sup>, A. Yamada<sup>2</sup>, M. Okunishi<sup>2</sup>, K. Ueda<sup>2</sup>, K. Nagaya<sup>3</sup>, H. Iwayama<sup>3</sup>, A. Sugishima<sup>3</sup>, Y. Mizokuchi<sup>3</sup>, M. Yao<sup>3</sup>, N. Saito<sup>4</sup>, M. Coreno<sup>5</sup>, M. Nagasono<sup>6</sup>, T. Ishikawa<sup>6</sup> - <sup>1</sup>*Dipartimento di Fisica and CIMAINA, Università degli Studi di Milano, Via Celoria 16, I-20133 Milano, Italy*; <sup>2</sup>*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai 980-8577, Japan*; <sup>3</sup>*Department of Physics, Kyoto University, Kyoto 606-8502, Japan*; <sup>4</sup>*National Metrology Institute of Japan, AIST, Tsukuba 305-8568, Japan*; <sup>5</sup>*CNR-IMIP, Area della Ricerca di Roma I, Via Salaria Km 29.3, I-00016 Roma, Italy*; <sup>6</sup>*RIKEN, XFEL Project Head Office, Kouto 1-1-1, Sayo, Hyogo 679-5148, Japan*
- 18.00** **Tu-pm-C-C3** **Manipulation and spectroscopy of individual Cu phthalocyanine molecules on InAs(111)A with a low-temperature scanning tunneling microscope**  
Ch. Nacci<sup>1</sup>, J. Yang<sup>1</sup>, K. Kanisawa<sup>2</sup> and S. Fölsch<sup>1</sup> - <sup>1</sup>*Paul Drude Institute for Solid State Electronics, Hausvogteiplatz 5-7, Berlin, 10117, Germany*; <sup>2</sup>*NTT Basic Research Laboratories, NTT Corporation, 3-1 Morinosato-Wakamiya, Atsugi, Kanagawa, 243-0198, Japan*

# TUESDAY sept 14 - Afternoon

## Session Tu-pm-D

T04 - Advanced characterization techniques of nanostructures  
**ROOM D - Physics MARCONI building**

## CHAIRMAN: H. Amenitsch

- 16.30** *INVITED - Tu-pm-D-I1 Scanning Probe Microscopy in Material Science and Biology*  
A.Cricenti - *Istituto di Struttura della Materia, via Fosso del Cavaliere 100, 00133 Roma, Italy*
- 17.00** *INVITED - Tu-pm-D-I2 Spin mapping, spin manipulation, and magnetometry at the atomic level*  
R. Wiesendanger - *Institute of Applied Physics and Interdisciplinary Nanoscience Center Hamburg, University of Hamburg, D-20355 Hamburg, Germany; [www.nanoscience.de](http://www.nanoscience.de)*
- 17.30** **Tu-pm-D-C1 Controlled in-situ shear tests on nanoscale pillars and metal formability**  
A. Rinaldi<sup>1</sup>, S. Licoccia<sup>1</sup>, and E. Traversa<sup>2</sup> - <sup>1</sup>*Univ. Rome Tor Vergata, NAST and Chemical Science and Technology Dept., Via della Ricerca Scientifica, 00133, Rome, Italy;* <sup>2</sup>*National Institute for Materials Science, International Research Center for Materials Nanoarchitectonics (MANA), 1-1 Namiki, Tsukuba, 305-0044, Ibaraki, Japan*
- 17.45** **Tu-pm-D-C2 Phase – Electrostatic Force Microscopy measurements on operating Pentacene Thin Film Transistor**  
C. Albonetti<sup>1</sup>, G. Olivieri<sup>2</sup>, P. Annibale<sup>3</sup> and F. Biscarini<sup>1</sup> - <sup>1</sup>*ISMN – CNR Bologna, Via Gobetti 101, 40129 Bologna, Italy;* <sup>2</sup>*Elettra Synchrotron, Basovizza SS 14 km 169.5, 34149 Trieste, Italy;* <sup>3</sup>*LBEN Ecole Polytechnique Federale Lausanne, Station 17, CH-1015 Lausanne, Switzerland*
- 18:00** **Tu-pm-D-C3 Optically driven reversible matter motion in thin films containing azobenzene derivatives.**  
F. Fabbri<sup>1,2</sup>, Y. Lassailly<sup>1</sup>, S. Monaco<sup>2</sup>, J.P. Boilot<sup>1</sup>, K. Lahil<sup>1</sup> and J. Peretti<sup>1</sup>  
<sup>1</sup>*Laboratoire de Physique de la Matière Condensée – Ecole Polytechnique, CNRS, 91128 Palaiseau, France;* <sup>2</sup>*DIS – Università La Sapienza, Via Ariosto 25, 00185 Roma.*

# TUESDAY sept 14 - Afternoon

## Session Tu-pm-E

T07 - Materials with controlled nanostructure via chemical methods  
**ROOM E - RETTORATO Building**

## CHAIRMAN: L. Vayssieres

- 16.30** *INVITED - Tu-pm-E-I1* **Nanoscale Hollow Spheres: Microemulsion-based Synthesis, Properties and Application**  
C. Feldmann<sup>1</sup> - <sup>1</sup>*Karlsruhe Institute of Technology (KIT), Institut für Anorganische Chemie, Engesserstraße 15, Karlsruhe, 76131, Germany*
- 17.00** *INVITED - Tu-pm-E-I2* **Multiscale modelling of fracture chemo-mechanics in brittle materials**  
A. De Vita<sup>1</sup>, J. Kermode<sup>1</sup>, G. Csanyi<sup>2</sup>, M. Payne<sup>3</sup>, S. Cereda<sup>1</sup>, G. Moras<sup>4</sup>, P. Gumbsch<sup>4</sup> and L. Colombi Ciacchi<sup>5</sup> - <sup>1</sup>*King's College London, Physics Department, Strand, London WC2R 2LS, UK;* <sup>2</sup>*Engineering Laboratory, University of Cambridge, CB2 1PZ, UK;* <sup>3</sup>*Cavendish Laboratory, University of Cambridge, CB3 0HE, UK;* <sup>4</sup>*Fraunhofer; Institut für Werkstoffmechanik, Wohlerstrasse 11, Freiburg 79108, Germany;* <sup>5</sup>*University of Bremen, Bremen Center for Computational Materials Science, Bremen 28359, Germany*
- 17.30** **Tu-pm-E-C1** **Growth control of C<sub>60</sub> fullerene nanowhiskers**  
K. Miyazawa, K. Hotta, and Y. Akasaka - *National Institute for Materials Science, Fullerene Engineering Group, Tsukuba, Ibaraki 305-0044, Japan*
- 17.45** **Tu-pm-E-C2** **Electrochemical and hydrothermal deposition of ZnO on silicon: from continuous films to nanocrystals**  
M. Balucani<sup>1</sup>, P. Nenzi<sup>1</sup>, E. Chubenko<sup>2</sup>, A. Klyshko<sup>2</sup>, and V. Bondarenko<sup>2</sup> - <sup>1</sup>*Sapienza Rome University, Electronic Department, Via Eudossiana 18, Rome, 18-00184, Italy;* <sup>2</sup>*Belarusian State Univ. of Informatics and Radioelectronics, Micro and Nanoelectronics Department, P. Brovka Str. 6, Minsk, 220013, Belarus*

# TUESDAY sept 14 - Afternoon

## Session Tu-pm-F

T09 - Mechanical properties of nanostructured materials  
ROOM F - Chemistry CAGLIOTI building (2<sup>nd</sup> floor)

## CHAIRMAN: R.Z. Valiev / T. Tsakalacos

**16.30** *INVITED - Tu-pm-F-I1 Mechanical Behaviour of Nanostructured Coatings: An Eigenstrain Analysis by EDXRD Synchrotron Probe*

Thomas Tsakalacos<sup>1</sup>, E. K. Akdogan<sup>1</sup>, M. Croft<sup>2</sup>, A. Ignatov<sup>1,2</sup>, and Z. Zhong<sup>3</sup> -  
<sup>1</sup>*Materials Science and Engineering Dept, Rutgers Univ, Piscataway, NJ; 08854;*  
<sup>2</sup>*Department of Physics, Rutgers University, Piscataway, NJ 08854;* <sup>3</sup>*National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY; 11973.*  
Contact E-mail: tsakalak@rci.rutgers.edu

**17.00** *INVITED - Tu-pm-F-I2 In situ diffraction study of nanocrystalline metals*

S. Van Petegem<sup>1</sup>, H. Van Swygenhoven<sup>1</sup> - <sup>1</sup>*Materials Science and Simulations, NUM/ASQ, Paul Scherrer Institut, CH-5232 Villigen, Switzerland*

**17.30** *INVITED - Tu-pm-F-I3 Mechanical properties and deformation in multi-scale nanostructured materials*

Y.H. Zhao<sup>1</sup>, Y. Li,<sup>1</sup> T. Topping<sup>1</sup>, Y.T. Zhu<sup>2</sup>, R.Z. Valiev<sup>3</sup>, E.J. Lavernia<sup>1</sup> - <sup>1</sup>*Department of Chemical Engineering and Materials Science, University of California at Davis, Davis, CA 95616, USA;* <sup>2</sup>*Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC 27695;* <sup>3</sup>*Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa 450000, Russia*

**18.00** *Tu-pm-F-C7 Nanotechnology in steelmaking - State of the art*

Taha Mattar - *Egyptian Scientific Counsellor, Egyptian Embassy in Italy; Professor, Central Metallurgical R&D Institute*