

Thursday, Sept. 16 Morning

**Plenary lecture
ROOM E – RETTORATO building**

CHAIRMAN: M. Venanzi

8.45

PL07 Nanoengineered Particles for Therapeutic Delivery

F. Caruso¹ - ¹*Centre for Nanoscience and Nanotechnology, Department of Chemical and Biomolecular Engineering, The University of Melbourne, Melbourne, Victoria - 3010, Australia*

Thursday, Sept. 16 Morning

Session Th-am-A

T15 - Organic-inorganic hybrid materials

ROOM A - Physics FERMI building

CHAIRMAN: C. Bellitto

9.45 **INVITED - Th-am-A-I1 Hybrid Organic Inorganic Quantum Nano- Devices**

Y. Paltiel - *Applied Physics Department, Center for nano science and nano technology, Hebrew University, Givat Ram, Jerusalem 91904, Israel*

10.15 **Th-am-A-C1 Luminescent Mesostructured Hybrid Nanoparticles**

I. Mileto^{1,2}, E. Bottinelli^{1,2}, G. Caputo^{2,3}, S. Coluccia^{1,2} and E. Gianotti^{1,2} - ¹*University of Torino, Department of Inorganic, Physics and Material Chemistry, Via P.Giuria, 7. 10135 Torino, Italy;* ²*NIS (Nanostructured Interfaces and Surfaces) Interdepartmental Centre of Excellence, at the Centre for Innovation, via Quarello 11/a, 10135 Torino, Italy;* ³*Cyanine Technologies S.p.A. Via Quarello 11°, 10135 Torino, Italy*

10.30 **Th-am-A-C2 Atomic scale modeling of the polymer P3HT adhesion on inorganic nanostructures (titania, zinc oxide, carbon nanotubes)**

A. Mattoni¹, C. Melis^{1,2}, C. Caddeo^{1,2}, L. Colombo^{1,2} - ¹*Istituto Officina dei Materiali del CNR UOS SLACS, Monserrato (Ca), Italy;* ²*Dipartimento di Fisica, Università di Cagliari, Italy*

Coffee Break

11.15 **INVITED - Th-am-A-I2 Interface effects on an ultrathin Co film in multilayered stacks based on the organic semiconductor Alq3**

C. Pernechele¹, A.A. Sidorenko¹, I. Bergenti², P. Lupo¹, M. Ghidini¹, M. Solzi¹, L. E. Hueso², R. De Renzi¹ and V. Dediu² - ¹*Department of Physics, University of Parma, V.le G.P. Usberti 7/A, 43124 Parma, Italy,* ²*ISMN-Bo CNR, via Gobetti 101, 40129 Bologna, Italy*

11.45 **Th-am-A-C3 Structural Investigation of Nanostructured Magnetic Organic-Inorganic Hybrid Material: A case study**

R. Matassa¹, M. Carbone², G. Righini³, and E. M. Bauer³ - ¹*Dipartimento di Chimica, Università "Sapienza", P. le A. Moro 5, I-00185 Rome, Italy;* ²*Dipartimento di Scienze e Tecnologie Chimiche, Università di Tor Vergata, Via della Ricerca Scientifica 1, 00133 Rome, Italy;* ³*ISM - CNR, P.O. Box 10, I-00015 Monterotondo, Italy*

12.00 **Th-am-A-C4 Conductive UV-cured acrylic inks for resistor fabrication: morphology, stability and electrical properties**

A. Chiolerio¹, L. Vescovo², and M. Sangermano² - ¹*Physics Department, Politecnico di Torino, Corso Duca degli Abruzzi 24, IT-10129 Italy;* ²*Materials Science and Chemical Engineering Department, Politecnico di Torino, Corso Duca degli Abruzzi 24, IT-10129 Italy*

12.15 **Th-am-A-C5 Hybrid organic-inorganic sol-gel photoresist for sensing applications**

G. Greci¹, L. Brigo², A. Carpentiero¹, F. Romanato^{3,4}, M. Tormen¹ and G. Brusatin² - ¹*CNR-IOM, Lilit Beamline, Basovizza S.S. 14 km 163.5, 34149 Trieste, Italy;* ²*Mechanical Engineering Department - Materials Sector, University of Padova, Via Marzolo 9, 35131 Padova, Italy;* ³*Physics Department G. Galilei, University of Padova, Via Marzolo 8, 35131 Padova, Italy;* ⁴*LaNN, Laboratory for Nanofabrication of Nanodevices, Veneto Nanotech, Via San Crispino 106, 35129 Padova, Italy*

12.30 **Th-am-A-C6 Growth of highly oriented AlN on polyimide Kapton tape for wearable pressure sensors**

S. Petroni¹, G. Caretto², A. Passaseo², M. De Vittorio^{1,3} and R. Cingolani¹ - ¹*Istituto Italiano di Tecnologia, Via Barsanti, Arnesano (LE), 73010, Italy;* ²*CNR-INFN Distretto Tecnologico-ISUFI, Via Arnesano, 73100 Lecce, Italy;* ³*Università del Salento, Via per Arnesano, Lecce, 73100, Italy*

Thursday, Sept. 16 Morning

Session Th-am-B

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

CHAIRMAN: S. Licoccia

9.45 INVITED - Th-am-B-I1 Nanoscale grain refinement and H-sorption properties of MgH₂-based composites processed by severe plastic deformation W.J. Botta¹, D.R. Leiva¹, Jacques Huot², A.M. Jorge Jr¹, C.S. Kiminami¹ and T.T. Ishikawa¹ - ¹Universidade Federal de São Carlos, Departamento de Engenharia de Materiais, rod. Washington Luiz, km 235, 13565-905, São Carlos, SP, Brazil; ²Institut de Recherche sur l'Hydrogène, Université du Québec à Trois-Rivières : 3351, Boulevard des Forges, CP500, Trois-Rivières (Québec) G9A5H7, Canada

10.15 Th-am-B-C1 Dipole versus aromaticity: towards the gap-state engineering of the ZnO(10-10) surface for optoelectronic applications A. Calzolari⁽¹⁾, A. Ruini^(2,3), A. Catellani⁽⁴⁾ - ⁽¹⁾Democritos National Simulation Center, CNR-IOM Officina dei Materiali I-34012 Trieste, Italy; ⁽²⁾S3 National Center, CNR-Istituto di Nanoscienze, Modena Italy; ⁽³⁾Dipartimento di Fisica, Università di Modena e Reggio Emilia, 41100 Modena, Italy; ⁽⁴⁾CNR-IMEM, I-43100 Parma, Italy

10.30 Th-am-B-C2 Autonomous segmented metal oxide/metal nanowires for photocatalytic generation of hydrogen M.G. Maas, E.J.B. Rodijk, A.W. Maijenburg, D.H.A. Blank, and J.E ten Elshof - University of Twente, MESA⁺ Institute for Nanotechnology, P.O. Box 217, 7500 AE Enschede, the Netherlands.

Coffee break

11.15 Th-am-B-C3 On the rate limiting step of the hydrogen reaction in catalysed magnesium A. Montone¹, A. Aurora¹, D. Mirabile Gattia¹ and M. Vittori Antisari¹ - ¹ENEA Research Center of Casaccia, UTTMAT, Via Anguillarese, 301 – 00123 Rome, Italy

11.30 Th-am-B-C4 Polymer–fullerene blends for efficient organic photovoltaics: nanoscale structural /morphological properties and aging effects B. Paci¹, A. Generosi¹, D. Bailo^{1,2}, R.de Bettignies³ and V. Rossi Albertini¹ - ¹ISM- C.N.R., Via Fosso del Cavaliere 100, 00133 Rome, Italy; ²Dipartimento di Chimica, Università 'La Sapienza', P.le A. Moro 5, 00185 Roma, Italy ³Laboratoire Composants Solaires CEA INES-RDI, 50 avenue du lac Léman, 73377 Le Bourget du Lac, France

11.45 Th-am-B-C5 Hybrid polymer-CdS solar cell active layers formed by in situ growth of the CdS nanoparticles S. Masala^{1,3}, S. Del Gobbo³, C. Borriello¹, V. Bizzarro², C. Minarini¹, T. Di Luccio¹ and M. De Crescenzi³ - ¹Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), P.le E.Fermi, 80055 Portici, Italy; ²IMAST Portici, P.le E. Fermi, 80055 Portici, Italy; ³University of Rome Tor Vergata, Department of Physics, Via della Ricerca Scientifica 1, 00133 Rome, Italy

12.00 Th-am-B-C6 Incorporation of metallic nanoparticles in organic photovoltaic devices using carbon nanotubes transparent electrodes E. Kymakis¹, E. Stratakis², E. Koudoumas¹ and C. Fotakis² - ¹Electrical Engineering Dept & Center of Advanced Materials and Photonics, Technological Educational Institute (TEI) of Crete, Heraklion, Greece; ²Institute of Electronic Structure and Laser, FORTH, Heraklion, Crete, Greece

12.15 Th-am-B-C7 Nanoporous hybrid membranes with high stability for energy-efficient molecular separation H.L. Castricum^{1,2}, G.G. Paradis³, M.C. Mittelmeijer-Hazeleger¹, R. Kreiter³, D.H.A. Blank², J.F. Vente³, and J.E. ten Elshof² - ¹Univ. of Amsterdam, Van 't Hoff Inst. for Molecular Sciences, Nieuwe Achtergracht 166, 1018 WV Amsterdam, The Netherlands; ²Univ. Twente, MESA+ Inst. for Nanotechnology, Inorganic Materials Science, P.O. Box 217, 7500 AE Enschede, The Netherlands; ³Energy research Centre of the Netherlands, Molecular Separation Technology, P.O. Box 1, 1755 ZG Petten, The Netherlands

12.30 Th-am-B-C8 Magnesium Nanoparticles for Hydrogen Storage Luca Pasquini¹, Elsa Callini¹, Emanuela Piscopiello², Federico Boscherini¹, Amelia Montone³, Marco Vittori Antisari³, Ennio Bonetti¹ - ¹Dept. of Physics, University of Bologna, Bologna, Italy; ²C.R. Brindisi, ENEA, Brindisi, Italy ³C.R. Casaccia, ENEA, Rome, Italy

12.45 Tu-pm-B-C9 Nanostructured MgB₂ superconducting wires for energy related applications G. Grasso, S. Brisigotti, A. Tumino, S. Berta, M. Palombo, V. Cubeda - Columbus Superconductors SpA, Via delle Terre Rosse 30, Genova, 16133, Italy

Thursday, Sept. 16 Morning

Session Th-am-C

T26 - Nanomagnetism

ROOM C - CNR

CHAIRMAN: C. CARBONE

- 9.45 INVITED - Th-am-C-I1 Switchable spin-crossover nanoparticles**
E. Coronado¹, M. Monrabal-Capilla¹, M. Giménez-Marqués¹, F. Prins², H. S. J. van der Zant², J. R. Galán-Mascarós³ - ¹*Instituto Ciencia Molecular (ICMol), Universidad de Valencia, P.O. Box 22085, Valencia, Spain;* ²*Kavli Institute of NanoScience, Delft University of Technology, 2628 CJ Delft, The Netherlands;* ³*Institute of Chemical Research of Catalonia (ICIQ). Av. Paisos Catalans, 16. 43007 – Tarragona, Spain*
- 10.15 Th-am-C-C1 Mapping the spin texture in exchange-biased IrMn/CoFe with isotope-resolved tracer layers**
L. E. Fernandez-Outon, J. D. Ardisson, and W. A. A. Macedo - *Serviço de Nanotecnologia, Centro de Desenvolvimento da Tecnologia Nuclear, 30123-970 Belo Horizonte, MG, Brazil*
- 10.30 Th-am-C-C2 Unexpectedly Long-Range Influence on Thin-Film Magnetization Reversal by a Rectangular Array of FeMn Pinning Films**
Yu.P. Kabanov¹, V. I. Nikitenko^{1,2}, O.A. Tikhomirov¹, V. Gornakov¹, W.F. Egelhoff², A. J. Shapiro², R. D. Shull² - ¹*Institute of Solid State Physics, RAS, Chernogolovka, 142432 Russia;* ²*National Institute of Standards and Technology, Gaithersburg, MD, USA*
- Coffee Break**
- 11.15 INVITED - Th-am-C-I2 Magnetic nanoparticles: free nanocompass and quantum mechanical rotation**
J. Tejada - *Facultat de Física, Universitat de Barcelona, Diagonal 645, 08028 Barcelona, Spain*
- 11.45 Th-am-C-C5 Evidence for interactions among magnetite nanoparticles dispersed in photoreticulated PEGDA-600 matrix**
P. Allia¹, P. Tiberto², M. Coisson², A. Chiolerio¹, F. Celegato², F. Vinai², M. Sangermano¹, L. Vescovo¹, L. Suber³, and G. Marchegiani^{1,3} - ¹*Politecnico di Torino DISMIC, Corso Duca degli Abruzzi 24, 10125 Torino, Italy;* ²*INRIM, Electromagnetism, Strada delle Cacce 91, 10135 Torino, Italy;* ³*ISM - CNR, Area della Ricerca di Roma 1, Via Salaria km 29.500, 00016 Monterotondo Scalo, Italy*
- 12.00 Th-am-C-C6 Interface charge transfer in polypyrrole coated perovskite manganite magnetic nanoparticles**
O. Pana¹, N.G. Gheorghie², C. Leostean¹, M. L. Soran¹, S. Macavei¹, R. Turcu¹, C.M. Teodorescu² - ¹*Natl. Inst. of R&D for Isotopic and Molec. Technol. 65-103 Donath st., 400293 Cluj-Napoca, Romania;* ²*Natl. Inst. of R&D for Mater. Phys., 105 Atomistilor st., 077125 Bucharest -Magurele, Romania*
- 12.15 Th-am-C-C7 Effect of disorder on the magnetic and magneto-resistive properties of Co antidots prepared by self-assembling of polystyrene nanospheres**
M. Coisson¹, L. Boarino¹, F. Celegato¹, N. De Leo¹, P. Tiberto¹ and F. Vinai¹ - ¹*INRIM, strada delle Cacce 91, 10135 Torino (TO), Italy*
- 12.30 Th-am-C-C3 Effect of Ar ion irradiation on optical and magnetic properties of ZnO nanorods**
B. Panigrahy¹, M. Aslam², D.S. Misra², and D. Bahadur^{1*} - ¹*Department of Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Powai, Mumbai-400 076, India;* ²*Department of Physics, Indian Institute of Technology Bombay, Powai, Mumbai-400 076, India. Corresponding author,*
- 12.45 Th-am-C-C4 Nanomagnetism in nanocrystalline multiferroic bismuth ferrite lead titanate**
V. Tuboltsev¹, A. Savin², W. Sakamoto³, A. Hieno³, T. Yogo³, and J. Räisänen¹ - ¹*Division of Materials Physics, Department of Physics, University of Helsinki, P.O. Box 43, Helsinki 00014, Finland;* ²*Low Temperature Laboratory, Aalto University P.O. Box 15100, Aalto 00076, Finland;* ³*Division of Nanomaterials Science, EcoTopia Science Institute, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan*

Thursday, Sept. 16 Morning

Session Th-am-D

T16 - Nanomaterials for information storage

ROOM D - Physics MARCONI building

CHAIRMAN: J. Fidler

- 9.45 INVITED - Th-am-D-I1 Magnetic films on templates: A route towards percolated media**
D. Makarov¹, C. Brombacher¹, C. Schulze¹, J. Lee², J. Fidler², M. Faustini³, D. Grosso³, and M. Albrecht¹ - *Institute of Physics, Chemnitz University of Technology, 09107 Chemnitz, Germany; ²Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; ³Laboratoire de Chimie de la Matière Condensée, Collège de France, Paris, France*
- 10.15 Th-am-D-C1 Magnetic proximity effect across an MgO barrier in the Fe/MgO/(GaMn)As system**
P. Torelli¹, M. Soda², J. Fujii¹, G. Panaccione¹, M. Sperl² and H. C. Back² - *¹Istituto IOM-CNR, TASC Laboratory in Area Science Park, S.S. 14, km. 163.5, I-34012 Trieste, Italy; ²Institut für Experimentelle Physik, Universität Regensburg, D-93040 Regensburg, Germany*
- 10.30 Th-am-D-C2 La_{0.7}Sr_{0.3}MnO₃ thin films on SrTiO₃ and CaTiO₃ buffered Si substrates: static and dynamic magnetic properties**
M Belmeguenai¹, S. Mercone¹, C Adamo², L Méchin³, P Monod⁴, P Moch¹, D G Schlom² - *¹LPMTM (CNRS-UPR 9001), Université Paris 13, 93430 Villetaneuse, France; ²Department of Materials Science and Engineering, Cornell University, Ithaca, New York 14853-1501, USA; ³GREYC (CNRS-UMR 6072) ENSICAEN Université de Caen, 6 boulevard Maréchal Juin, 14050 Caen Cedex, France; ⁴LPEM (CNRS-UPR A0005) ESPCI, 10 Rue Vauquelin, F-75231 Paris cedex 5, France*
- Coffee Break**
- 11.15 INVITED - Th-am-D-I2 Graded L10-FePt media as candidates for ultrahigh magnetic recording storage beyond 1 Tbit/in²**
V. Alexandrakis¹, Th. Speliotis¹, E. Manios¹ and D. Niarchos¹, G. Varvaro², E. Agostinelli² and A. Testa² - *¹IMS, NCSR Demokritos, Aghia Paraskevi, Attikis, Athens 15310, Greece ²Istituto di Struttura della Materia – CNR, Area della Ricerca di Roma1, Via Salaria km 29,300, P.O.Box 10 - 00016 Monterotondo Scalo (RM) Italy*
- 11.45 INVITED - Th-am-D-I3 Laterally-confined hard-soft magnetic media based on L1₀ FePt grown on substrates with variable matching**
F. Albertini, F. Casoli, P. Lupo, L. Nasi, S. Fabbri, P. Ranzieri, R. Cabassi, F. Bolzoni - *CNR - Istituto dei Materiali per l'Elettronica ed il Magnetismo, Parco Area delle Scienze 37/A - 43124 Parma, Italy*
- 12.15 Th-am-D-C3 Collapse-revivals of the entanglement between electronic spin and subband states in a Rashba nanoloop**
R. Safaiee^{1,2} and M. M. Golshan¹
¹Physics Department, Shiraz University, Adabiat Crossing, Shiraz, Iran, 71454; ²Nanotechnology Research Institute, Shiraz University, Shiraz, Iran
- 12.30 Th-am-D-C4 Au-catalyzed self assembly of Ge-Sb-Te nanowires by Metalorganic Chemical Vapour Deposition**
M. Longo¹, C. Wiemer¹, O. Salicio¹, R. Fallica¹, M. Fanciulli^{1,2}, L. Lazzarini³, L. Nasi³ and E. Rotunno³ - *¹Laboratorio MDM, IMM-CNR, Unità di Agrate Brianza, , Via C. Olivetti 2, 20041, Agrate Brianza, (MB), Italy; ²Dipartimento di Scienza dei Materiali, University of Milano-Bicocca, via R. Cozzi, 53, 20125 Milano, Italy; ³IMEM-CNR, Parco Area delle Scienze 37/A, 43124, Parma, Italy*

Thursday, Sept. 16 Morning

Session Th-am-E

T18 - Nanoparticles

ROOM E - RETTORATO Building

CHAIRMAN: P. Tiberto

- 9.45 INVITED - Th-am-E-I1 Magnetic Nanoparticles: Correlation between Structural and Magnetic Properties**
Jean-Marc Greneche - *Laboratoire de Physique de l'Etat Condensé LPEC, UMR CNRS 6087, Université du Maine, 72085 Le Mans, Cedex 9, France*
- 10.15 Th-am-E-C1 Magnetic properties of nanoporous assemblies of CoFe₂O₄ nanoparticles with cubic magnetic anisotropy**
S. Laureti¹, G. Varvaro¹, A.M. Testa¹, D. Fiorani¹, E. Agostinelli¹, G. Piccaluga², C. Cannas², A. Musinu², A. Ardu², D. Peddis^{1,2} - ¹ISM - CNR, Area della Ricerca, Via Salaria km 29.500, 00016 Monterotondo Scalo, Italy; ²Dipartimento di Scienze Chimiche, Università di Cagliari, Cittadella Universitaria di Monserrato, 09042, Cagliari, Italy
- 10.30 Th-am-E-C2 Correlation of Soft Magnetic Properties with microstructure in nanocrystallized Modified FINEMET Alloy Fe_{68.5}Nb₃Si_{18.5}B₉Cu₁**
A.P. Srivastava¹, Sandeep Sharma², D. Srivastava¹, P. K. Pujari², K. G. Suresh³ and G. K. Dey¹ - ¹Materials Science Division, Bhabha Atomic Research Centre, Mumbai 400085, India, ²Radio Chemistry Division, Bhabha Atomic Research Centre, Mumbai 400085, India, ³Physics department, Indian Institute of Technology, Bombay, Mumbai 400076, India
- Coffee Breaks*
- 11.15 Th-am-E-C3 Investigation on the phase coexistence in nano-sized (La,Ca)MnO₃ manganites by NPD and magnetic measurements**
A. Martinelli¹, D. Peddis^{2,3}, V. Caratto^{1,4} and M. Ferretti^{1,4} - ¹SPIN - CNR, Corso Perrone 24, 16152 Genova, Italy, ²ISM - CNR, Area della Ricerca, Via Salaria km 29.500, 00016 Monterotondo Scalo, Italy, ³Dipartimento di Scienze Chimiche, Cittadella Universitaria di Monserrato, bivio per Sestu, 09042, Monserrato, Italy, ⁴Dipartimento di Chimica e Chimica Industriale, Università di Genova, Via Dodecaneso 31, 16146 Genova, Italy
- 11.30 Th-am-E-C4 In situ Small Angle X ray Scattering study of silver nanocrystals formation in a template of polynaphthalene polymer aqueous solutions**
G. Campi¹, A. Mari², Heinz Amenitsch³, A. Pifferi¹ and L. Suber² - ¹IC-CNR, Area della Ricerca, Via Salaria km 29.300, 00015 Monterotondo Scalo - Roma, Italy; ²ISM-CNR, Area della Ricerca, Via Salaria km 29.300, 00015 Monterotondo Scalo - Roma, Italy; ³Institut of Biophysics and Nanosystems Research, Austrian Academy of Sciences, Schmiedlstrasse 6, 8042 Graz, Austria
- 11.45 Th-am-E-C5 Structural characterization of the supported gold nanoclusters determined by EXAFS and XRD methods**
V. Rednic¹, N. Aldea¹ and F. Matei² - ¹National Institute for Research and Development of Isotopic and Molecular Technologies, Donath 65-193, 400293 Cluj-Napoca, Romania; ²University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
- 12.00 Th-am-E-C6 Mesoscopic phenomena in oxide nanoparticles systems: growth, consolidation and sintering**
T.E. Konstantinova, I.A. Danilenko, V.A. Glazunova, and G.K. Volkova - *Donetsk Institute of Physics and Engineering NAS of Ukraine, R.Luxemburg str. 72, Donetsk, 83114, Ukraine*
- 12.15 Th-am-E-C7 The effect of oxidation on surface-near relaxation in transition metal nanoparticles**
B. Bieniek¹, D. Pohl¹, L. Schultz¹ and B. Rellinghaus¹ - *IFW Dresden, P.O. Box 270116, D-01171 Dresden, Germany*
- 12.30 Th-am-E-C8 AFM-based study on controlling nanocluster dynamics on graphite**
M. Rovatti^{1,2}, G. Paolicelli², and S. Valeri^{1,2} - ¹Università di Modena e Reggio Emilia, Dipartimento di Fisica, Via Campi 213/A, 41125, Modena, Italy; ²CNR-Istituto di Nanoscienze, Centro di Ricerca S3, Via Campi 213/A, 41125, Modena, Italy
- 12.30 Th-am-E-C8 Improving Aggregation Stability of Silver Nanoparticles by Surfactants and Polymers**
L. Kvitěk¹, R. Prucek¹, A. Panacek¹, J. Soukupova¹, and R. Zboril^{1,2} - ¹Palacky University, Department of Physical Chemistry, Tr. 17. Listopadu 12, 77146 Olomouc, Czech Republic; ²Palacky University, Centre for Nanomaterial Research, Slechtitelu 11, 78346 Olomouc, Czech Republic

Thursday, Sept. 16 Morning

Session Th-am-F

T25 - Nanostructured semiconductors

ROOM F - Chemistry CAGLIOTI building (2nd floor)

CHAIRMAN: I. Berbezier

9.45 **INVITED - Th-am-F-I1 Nanostructure by high-energy XRD and atomic pair distribution functions**
Valeri Petkov - Dept. Physics, CMU, Mt. Pleasant, MI 48858

10.15 **Th-am-F-C1 Electron confinement in silicon nanoribbons grown on the Ag(110) surface**
F. Ronci¹, S. Colonna¹, P. Gori¹, A. Cricenti¹, P. De Padova¹, C. Ottaviani¹, C. Quaresima¹, B. Aufray², G. Le Lay² - ¹ISM-CNR, via del Fosso del Cavaliere, 00133 Roma, Italy; ²CINaM-CNRS, Campus de Luminy, Case 913, 13288 Marseille Cedex 9, France

10.30 **Th-am-F-C2 Correlation between chemical structure and electrical properties in sol-gel derived Al-doped zinc oxide thin films**
B. Nasr, S. Dasgupta, D. Wang, R. Kruk, and H. Hahn - Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, Hermann-von-Helmholtz Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

Coffee Break

11.15 **Th-am-F-C3 A. Telegin WITHDRAWN Replaced by:**

11:15 **Niobium doped titania nanoparticles: synthesis, assembly into mesoporous films and electrical conductivity**

Y. Liu¹, J. M. Szeifert¹, J. M. Feckl¹, B. Mandlmeier¹, J. Rathousky², O. Hayden³, D. Fattakhova-Rohlfing^{1*}, T. Bein^{1*}

¹Department of Chemistry and Center for NanoScience (CeNS), University of Munich (LMU), Butenandtstr. 5-13, 81377 Munich, Germany; ²J. Heyrovský Institute of Physical Chemistry, v.v.i., Academy of Sciences of the Czech Republic, Dolejškova 3, 18223 Prague 8, Czech Republic; ³Siemens AG, Corporate Technology, Günther-Scharowsky-Str. 1, 91050 Erlangen, Germany

11.30 **Th-am-F-C4 Role of hydrogen in metal oxide nanotubes**
M. Kumar,¹ K.V. Lakshmi,² and J.P. Singh¹ - ¹Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India; ²Department of Chemistry and Chemical Biology and The Baruch '60 Center for Biochemical Solar Energy Research, Rensselaer Polytechnic Institute, 110 8th Street, Troy, NY 12180, USA

11.45 **Th-am-F-C5 Quantum transport in a core-shell GaAs/AlGaAs nanowire**
D. Lucot, F. Jabeen, J.-C. Harmand, G. Faini, D. Maily - Laboratoire de Photonique et de Nanostructures – CNRS, Route de Nozay, 91460 Marcoussis, France

12.00 **Th-am-F-C6 Understanding and controlling the MOVPE growth and optical properties of GaAs-AlGaAs core-shell nanowires**
I. Miccoli¹, P. Prete², F. Marzo¹, and N. Lovergine¹ - ¹Università del Salento, Dipartimento di Ingegneria dell'Innovazione, S.P. 6 Lecce-Monteroni, 73100 Lecce, Italy; ²IMM - CNR, Unità di Ricerca di Lecce, S.P. 6 Lecce-Monteroni, 73100 Lecce, Italy

12.15 **Th-am-F-C7 STM study of sub-monolayer Mn deposition on GaAs(001) and InAs/GaAs(001) quantum dots**
S. Colonna¹, F. Ronci¹, A. Cricenti¹, E. Placidi^{1,2}, F. Arciprete², A. Balzarotti² - ¹CNR Istituto di Struttura della Materia Via del Fosso del Cavaliere, 100 00133 Rome, Italy; ²Dipartimento di Fisica, Università di Roma "Tor Vergata", Via della Ricerca Scientifica 1, 00133 Roma, Italy

12.30 **Th-am-F-C8 Nano-Raman measurements on single and ensemble GaN and InN nanowires: a comparison**
T. Stoica¹, E.O. Schäfer-Nolte¹, E. Sutter², P. Sutter², R. Calarco¹, and D. Grützmacher¹ - ¹Institute of Bio-and Nanosystems (IBN-1) and JARA-FIT, Forschungszentrum Jülich, 52425 Jülich, Germany; ²Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, New York 11973, USA

Thursday, Sept. 16 Afternoon

Plenary lecture
ROOM E – RETTORATO building

CHAIRMAN: F. Bechstedt

14.15

PL08 Nanofriction and nanocontact conductance: classical and quantum surprises

E. Tosatti - *SISSA, CNR-IOM Democritos, and ICTP, Trieste, Italy*

Thursday, Sept. 16 Afternoon

Session Th-pm-A

T15 - Organic-inorganic hybrid materials

ROOM A - Physics FERMI building

CHAIRMAN: C. Pernechele

- 16.30 Th-pm-A-C1 Controlling the magnetic properties of a single phthalocyanine molecule through its strong coupling with a semiconductor**
A. Amore Bonapasta¹, G. Mattioli^{1,2}, F. Filippone¹, and P. Alippi¹ - ¹ISM - CNR, Area della Ricerca, Via Salaria km 29.500, 00016 Monterotondo Scalo, Italy; ²Università degli studi di Roma "La Sapienza", P.le A. Moro 2, 00185 Roma, Italy
- 16.45 Th-pm-A-C2 Bonding configuration of pyrrole molecules adsorbed on different GaAs(001) surface reconstructions studied by STM and STS**
T. Bruhn^{1,2}, E. Speiser², B. O. Fimland³, M. Kneissl¹, N. Esser^{1,2} and P. Vogt¹ - ¹TU Berlin, Institut für Festkörperphysik, Hardenbergstr.36, 10623 Berlin, Germany; ²Leibniz-Institut für Analytische Wissenschaften – ISAS, Albert-Einstein-Str.9, 12489 Berlin, Germany; ³Department of Electronics and Telecommunications, NTNU, NO-7491 Trondheim, Norway
- 17.00 Th-pm-A-C3 Surface enhanced Raman Effect of ultra-thin CuPc films employing periodic silver nanostructures prepared by nanosphere lithography**
M. Ludemann¹, O. D. Gordan¹, and D. R. T. Zahn¹ - ¹Chemnitz University of Technology, Semiconductor Physics, Reichenhainer Str. 70, Chemnitz, 09126, Germany
- 17.15 Th-pm-A-C4 FePc and CoPc ordered chains on the Au(110) surface: symmetry of the interacting states**
Riccardo Frisenda¹, Pierluigi Gargiani¹, Albano Cossaro², Alberto Verdini², Luca Floreano², Roberto Biagi³, Carlo Mariani¹ and Maria Grazia Betti¹ - ¹Dipartimento di Fisica Università di Roma "La Sapienza", p.le Aldo Moro 5, 00185 Roma ²IOM-CNR, Laboratorio Nazionale TASC, Basovizza SS-14, Km 163.5, I-34012 Trieste ³Università di Modena e Reggio Emilia Via G. Campi 213/a I-41100 Modena
- 17.30 Th-pm-A-C5 Fully-fluorinated tetraphenylporphyrin and 3C-SiC nanowires: a novel hybrid material for biomedical applications**
Filippo Fabbri¹, Francesca Rossi¹, Giovanni Attolini¹, Giancarlo Salviati¹, Salvatore Iannotta¹, Lucrezia Aversa², Roberto Verucchi², Marco Nardi² - ¹IMEM-CNR Institute, Parco Area delle Scienze 37/A, 43124 Parma (Italy); ²IFN-CNR Institute, Via alla Cascata 56/C – Povo, 38123 Trento (Italy)
- 17.45 Th-pm-A-C6 UHV In situ Fe-Tetraphenylporphyrin complex formation: XPS and NEXAFS studies with Synchrotron Radiation**
G. Di Santo¹, C. Castellarin-Cudia¹, P. Borghetti², M. Fanetti¹, B. Taleatu¹, L. Floreano³, A. Cossaro³, A. Verdini³, F. Bondino³, E. Magnano³ and A. Goldoni¹ - ¹Sincrotrone Trieste S.C.p.A, s.s. 14 km 163,5, 34149 Trieste, Italy; ²Dip. di Matematica e Fisica, Univ. Cattolica del Sacro Cuore, Via dei Musei 41, 25121 Brescia, Italy; ³Istituto Officina dei Materiali-CNR, Lab. TASC, s.s. 14 km 163,5, 34149 Trieste, Italy

Thursday, Sept. 16 Afternoon

Session Th-pm-B

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

CHAIRMAN: W.J. Botta

16.30 Th-pm-B-C1 Strong thermoelectric effect in carbon nanostructures

E. Eydelman^{1,2}, A. Vul¹ - ¹*Ioffe Physical-Technical Institute of the Russian Academy of Sciences, 26 Polytechnicheskaya st., St.-Petersburg, 194021, Russia;* ²*St.-Petersburg Chemical-Pharmaceutical Academy, 14 Professor Popova st., St.-Petersburg, 197376, Russia*

16.45 Th-pm-B-C2 Novel Hybrid Solar Cells architecture based on quasi-1D hierarchical TiO₂ nanostructures

F. Di Fonzo¹, E. Canesi¹, R. Sturini², A. Petrozza¹, R.S.S. Kumar¹, C.S. Casari^{1,4}, C. Bertarelli^{1,2}, C.E. Bottani^{1,4}, G. Lanzani^{1,3}, A. Li Bassi^{1,4} - ¹*Center for Nano Science and Technology - IIT@PoliMI, Via Pascoli 70/3, 20133 Milano (Italy);* ²*Dipartimento di Chimica, Materiali e Ing. Chimica "G. Natta", Politecnico di Milano, Piazza L. Da Vinci 32, 20133 Milano (Italy);* ³*Dipartimento di Fisica, ULTRAS INFM-CNR, Politecnico di Milano, Piazza L. Da Vinci 32, 20133 Milano (Italy);* ⁴*Dipartimento di Energia and NEMAS - Center for NanoEngineered Materials and Surfaces, Politecnico di Milano, Via Ponzio 34/3, 20133 Milano (Italy)*

17.00 Th-pm-B-C3 Improved Photovoltaic Performance of Heterostructured Tetrapod-Shaped CdSe/CdTe Nanocrystals Using C60 Interlayer

G. Gigli¹, R. Mastroia², L. Yanqin², A. Fiore² and L. Manna³ - ¹*CNR-NNL Nanoscience Institute, Innovation Engineering Department, University of Salento, Via Arnesano 16, 73100 Lecce, Italy;* ²*CNR-NNL Nanoscience Institute, Via Arnesano 16, 73100 Lecce, Italy;* ³*Italian Institute of Technology (IIT), Via Morego 30, 13163 Genova, Italy*

17.15 Th-pm-B-C4 Dye-sensitizing of nanostructured TiO₂/AZO transparent electrodes by self-assembly of functionalized photoactive molecules

G. Pellegrino¹, A. Alberti¹, A. Sciuto¹, G. G. Condorelli² and V. Privitera¹ - ¹*Istituto per la Microelettronica e Microsistemi (CNR-IMM), Zona Industriale VIII Strada 5, 95121 Catania, Italy;* ²*Università degli Studi di Catania, Viale A. Doria 6, 95125 Catania, Italy*

17.30 Th-pm-B-C5 Orientation dependent optical and electrical properties of self assembled semiconductor core-shell nanorod arrays

Roman Krahn¹, Anna Persano², Adriano Cola², and Liberato Manna¹ - ¹*IIT- Italian Institute of Technology, Via Morego 30, 16163 Genova, Italy* ²*IMM-CNR, Institute for Microelectronics and Microsystems - Unit of Lecce, Via Monteroni, I-73100 Lecce, Italy*

17.45 Th-pm-B-C6 Low core losses of FeSiBPCu nanocrystalline alloys with high B_c of 1.8-1.9 T

A. Makino¹, A. Urata², H. Matsumoto², S. Yoshida², T. Kubota¹, and A. Inoue³ - ¹*Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Sendai 980-8577, Japan;* ³*NEC TOKIN Corporation, 6-7-1 Kohriyama, Sendai 982-8510, Japan;* ²*Tohoku University, 2-1-1 Katahira, Sendai 980-8577, Japan*

Thursday, Sept. 16 Afternoon

Session Th-pm-C

T03 - Environment + T20 - Nanotoxicology

ROOM C - CNR

CHAIRMAN: L. Ghibelli

16.30 INVITED - Th-pm-C-I1 Nanotoxicology - Biological Principles and Methodological Flaws

H.F. Krug¹, C. Hirsch² and P. Wick² - *Empa - Swiss Federal Laboratories for Materials Science and Technology, ¹Department Material meets Life, ²Materials-Biology Interactions Laboratory, Lerchenfeldstr. 5, CH-9014 St. Gallen, Switzerland*

17.00 Th-pm-C-C1 Evaluation of toxicity effect of the gold nanoparticles and QDs in *Drosophila melanogaster*

G. Vecchio¹, A. Galeone¹, V. Brunetti¹, G. Maiorano¹, M.A. Malvindi¹, S. Sabella¹, R. Cingolani^{1,2} and P.P. Pompa¹ - *¹Italian Institute of Technology, Center for Bio-Molecular Nanotechnology, Via Barsanti, 1 – 73010 Arnesano (Lecce); ²Italian Institute of Technology, Central Research Laboratories, Via Morego, 30 – 16136 Genova, Italy*

17.15 Th-pm-C-C2 Antimicrobial activity of silver nanoparticles in relation to their toxicity

A. Panacek¹, L. Kvittek¹, R. Prucek¹, M. Kolar² and R. Zboril¹ - *¹Department of Physical Chemistry, Faculty of Science, Palacky University, Tr. 17. listopadu 12, Olomouc, 77146, Czech Republic; ²Department of Microbiology, Faculty of Medicine and Dentistry, Palacky University, Hnevotinska 3, Olomouc, 77515, Czech Republic*

17.30 Th-pm-C-C3 Removal of metal ions from water using functionalized magnetic nanoparticles: particle size and solution salinity effects

P. Figueira¹, C. Lopes¹, A. Daniel-da-Silva¹, M. Otero¹, E. Pereira¹, T. Trindade¹ - *¹CICECO & CESAM, Chemistry Department, University of Aveiro, 3810-193 Aveiro, Portugal*

17.45 Th-pm-C-C4 Fabrication of nano-sized ferroalloys from industrial wastes by thermal techniques

K.S. Abdel-Halim¹, M. Bahgat¹, M.H. Khedr², O.A. Fouad¹, M. Rashad¹ and A. Zaki² - *¹Central Metallurgical R & D Institute, CMRDI, P.O. Box: 87 Helwan, Cairo, Egypt; ²Materials Chemistry Dept, Faculty of Science, Beni Suef University, Egypt*

Thursday, Sept. 16 Afternoon

Session Th-pm-D

T10 - Modelling and simulation of nanostructures

ROOM D - Physics MARCONI building

CHAIRMAN: F. Bechstedt

- 16.30 INVITED - Th-pm-D-I1 Electronic and optical properties of graphane and related 2-D systems**
P. Gori¹, M. Marsili², V. Garbuio², and O. Pulci² - ¹ISM - CNR, Via del Fosso del Cavaliere, Rome, Italy; ²ETSF, Dept. of Physics University of Rome Tor Vergata, Via della Ricerca Scientifica 1, I-00133 Rome, Italy
- 17.00 Th-pm-D-C1 First principle study of Fe doped graphene nanoribbons**
Narjes Gorjizadeh¹, Yoshiyuki Kawazoe¹ - Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan
- 17.15 Th-pm-D-C2 Phonon-Induced Breakdown of Quasi Particle Approximation in Conjugated Polymers**
E. Cannuccia, A. Marini - Department of Physics, University of Rome "Tor Vergata", Via della Ricerca Scientifica 1, Roma (Italy)
- 17.30 17.30 Th-pm-D-C4 Energy spectra of a particle confined in a pyramid well**
T. Torchynska Yu.V. Vorobiev¹, V.R. Vieira², P. Ribeiro², P.M. Gorley³, P.P. Horley^{4,2}, J. González-Hernández⁴, T.V. Torchynska⁵ and A. Diaz Cano^{1,5} - ¹Unidad Querétaro del CINVESTAV-IPN, Querétaro 76230, Mexico; ²CFIF IST, Lisboa 1049-001, Portugal; ³Yuri Fedkovych Chernivtsi National University, Chernivtsi 58012, Ukraine; ⁴CIMAV Chihuahua / Monterrey, Av. Miguel de Cervantes 120, Chihuahua 31109, Mexico; ⁵Department of Physics, ESFM-IPN, México D.F. 07738, Mexico
- 17:45 Th-pm-D-C4 Competition between defect formation, stress, and chemical bonding at the nanoscale: the curious case of GaSb(001)**
Conor Hogan, Rita Magri, Rodolfo Del Sole
CNR-ISM Rome, ETFS and Department of Physics "Tor Vergata" Roma. Italy

Thursday, Sept. 16 Afternoon

Session Th-pm-E

T07 - Materials with controlled nanostructure via chemical methods

ROOM E - RETTORATO Building

CHAIRMAN: D. Peddis

16.30 Th-pm-E-C1 Emergent behaviour in metal nanorod arrays

Pushan Ayyub - *Department of Condensed Matter Physics & Materials Science, Tata Institute of Fundamental Research, 1 Homi Bhabha Road, Mumbai 400005, India*

16.45 Th-pm-E-C2 Nanoparticle heterostructures: Selective growth of metal dots onto dihexagonal pyramidal CdSe nanocrystals

M. Meyns¹, N. G. Bastús¹, Y. Cai¹, A. Kornowski¹, B. H. Juárez² and C. Klinkel¹ - ¹*Institute of Physical Chemistry, University of Hamburg, Grindelallee 117, 20146 Hamburg, Germany.* ²*IMDEA Nanociencia, Avda. Fco. Tomás y Valiente 7, 28049 Cantoblanco, Madrid, Spain*

17.00 Th-pm-E-C3 Nanotexturing of transparent polymers with plasma etching: configuring topography for low reflectivity

R. Di Mundo¹, M. Troia¹, F. Palumbo², and R. d'Agostino^{1,2,3} - ¹*Dipartimento di Chimica, Università degli Studi di Bari Aldo Moro;* ²*Istituto di Metodologie Inorganiche e dei Plasmi, CNR;* ³*Plasma Solution s.r.l. via Orabona, 4 -70126 Bari (Italy)*

17.15 Th-pm-E-C4 Synthesis of oxide nanoparticles with controlled structure by precipitation technique and physical actions

I. Danilenko¹, T. Konstantinova¹, G. Volkova¹, V. Glasunova¹ - ¹*Donetsk Institute of Physics and Engineering NAS of Ukraine, Material science department, R. Luxemburg str. 72, Donetsk, 83114, Ukraine*

17.30 Th-pm-E-C5 Effect of thiourea on pulse electrodeposition of Nanocrystalline copper

K. Shravan Kumar¹, Krishanu Biswas¹ and R. Balasubramaniam¹ - ¹*Dept. of Material and Metall. Engg., Indian Institute of Technology Kanpur, Kanpur, 208016, India*

17.45 Th-pm-E-C6 Nano structured CuO for Gas Sensors

Soumee Chakraborty¹, Arindam Das¹, Sandip Dhara¹, V. N. Singh³, Rigana Begum², A. K. Tyagi¹, B. R. Mehtha³ - ¹*SND, Indira Gandhi Centre for Atomic Research, Kalpakkam,* ²*Pondicherry University, Pondicherry,* ³*Department of Physics, IIT Delhi, New Delhi, India*

Thursday, Sept. 16 Afternoon

Session Th-pm-F

T19 - Carbon nanotubes and graphene

ROOM F - Chemistry CAGLIOTI building (2nd floor)

CHAIRMAN: K. Miyazawa

- 16.30 INVITED - Th-pm-F-II Edge state and magnetic properties of nanographene**
Toshiaki Enoki - Department of Chemistry, Tokyo Institute of Technology, Ookayama, Meguro-ku, Tokyo 152-8551, Japan
- 17.00 Th-pm-F-C1 Superlattice of resonator on monolayer graphene created by intercalated gold nanoclusters**
L. Simon¹, M. Cranney¹, F. Vonau¹, D. Aubel¹, P. Pillai², M.M. De Souza² - ¹Institut de Sciences des Matériaux de Mulhouse LRC 7228-CNRS, 4, rue des Frères Lumières, 68093 Mulhouse, France ; ²Department of Electronic and Electrical Engineering, Mappin Building, Mappin Street, Sheffield S1 3JD, UK
- 17.15 Th-pm-F-C2 Rapid identification of graphene flakes: Alumina does it better**
P. De Marco^{1,2}, F. Bisti¹, S. Prezioso¹, M. Donarelli¹, M. Nardone², A. Del Vitto³, M. Alessandri³, S. Santucci^{1,2}, L. Ottaviano^{1,2} - ¹Dipartimento di Fisica, Università dell'Aquila, Via Vetoio, 67100, Coppito-L'Aquila, Italy; ²CNR-SPIN L'Aquila, Via Vetoio, 67100, Coppito-L'Aquila, Italy; ³Numonyx Agrate Brianza, Milano, Italy
- 17.30 Th-pm-F-C3 Core level dispersion in graphene**
S. Lizzit¹, G. Zampieri², L. Petaccia¹, R. Larciprete³, P. Lacovig^{1,4}, E. D. L. Rienks⁵, G. Bihlmayer⁶, A. Baraldi^{4,7} and P. Hofmann⁵ - ¹Sincrotrone Trieste SCpA, Trieste, Italy ²Centro Atomico Bariloche and Inst. Balseiro, CNEA, Bariloche, Argentina, ³CNR-Institute for Complex Systems, Rome, Italy, ⁴Univ. of Trieste-Physics Dept. and CENMAT, Trieste, Italy, ⁵E.D.L., Inst. for Storage Ring Facilities and Interdisciplinary Nanoscience Center, Aarhus, Denmark, ⁶Inst. für Festkörperforschung, Forschungszentrum Jülich, Jülich, Germany, ⁷CNR-IOM Lab. TASC, Trieste, Italy
- 17.45 Th-pm-F-C4 Tuning the Electronic Properties of Graphene by Substrate Interaction and Perturbing Potentials: an Angle-Resolved Photoemission and Scanning Tunnelling Microscopy Study**
M. Papagno¹, S. Rusponi², D. Pacilé^{1,3}, D. Topwal^{4,5}, P. Moras¹, P. M. Sheverdayeva⁵, F. D. Natterer², A. Lehnert², S. Vlaic², M. Etzkorn², E. Frantzeskasis², S. Pons^{2,6}, M. Grioni², H. Brune², and C. Carbone¹ - ¹ISM – CNR, Basovizza, Trieste, Italy; ²IPMC, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; ³INFN, Università della Calabria, Rende, Cosenza, Italy; ⁴International Center for Theoretical Physics, Trieste, Italy; ⁵Sincrotrone Trieste Scpa, Trieste, Italy; ⁶IJL, Nancy Université-CNRS, France