

Friday, Sept. 17 Morning

Plenary lecture
ROOM E – RETTORATO building

CHAIRMAN: R. D. Shull

- 8.45 **PL09 The First 15 Years of Nanoimprint Lithography – An Enabling Engine to Nanotechnology**
Stephen Y. Chou - *NanoStructure Laboratory, Department of Electrical Engineering, Princeton University, Princeton, New Jersey, USA; Founder and Chairman, Nanonex Corporation, New Jersey, USA*

Friday, Sept. 17 Morning

Session Fr-am-A

T06 - Nanofabrication

ROOM A - Physics FERMI building

CHAIRMAN: G. Faini

9.45 INVITED - Fr-am-A-I1 Nanofabrication by combining top-down and bottom-up approaches

L. Vila^{1,2} - ¹Laboratoire Nanostructures et Magnétisme, Institut Nanosciences et Cryogénie, 17 rue des martyrs, 38054 Grenoble Cedex; ²Université Joseph Fourier, Grenoble

10.15 Fr-am-A-C1 Soft UV-NIL at 20 nm scale using flexible bilayer stamp casted on HSQ master mold

A. Cattoni, E. Cambri, D. Decanini, G. Faini, A. M. Haghiri-Gosnet - CNRS - Laboratoire de Photonique et de Nanostructures, 91460 Marcoussis, France

10.30 Fr-am-A-C2 A novel approach to low-cost fabrication of organic-based lasers for optical communications using a versatile table-top X-ray Interference Nano-Lithography tool

S. Prezioso¹, M. Donarelli¹, F. Bisti¹, P. De Marco¹, S. Santucci¹, L. Palladino¹, S. Penna², A. Reale², and L. Ottaviano¹ - ¹Università dell'Aquila, Dipartimento di Fisica, Via Vetoio, 67100 L'Aquila, Italy; ²Dipartimento di Ingegneria Elettronica, Università di Roma "Tor Vergata", Viale Politecnico I, 00133, Roma, Italy

Coffee Break

11.15 INVITED - Fr-am-A-I2 Nanostructured scaffolds for nervous tissue regeneration

F. Gelain^{1,2}, D. Cigognini^{1,2}, A. Caprini^{1,2}, D. Silva^{1,2}, F. Taraballi^{1,2} and A. Vescovi^{1,2} - ¹Center for Nanomedicine and Tissue Engineering, A.O. Ospedale Niguarda Ca' Granda, Piazza dell'Ospedale Maggiore 3, 20162, Milan, Italy; ²Biosciences and Biotechnology Department, University of Milan-Bicocca, Piazza della Scienza 2, 20126, Milan, Italy

11.45 Fr-am-A-C3 Production of Micro/Nano-structured surfaces and devices by combining 2D molecular self-assembly and standard micro-fabrication processes and their applications in biotechnology

R. Pugin¹, N. Blondiaux¹, A.M. Popa¹, M.J.K. Klein^{1,2}, F. Montagne¹, M. Giazzon¹, G. Weder¹, B. Wenger¹, M. Liley¹, H. Heinzlmann¹ - ¹Swiss Center for Electronics and Microtechnology (CSEM SA); Jaquet-Droz 1, Case Postale CH-2002 Neuchâtel, Switzerland; ²Microsystems Laboratory LMIS1, EPFL, CH-1015 Lausanne, Switzerland

12.00 Fr-am-A-C4 Synthesis of Titanium nanofibers, nanospheres and nanodiscs using femtosecond laser material processing

M. Alubaidy¹, K. Venkatakrisnan¹, B. Tan², and Abdulsalam Mahmood¹ - ¹Department of Mechanical Engineering, Ryerson University, 350 Victoria Street, Toronto, Ontario, M3N 2H8, Canada; ²Department of Aerospace Engineering, Ryerson University, 350 Victoria Street, Toronto, Ontario, M3N 2H8, Canada

12.15 Fr-am-A-C5 Direct laser writing for the realization of micro- and nano-structures in microfluidic devices

N. Rossetto¹, I. Fortunati¹, R. Signorini¹, C. Ferrante¹, G. Della Giustina², G. Brusatin², M. Guglielmi², V. Tagliuzucca³, S. Dirè³, E. Sorato⁴, D. Guidolin⁴, G. Albertin⁴ - ¹Università di Padova, Dip. Scienze Chimiche, via Marzolo, 1, 35131 Padova, Italy; ²Università di Padova, Dip. Ing. Meccanica, Sett. Materiali, via Marzolo, 9, 35131 Padova, Italy; ³Università di Trento, Dip. Ing. dei Materiali, via Mesiano, 77, 38050 Trento, Italy; ⁴Università di Padova, Dip. Anatomia e Fisiologia Umana, via Gabelli, 65, 35131 Padova, Italy

12.30 Fr-am-A-C6 Atomic layer deposition based stamp fabrication for UV nanoimprint lithography

M. Klöner, M. Ali, S. Suihkonen, M. Sapanen, and H. Lipsanen - Aalto University School of Science and Technology, Department of Micro and Nanosciences, Tietotie 3, 02150 Espoo, Finland

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Session Fr-am-B

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

ROOM B - Chemistry CAGLIOTI building (Ground floor)

CHAIRMAN: M. Venanzi

9.45 INVITED - Fr-am-B-I1 Exploring molecular assembly at surfaces: from supramolecular systems to robust surface confined polymers

Federico Rosei¹ - ¹INRS Energie, Matériaux et Télécommunications, Université du Québec 1650 Boul. Lionel Boulet, J3X 1S2 Varennes (QC), Canada,

10.15 Fr-am-B-C1 Interaction across organic-inorganic interfaces: The case of metal-phthalocyanines on noble metal surfaces

I. Kröger^{1,2}, B. Stadtmüller^{1,2}, C. Kleimann^{1,2}, and C. Kumpf^{1,2} - ¹Institute of Bio- and Nanosystems (IBN-3), Jülich Research Center, D-52425 Jülich, Germany; ²Jülich-Aachen Research Alliance – Fundamentals of Future Information Technologies (JARA-FIT)

10.30 Fr-am-B-C2 Metal-phthalocyanine array on the Moiré pattern of a graphene sheet: interaction and molecular orientation

M. Scardamaglia¹, G. Forte¹, P. Gargiani¹, S. Lizzit², A. Baraldi², R. Larciprete³, C. Mariani¹ and M. G. Betti¹ - ¹Dipartimento di Fisica, Università di Roma "La Sapienza", Piazzale Aldo Moro 5, I-00185 Roma; ²Sincrotrone Trieste, Str.St.14 km163.5, I-34012 Trieste; CNR-ISC, Via Fosso del Cavaliere 100, I-00133 Roma

Coffee Break

11.15 Fr-am-B-C3 From local to global chirality: from single chiral molecule to chiral superstructures

G. Contini¹, P. Gori¹, F. Ronci¹, N. Zema¹, S. Colonna¹, M. Aschi², A. Palma³, S. Turchini¹, D. Catone¹, A. Cricenti¹ and T. Prosperi¹ - ¹Istituto di Struttura della Materia, CNR, Via Fosso del Cavaliere 100, 00133 Roma, Italy; ²Istituto per lo Studio dei Materiali Nanostrutturati, CNR, Via Salaria Km 29.3, 00016 Monterotondo S. (RM), Italy; ³Università di L'Aquila, Dipartimento di Chimica, Ingegneria Chimica e Materiali - Coppito (AQ)

11.30 Fr-am-B-C4 Initial stages of 6,13 Pentacenequinone growth on Silicon Oxide: a systematic investigation

P. De Marco^{1,2}, F. Fioriti¹, F. Bisti¹, S. Prezioso¹, M. Donarelli¹, P. Parisse^{1,2}, S. Santucci^{1,2}, A. Ambrosio³, S. Lettieri³, P. Maddalena³, 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; ³CNR-SPIN & Dipartimento di Scienze Fisiche - Università degli studi di Napoli "Federico II", Via Cintia, 80126, Napoli, Italy

11.45 Fr-am-B-C5 Functionalization of the Si₃N₄ and SiO₂ surfaces with a naphthalene carboxylic acid by Supersonic Molecular Beam approach

M.V. Nardi¹, R. Verucchi¹, L. Aversa¹, E. Froner², M. Scarpa², L. Pasquardini³, C. Pederzoli³ and S. Iannotta⁴ - ¹CNR-IFN Institute for Photonics and Nanotechnologies Trento Division; ²Università degli Studi di Trento – NanoScience Laboratory Trento; ³FBK Fondazione Bruno Kessler – BioSint Division Trento; ⁴IMEM Istituto per i materiali ed il magnetismo Parma

12.00 Fr-am-B-C6 Controlled Synthesis of fullerenes and bucky-bowls by surface assisted catalysis

Nasiba Abdurakhmanova - Max Planck Institute for Solid State Research Heisenbergstrasse 1 Stuttgart 70569 Germany

12.15 Fr-am-B-C7 A combined reflectance anisotropy spectroscopy and scanning tunnelling microscopy investigation of tetraphenyl porphyrin deposited on graphite

G. Bussetti¹, S. Cirilli¹, A. Violante¹, B. Bonanni¹, P. Chiaradia¹, C. Goletti¹, M. Scarselli¹, M. De Crescenzi¹, D. Monti² and R. Paolesse² - ¹Tor Vergata Univ., Dipartimento di Fisica, v. ricerca scientifica 1, Roma, 00133, Italy; ²Tor Vergata Univ., Dipartimento di Scienze e Tecnologie Chimiche, v. ricerca scientifica 1, Roma, 00133, Italy

12.30 Fr-am-B-C8 Electronic Properties of Nickel-octaethylporphyrins Self Assembled ordered layers on Au(111)

M. Kumar¹, M. Pedio¹, A. Resta², A. Verdini¹, L. Floreano¹, A. Cossaro¹, A. Giglia¹ and R. Felici² - ¹IOM-CNR TASC laboratory, Area Science Park, 34949 Basovizza Trieste, Italy; ²ESRF, F-38043 Grenoble, France

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Session Fr-am-C

T12 - Nanobiotechnologies

ROOM C - CNR

CHAIRMAN: J.M. Seddon

9.45 INVITED - Fr-am-C- I1 Label-free sensing of biomolecules and neural networks with ultra-thin film organic field effect transistors

F. Biscarini, P. Stoliar, E. Bystrenova, B. Chelli, A. Shehu, S. Casalini, S. Quiroga - *CNR-Istituto per lo Studio dei Materiali Nanostrutturati, Bologna Italy*

10.15 Fr-am-C-C1 Semiconductor quantum dots with interface states in biology and medicine

T.V. Torchynska - *ESFM – National Polytechnic Institute, México D. F. 07738, México,*

10.30 Fr-am-C-C2 DNA Metallocomplexes and Their Application for the Creation of Nanostructures

N. Kasyanenko, I. Volkov, E. Morozova, A. Puchkova, P. Sokolov - *Faculty of Physics, St.-Petersburg State University, 198504, Russia*

Coffee Break

11.15 INVITED - Fr-am-C-I2 Cell Membrane Penetrating Nanoparticles

F. Stellacci¹ - ¹*Department of Materials Science and Engineering, EPFL, Lausanne, CH-1015, Switzerland*

11.45 Fr-am-C-C3 Receptor-Mediated Interactions between Gold Nanoparticles and Endothelial Cells: Towards Manipulation of Angiogenesis

Dorota Bartczak^a, Tilman Sanchez-Elsner^b, Tim Millar^b, Antonios G. Kanaras^{a*} - ^a*School of Physics and Astronomy, The University of Southampton, Southampton, UK;* ^b*School of Medicine, General Hospital, Southampton, UK;*

12.00 Fr-am-C-C4 On chip magnetic conduit networks for manipulating biological entities

A. Torti¹, E. Sogne¹, M. Donolato¹, D. Petti¹, R. Bertacco¹ - ¹*L-NESS–Dipartimento di Fisica Politecnico di Milano, Via Anzani 42, 22100 Como, Italy*

12.15 Fr-am-C-C5 Effect of Gold Nanoparticle Morphology on Adsorbed Protein Structure & Function

J.E. Gagner^{1,2}, J.S. Dordick^{1,3}, and R.W. Siegel^{1,2} - ¹*Rensselaer Nanotechnology Center;* ²*Department of Materials Science and Engineering;* ³*Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, 110 8th Street Troy, New York 12180, USA*

12.30 Fr-am-C-C6 Biofunctionalized magnetic nanocomposite particles

M. A. Martins¹, A. J. Guiomar², V. S. Amaral³, T. Trindade¹ - ¹*Department of Chemistry, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal;* ²*Department of Biochemistry, FCT, University of Coimbra, 3001-401 Coimbra, Portugal;* ³*Department of Physics, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal*

Friday, Sept. 17 Morning

Session Fr-am-D

T13 - Nanocomposites materials + T27 - Multiscale materials

ROOM D - Physics MARCONI building

CHAIRMAN: S. Iannotta

- 9.45 **INVITED - Fr-am-D-I1 Functionalization of the Thermal Properties of Composite/Nanocomposite Materials**
M. S. Aly-Hassan^{1,2,3} - ¹Venture Laboratory, Kyoto Institute of Technology, Matsugasaki, Sakyo-Ku, Kyoto-Shi, Kyoto 606-8585, Japan; ²Japan Aerospace Exploration Agency, 3-1 Yoshinodai, Sagami-hara-Shi, Kanagawa-Ken 229-8510, Japan; ³Hassan Associates Co. Ltd. 33-401 Nanakayamadai-Cho 50, Ogurisu, Fushimi-Ku, Kyoto-Shi, Kyoto 601-1463, Japan
- 10.15 **Fr-am-D-C1 Production of core-shell nanofibers using coaxial electrospinning**
K. Kanjanapongkul¹, T. Yoovidhya¹, S. Wongsasulak¹, and J. Weiss² - ¹King Mongkutt University of Technology Thonburi, Department of Food Engineering, Bangkok, 10140, Thailand; ²University of Hohenheim, Institute of Food Science and Biotechnology, 70599 Stuttgart, Germany
- 10.30 **Fr-am-D-C2 Acentric nanocrystals for Piezoelectric and Nonlinear Optical Nanocomposites**
L. Houf¹, M. El Kass¹, Y. Mugnier¹, R. Le Dantec¹, R. Hadji², B. Vincent², D. Rouxel², C. Galez¹ - ¹SYMME, Polytech' Savoie, Université de Savoie, BP 80439, 74944, Annecy Le Vieux Cedex, France; ²IJL, UMR CNRS 7198, Faculté des Sciences et Techniques, BP 70239, 54506 Vandoeuvre Les Nancy Cedex, France
- Coffee Break**
- 11.15 **Fr-am-D-C3 Ag-titanate nanofibers composite prepared via polyelectrolyte multilayers.**
I. Bračko¹, M. Logar¹, B. Jančar¹ and D. Suvorov¹ - ¹Institute Jožef Stefan, Advanced Materials Department, Jamova 39, Ljubljana, 1000, Slovenia
- 11.30 **Fr-am-D-C4 Functionalization of porous silicon by deposition of low dimensional ferromagnetic nanostructures**
K. Rumpf¹, P. Granitzer¹, M. Albu², P. Pölt² - ¹Institute of Physics, Karl Franzens University Graz, Universitaetsplatz 5, 8010 Graz, Austria; ²Institute for Electron Microscopy, University of Technology Graz, Steyrergasse 17, 8010 Graz, Austria
- 11.45 **Fr-am-D-C5 Mechanical and Dynamic Mechanical Properties of Carbon Nanotube Added Conductive Polypropylene Nanocomposite Fibers**
M.S. Ersoy¹, E. Önder¹, N. Sarier², M. Skrifvars³ - ¹Department of Textile Engineering, Istanbul Technical University, Turkey; ²Department of Civil Engineering, Istanbul Kültür University, Turkey; ³School of Engineering, University of Borås, Sweden
- 12.00 **Fr-am-D-C6 Interfacial polymerization: a suitable route to prepare homogeneous, conductive and transparent graphene/polyaniline and carbon nanotubes/polyaniline thin films**
S.H. Domingues¹, R.V. Salvatierra¹, M.M. Oliveira^{1,2}, A.J.G. Zarbin¹ - ¹Department of Chemistry, Federal University of Paraná (UFPR), CP 19081, CEP 81531-990, Curitiba-PR-Brazil; ²Department of Biology and Chemistry, Technological Federal University of Paraná (UTFPR), Curitiba-PR-Brazil
- 12.15 **Fr-am-D-C7 Morphology and properties of nanocomposites formed from ethylene-vinyl acetate copolymers containing graphene, carbon nanotubes and expanded graphite**
V. Cecen^{1,2}, P. Steurer², M. Wissert¹, K.-A. Wartig¹, R. Vogt¹, R. Thomann², C. Friedrich^{1,2} - ¹Freiburger Materialforschungszentrum, Stefan-Meier-Str. 21, D-79104 Freiburg i. Br., Germany; ²Institut für Makromolekulare Chemie, Stefan-Meier-Str. 31, D-79104 Freiburg i. Br., Germany
- 12.30 **Fr-am-D-C8 Laser welding of polymer foils by using metal nanoparticles as absorber layer**
M. Neuber, T. Hanke, L. Berthold, J. Lucas, A. Heilmann - Fraunhofer Institute for Mechanics of Materials, Walter-Hülse-Str.1, 06120 Halle (Saale), Germany

Friday, Sept. 17 Morning

Session Fr-am-E

T18 - Nanoparticles

ROOM E - RETTORATO Building

CHAIRMAN: J.M. Greneche

- 9.45 **INVITED - Fr-am-E-I1** A novel strategy for the synthesis of metal oxides nanocrystals using high molecular weight solvents: Synthesis and Functionalization in a Single Step
Edson R. Leite¹ and R. H. Gonsalves¹ - ¹Chemistry Department – Federal University of Sao Carlos, Sao Carlos, 13565-905, CP 676, SP, Brazil
- 10.15 **Fr-am-E-C1** Preparation of copper and copper oxide nanoparticles
R. Prucek¹, L. Kvitek¹, Aleš Panáček¹ and R. Zbořil^{1,2} - ¹Department of Physical Chemistry, Faculty of Science, Palacky University, 17 Listopadu 12, Olomouc 771 46, Czech Republic; ²Centre for Nanomaterial Research, Palacky University, Slechtitelu 11, Olomouc, 783 71, Czech Republic
- 10.30 **WITHDRAWN Fr-am-E-C2** Shape-Controlled Synthesis of Ferroelectric Barium Titanate Colloidal Nanocrystals
S. Adireddy, A. Yourdkhani, A. K. Perez and G. Caruntu - Chemistry Department and the Advanced Materials Research Institute University of New Orleans
- 11.15 **Fr-am-E-C3** Experimental and Theoretical Analysis of Size Dependent Microstructure for Ag-Ni Nanoparticles
C. Srivastava¹, S. Chithra¹, K. D. Malviya¹, S. K. Sinha¹ and K. Chattopadhyay¹ - ¹Department of Materials Engineering, Indian Institute of Science, Bangalore-560012, India
- 11.45 **Fr-am-E-C5** Low-temperature preparation of α -Al₂O₃ nanoplatelets from bayerite and potassium sulfate mixture
Xinghua Su and Jiangong Li - Institute of Materials Science and Engineering, Lanzhou University, Lanzhou 730000, China
- 12.00 **Fr-am-E-C6** Size effect of starting nanoparticles on the electrical and piezoelectric properties of barium stannate titanate ceramics
K. Chandramani Singh¹, A.K. Nath¹, Radhapiyari Laishram² and O. P. Thakur² - ¹Department of Physics, Sri Venkateswara College, University of Delhi, New Delhi-110021, India; ²Solid State Physics Laboratory, Lucknow Road, Timarpur, Delhi – 110054, India
- 12.15 **Fr-am-E-C7** Sound assisted fluidization and mixing of binary mixtures of nanoparticles
P. Ammendola¹, R. Chirone¹, and F. Raganati¹ - ¹Istituto di Ricerche sulla Combustione - CNR, P.le Tecchio 80, 80125 Napoli, Italy
- 12.30 **Fr-am-E-C8** Preparation of Aqueous Highly Conductive Metal Nanoparticle Ink and its Inkjet Printing
Beyong-Hwan Ryu, Sunho Jeong, Youngmin Choi, Hae Chon Song, Ji-Yoon Lee, Priyesh V. More, and Byung Seok Lee - Device Materials Research Center, Korea Research Institute of Chemical Technology, P.O. Box 107, Yuseong, Daejeon, 305-600, Korea
- 12.45 **Fr-am-E-C9** Optical properties of ClAlPc nanoparticles thin film using as an effective gas sensor device
M. J. Jafari, E. Karimi-Kerdabadi, and M. E. Azim-araghi - Applied Physics Division, Physics Department, Tarbiat Moallem University, 49 Mofateh Avenue, Tehran, Iran

Friday, Sept. 17 Morning

Session Fr-am-F

T19 - Carbon nanotubes and graphene

ROOM F - Chemistry CAGLIOTI building (2nd floor)

CHAIRMAN: R. Paul

9.45 INVITED - Fr-am-F-I1 Multi wall carbon nanotube–silicon heterojunction photovoltaic devices
M. De Crescenzi, P. Castrucci, L. Camilli, S. Del Gobbo and M. Scarselli - *Dipartimento di Fisica - Università di Roma Tor Vergata 00133, Roma - Italy*

10.15 Fr-am-F-C2 X-ray source utilizing carbon nanotube-based cold cathodes
M. Fratini¹, A. Rizzo², S. Iacobucci¹, M. Ilie¹, F. Scarinci¹, S. Lagomarsino¹, G. Stefani², Y. Zhang, M. Mann, W.I. Milne - ¹*CNR-IFN (Istituto Fotonica e Nanotecnologia), Via Cineto Romano 42 00156 Roma*; ²*Università degli Studi Roma Tre, via della Vasca Navale 84, 00146 Roma*; ³*Engineering Dept., University of Cambridge, UK*

Coffee Break

11.15 Fr-am-F-C3 A novel photosensor made of MWCNTs grown on silicon substrate
V. Grossi¹, S. Santucci¹, M. Ambrosio², A. Ambrosio³, P. Maddalena³, and M. Passacantando¹ - ¹*Dipartimento di Fisica, Università degli Studi dell'Aquila, Via Vetoio 10, I-67100 Coppito (L'Aquila), Italy*; ²*INFN Sezione di Napoli, Complesso Universitario di Monte Sant'Angelo, Via Cintia, I-80126 Napoli, Italy*; ³*CNR-IFNM, CRS-COHERENTIA and Dipartimento di Scienze Fisiche, Università di Napoli Federico II, Via Cintia, I-80126 Napoli, Italy*

11.30 Fr-am-F-C4 Hydrogen sulphide gas nano-sensors based on MWCNTs for applying in the room temperature
F. Mohammadzadeh¹, M. Jahanshahi¹ and A.M. Rashidi² - ¹*Nanobiotechnology Research Centre, Faculty of Chemical Engineering, Babol University of Technology, Iran*; ²*Department of Nanotechnology, Research Institute of Petroleum Industry, Tehran, Iran*

11.45 Fr-am-F-C5 Loading of model drug on layer-by-layer polyelectrolyte coating of carbon nanotubes
C. Iamsamai¹, S.T. Dubas², U. Ruktanonchai³, A. Soottitantawat⁴, and S. Hannongbua⁵ - ¹*Nanoscience and Technology Program, Graduate School, Chulalongkorn University, Bangkok, 10330, Thailand*; ²*Metallurgy and Materials Science Research Institute, Chulalongkorn University, Bangkok, 10330, Thailand*; ³*National Nanotechnology Center, National Science and Technology Development Agency, Pathumthani, 12120, Thailand*; ⁴*Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, 10330, Thailand*; ⁵*Department of Chemistry, Faculty of Science, Chulalongkorn University, Bangkok, 10330, Thailand*

12.00 Fr-am-F-C6 Pulsed KrF-laser synthesis of single-wall-carbon-nanotubes: effects of catalyst content and furnace temperature on their nanostructure and photoluminescence properties
V. Le Borgne¹, B. Aïssa¹, M. Mohamedi¹, Y.A. Kim², M. Endo², and M. A. El Khakani¹ - ¹*Institut National de la Recherche Scientifique, INRS-Énergie, Matériaux et Télécommunications, 1650 Lionel-Boulet, Varennnes, QC, Canada, J3X 1S2*; ²*Faculty of Engineering, Shinshu University, Wakasato, Nagano-shi 380-8553, Japan*

12.30 Fr-am-F-C8 Synthesis and study of optical and electrical characteristics of a hybrid structure of single wall carbon nanotubes and silver nanoparticles
R. Paul¹, A. Maity¹, P. Kumbhakar¹ and A.K. Mitra¹ - ¹*Nanoscience Laboratory, Department of Physics, National Institute of Technology Durgapur, Durgapur-713209, West Bengal, India*

Friday, Sept. 17 Afternoon

**Plenary lecture
ROOM E – RETTORATO building**

CHAIRMAN: E. Traversa

14.15 PL10 Development of highly efficient dye-sensitized solar cell sub-modules
*Hironori Arakawa - Graduate School of Chemical Science and Technology, Tokyo
University of Science, Shinjuku, Tokyo, 162-0826, Japan*

Friday, Sept. 17 Afternoon

Session Fr-pm-A

T24 - Nanometrology

ROOM A - Physics FERMI building

CHAIRMAN: R.D. Shull

15.30 INVITED - Fr-pm-A-I1 Mapping Protein Distributions with Optical Antennas

C. Hoepfner and H. Fuchs - *Research Group 'Nanobiophotonics' Institute of Physics
University of Muenster Wilhelm-Klemm-Strasse 10 - 48149 Muenster - Germany*

16.00 INVITED - Fr-pm-A-I2 Nanometrology using Size-selected Clusters

Ziyou Li - *Nanoscale Physics Research Laboratory, School of Physics and Astronomy, The
University of Birmingham, Birmingham B15 2TT, U.K.*

16.30 Fr-pm-A-C1 Volumetric measurements of adhered aerosol nanoparticles with an Atomic Force Microscope

K. Dirscherl - *Danish Fundamental Metrology, Matematiktorvet 307, DK-2800 Kgs.
Lyngby, Denmark, kdi@dfm.dtu.dk*

16.45 Fr-pm-A-C2 Nanometrology of X-ray Diffraction

G. Berti¹, F. De Marco² - ¹*Pisa Univ., Laboratorio di Ricerca e Sviluppo in XRD e Centro
Interdipartimentale Ingegnerai dei Materiali – Dip. di Scienze della Terra &, Via S. Maria
24, Pisa, 56126, Italy;* ²*XRD-TOOLS, Via Cosimo Ridolfi 14, 56124 Pisa, Italy*

Friday, Sept. 17 Afternoon

Session Fr-pm-B

T08 - Nanophotonics

ROOM B - Chemistry CAGLIOTI building (Ground floor)

CHAIRMAN: S. Orlando

- 15.30 INVITED - Fr-pm-B-I1 Single-crystalline plasmonic nanostructures**
B. Hecht, P. Biagioni, C. Brünig, P. Geisler, J.-S. Huang, J. Kern, J.C. Prangsma, J. Ziegler - *Nano-Optics & Biophotonics Group, Experimentelle Physik 5, Physikalisches Institut, Wilhelm-Conrad-Röntgen-Center for Complex Material Systems, Universität Würzburg, Am Hubland, D-97074 Würzburg, Germany*
- 16.00 Fr-pm-B-C1 Optical properties of self-organized silver and gold nanoparticles on rippled dielectric surfaces**
S. Camelio, D. Babonneau, L. Simonot, E. Vandenhecke, F. Pailloux - *Institut PPRIME, Département de Physique et Mécanique des Matériaux, UPR 3346 - CNRS-Université de Poitiers-ENSMA, SP2MI - BP 30179 86962 Chasseneuil- Futuroscope Cedex - France*
- 16.15 Fr-pm-B-C2 Electrochemically tunable photonic metamaterial**
L.-H. Shao, M. Ruther, S. Linden, J. Weissmüller, M. Wegener - *Institut für Nanotechnologie, Institut für Angewandte Physik, and DFG-Center for Functional Nanostructures (CFN), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*
- 16.30 Fr-pm-B-C3 Intersubband transitions in the conduction band of Ge/SiGe MQWs**
M. De Seta¹, Y. Busby¹, G. Capellini¹, F. Evangelisti¹, M. Ortolani², M. Virgilio³, G. Grosso³, G. Pizzi⁴, A. Nucara⁵ and P. Calvani⁵ - ¹*Dipartimento di Fisica, Università di Roma Tre, via Vasca Navale 84, I-00146 Roma, Italy;* ²*CNR-Istituto di Fotonica e Nanotecnologie, via Cineto Romano 42, I-00156 Roma, Italy;* ³*NEST-Istituto Nanoscienze-CNR and Dipartimento di Fisica "E. Fermi", Università di Pisa, largo Pontecorvo 3, I-56127 Pisa, Italy;* ⁴*NEST-Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza dei Cavalieri 7, I-56126 Pisa, Italy;* ⁵*CNR-SPIN and Dipartimento di Fisica, Università di Roma La Sapienza, P.le A. Moro 2, I-00185 Roma, Italy*
- 16.45 Fr-pm-B-C4 XPS and UPS analysis of a new organic molecule for DFB lasers fabrication: Erbium-tris(8-hydroxyquinoline)**
M. Donarelli¹, F. Bisti¹, S. Prezioso¹, P. De Marco^{1,2}, and L. Ottaviano^{1,2} - ¹*Università dell'Aquila, Dipartimento di Fisica, Via Vetoio, 67100 L'Aquila, Italy;* ²*CNR-SPIN L'Aquila, Via Vetoio, 67100, Coppito-L'Aquila, Italy*

Friday, Sept. 17 Afternoon

Session Fr-pm-C

T12 - Nanobiotechnologies

ROOM C - CNR

CHAIRMAN: F. Biscarini

15.30 INVITED - Fr-pm-C-I1 Amphiphile self-assembling materials with potential applications in nanomedicine

J. M. Seddon¹, N. J. Brooks¹, A. I. I. Tyler¹, T.-Y. D. Tang¹, G. C. Shearman¹, O. Ces¹, R. V. Law¹, R. H. Templer¹, C. V. Kulkarni², and A. M. Seddon³ - ¹*Chemistry Department and Chemical Biology Centre, Imperial College London, London SW7 2AZ, UK;* ²*Karl-Franzens University, Physical Chemistry, Heinrichstrasse 28, A-8010 Graz, Austria;* ³*Bristol Centre for Functional Nanomaterials, Tyndall Avenue, Bristol BS8 1FD, UK*

16.00 Fr-pm-C-C2 X-ray micro-diffraction imaging: a new tool to study biomaterials for tissue engineering

Cedola A.¹, Giannini C.³, Guagliardi A.³, Sorrentino A.¹, Ladisa M.³, Lagomarsino S.¹, Cancedda R.² and Mastrogiacomo M.² - ¹*Istituto di Fotonica e Nanotecnologie - CNR, Roma, Italy;* ²*Istituto Nazionale per la Ricerca sul Cancro, and Dipartimento di Oncologia, Biologia e Genetica dell'Università di Genova, Italy;* ³*Istituto di Cristallografia, CNR-IC, 70126 Bari, Italy*

16.15Fr-pm-C-C3 Grafting poly(L,L-lactide) on iron oxide nanoparticles: towards a bifunctional drug delivery system

Jian Qin¹, Sophie Laurent², Robert N. Muller², Mamoun Muhammed¹ - ¹*Functional Materials Division, Royal Institute of Technology (KTH), 164 40 Kista, Sweden;* ²*Department of General, Org. & Biomed. Chem., NMR and Molecular Imaging Laboratory, University of Mons, B-7000 Mons, Belgium*

16.30 Fr-pm-C-C4 Neurons sense nanoscale roughness with nanometer sensitivity

V. Brunetti, G. Maiorano, L. Rizzello, B. Sorce, S. Sabella, G. Vecchio, R. Cingolani and P. P. Pompa - *Italian Institute of Technology, Center for Bio-Molecular Nanotechnology, Via Barsanti, 73010 Arnesano (Lecce), Italy*

16:45 MOVED from We-am-B-C6 Fr-pm-C-C5 Synthesis of Core-Shell Magnetic Nanoparticles Fe₃O₄@Cu@Au like a probe for Biomedical Application: Imaging and Drug Delivery

R. Salvati¹, F. Nepi¹, G. Doddi¹, M. Barteri¹ - ¹*Università di Roma "La Sapienza", Dipartimento di Chimica, P.le Aldo Moro 5, Roma, 00185, Italy*

Friday, Sept. 17 Afternoon

Session Fr-am-D

T22 - Defects in nanostructures

ROOM D - Physics MARCONI building

CHAIRMAN: V. Petkov

15.30 INVITED - Fr-pm-D-I1 Advanced characterization of nanostructured materials: positron annihilation spectroscopy

F. Tuomisto - *Department of Applied Physics, Aalto University, P.O.B. 11100, FI-00076 Aalto, Espoo, Finland*

16.00 INVITED - Fr-pm-D-I2 Counting dopants/atoms in (3D) nanoscale structures

W. Vandervorst^{1,2}, P. Eyben¹, A. Schulze^{1,2}, J. Mody^{1,2}, S. Koelling^{1,2}, M. Gilbert¹ - ¹*Imec, Kapeldreef 75, B-3001 Leuven . Belgium*; ²*Instituut voor Kern- en Stralingsfysica, K. U. Leuven, Celestijnenlaan 200D B-3001 Leuven, Belgium*

16.30 Fr-pm-D-C1 Crystal and Defect Analysis in Corneal Nipple Nanostructures on Nymphalis Antiopa Butterfly Eyes

U. Erb - *University of Toronto, Materials Science and Engineering, 184 College Street, Toronto, Ontario, M5S 3E4, Canada*

16.45 Fr-pm-D-C2 The origin of sample-size dependant plasticity in nanoscale metal pillars

A. Rinaldi¹, S. Licoccia¹, and E. Traversa²
¹*Univ. Rome Tor Vergata, NAST and Chemical Science and Technology Dept., Via della Ricerca Scientifica, 00133, Rome, Italy*; ²*National Institute for Materials Science, International Research Center for Materials Nanoarchitectonics (MANA), 1-1 Namiki, Tsukuba, 305-0044, Ibaraki, Japan*

Friday, Sept. 17 Afternoon

Session Fr-am-E

T18 - Nanoparticles

ROOM E - RETTORATO Building

CHAIRMAN: E.R. Leite

15.30 INVITED - Fr-pm-E-I2 Polymer-based multifunctional magnetic nanoparticles for biomedical applications

A. Millán, R. Piñol, and F. Palacio

Instituto de Ciencia de Materiales de Aragón, CSIC – Universidad de Zaragoza, Departamento de Física de la Materia Condensada, Facultad de Ciencias - 50009 Zaragoza. Spain

16.00 Fr-pm-E-C1 Molecular Assembly via Nano-size Mixed Micelle System: A Model Study from Chitosan Nanosphere and pH–thermo-multi-responsive Fluorescent Micelle

N. Suchao-in,^{1,2} S. Perrier³, and S. Chirachanchai^{1,2} - ¹*The Petroleum and Petrochemical College, Chulalongkorn University, Soi Chula 12, Wangmai, Pathumwan, Bangkok, 10330, Thailand;* ²*Center for Petroleum and Petrochemical, Chulalongkorn University, Soi Chula 12, Wangmai, Pathumwan, Bangkok, 10330, Thailand;* ³*Key Centre for Polymers & Colloids, School of Chemistry, Building F11, Eastern Avenue, University of Sydney, NSW, 2006, Australia*

16.15 Fr-pm-E-C3 Boronic-acid-protected silver nanoclusters: High affinity for chiral saccharides and induced optical activity

H. Yao¹, M. Saeki¹, and K. Kimura¹ - ¹*Graduate School of Material Science, University of Hyogo, 3-2-1 Koto, Kamigori-cho, Hyogo 678-1297, Japan*

16.30 Fr-pm-E-C4 The potential toxicity and reactivity of hydroxylapatite (HAP) nanoparticles: implications for nanobiomaterial safety

K. Skartsila¹ and E. Valsami-Jones¹ - ¹*Natural History Museum, Dep. of Mineralogy, NaNoRISK Team, Cromwell Rd, SW7 5BD, London, UK*

Friday, Sept. 17 Afternoon
Session Fr-pm-F
T19 - Carbon nanotubes and graphene
ROOM F - Chemistry CAGLIOTI building (2nd floor)

CHAIRMAN: V. Grossi

- 15.30 Fr-pm-F-C1 Self-rewetting carbon nanofluid as working fluid for space and terrestrial heat pipes**
R. Di Paola¹, R. Savino, D. Mirabile Gattia², R. Marazzi², M. Vittori Antisari² - ¹University of Naples Federico II, DIAS Dept., Napoli, Italy; ²MATCOMP, ENEA, Via Anguillarese 301, 00123, Rome, Italy
- 15.45 Fr-pm-F-C2 Chemical synthesis and investigation on photoluminescence properties of triphenylphosphine functionalized single wall carbon nanotubes**
R. Paul¹, P. Kumbhakar¹ and A.K. Mitra¹ - ¹Nanoscience Laboratory, Department of Physics National Institute of Technology Durgapur, Durgapur-713209, West Bengal, India
- 16.00 Fr-pm-F-C3 Graphene-based Josephson junctions: fabrication and characterization**
C. Portesi, M. Bruna, E. Taralli, L. Lolli, M. Rajteri, S. Borini, E. Monticone - Istituto Nazionale di Ricerca Metrologica Strada delle Cacce 91 I-10135 Torino Italy
- 16.15 Fr-pm-F-C4 Unraveling the bimetallic nature of the Fe/Al catalyst in the super long growth of carbon nanotubes**
R. K. Joshi¹, J. Engstler¹, L. Houben², M. B. Sadan², A. Weidenkaff³, P. Mandaliev³, A. Issanin⁴ and J. J. Schneider¹ -
¹Technische Universität Darmstadt, Fachbereich Chemie, Eduard-Zintl- Institut, Fachgebiet Anorganische chemie, Petersenstrasse 18, 64287 Darmstadt, Germany. E-mail: joerg.schneider@ac.chemie.tu-darmstadt.de ²Ernst-Ruska-Zentrum für Elektronenmikroskopie (ER-C), 52425 Jülich, Germany, ³Eidgenössische Material-Prüfungsanstalt, EMPA 8600 Duebendorf, Switzerland, ⁴Technische Universität Darmstadt, Fachbereich Material und Geowissenschaften, Fachgebiet Oberflächenforschung, Petersenstrasse 23, Darmstadt, Germany
- 16.30 Fr-pm-F-C5 Strong carbon nanotube doping by *m*-tweezer molecules**
A. Wurl¹, T. Reumann¹, E. M. Pérez², N. Martín² and Ch. Klinkel¹ - ¹Institute of Physical Chemistry, University of Hamburg, Grindelallee 117, 20146 Hamburg, Germany; ²Departamento de Química Orgánica, Facultad de Química, Universidad Complutense, E-28040 Madrid, Spain
- 16.45 Fr-pm-F-C6 Chemical structure and thermal behaviour of oxidised graphene**
R. Larciprete¹, A. Baraldi^{2,3}, S. Fabris^{4,5}, T. Sun⁵, P. Lacovig^{6,2}, S. Gardonio⁶ and S. Lizzit⁶ - ¹CNR- Institute for Complex Systems, Roma, Italy, ²University of Trieste-Physics Department and CENMAT, Trieste, ³CNR-IOM Lab. TASC, Trieste, Italy, ⁴CNR-IOM DEMOCRITOS Simulation Center, Trieste, Italy, ⁵SISSA, Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy, ⁶Sincrotrone Trieste SCpA, Trieste, Italy