

# 18 September 2006 (Monday)

## 9.00 OPENING

### SESSION I - NEW TRENDS IN ION BEAM PROCESSING

9.30 **I - 77 Nanoscale morphology control using ion beams**

Michael Aziz

Harvard University

10.00 **I - 80 Fabrication of patterned porous silicon microstructures using proton beam writing**

Mark Breese, Dharmalingham Mangaiyarkarasi, Ee Jin Teo

National University of Singapore

10.30 **I - 487 Ion beam synthesis of photonic nanomaterials**

Albert Polman

FOM-Institute AMOLF, Amsterdam, The Netherlands

11.00 **COFFEE BREAK**

### SESSION II –NANOCRYSTALS

11.30 **I - 540 Ion beam-induced quantum dot synthesis in glass**

R. Espiau de Lamaestre<sup>(1,2)</sup>, H. Bernas<sup>(1)</sup>

<sup>(1)</sup>CSNSM/CNRS, Université Paris Sud, France

<sup>(2)</sup>Fontainebleau Research Center, Corning SAS, France

12.00 **O - 86 Effect of ion irradiation and post-annealing atmosphere on the photoluminescence induced by Si nanocrystals produced by hot implantation in SiO<sub>2</sub>**

Uilson Sias<sup>(1)</sup>, Moni Behar<sup>(2)</sup>, Henri Boudinov<sup>(2)</sup>, Eduardo Moreira<sup>(3)</sup>

<sup>(1)</sup>Centro Federal de Educação Tecnológica de Pelotas

<sup>(2)</sup>Instituto de Física, UFRGS

<sup>(3)</sup>Centro Universitário Franciscano

12.15 **O - 471 Waveguiding properties of Er-implanted silicon-rich oxides**

Robert Elliman, Manuel Forcales, Andrew Wilkinson, Nathanael Smith

Australian National University

12.30 **O - 296 Ion beam synthesis of CdSe QDs studied by GISAXS and Raman spectroscopy**

Uros Desnica<sup>(1)</sup>, I. Dunja Desnica Frankovic<sup>(1)</sup>, Pavo Dubcek<sup>(1)</sup>, Kresimir Furic<sup>(1)</sup>, Sigrid Bernstorff<sup>(2)</sup>

<sup>(1)</sup>R. Boskovic Institute, Zagreb, Croatia

<sup>(2)</sup>Sincrotrone Trieste, Basovizza, Italy

13.00 **LUNCH**

14.30 **POSTER SESSION I**

### SESSION III – METALLIC NANOCRYSTALS

16.30 **I - 545 Formation, vibration and irradiation of elemental metallic nanocrystals**

Bernt Johannessen<sup>(1)</sup>, Patrick Kluth<sup>(1)</sup>, Raquel Giulian<sup>(1)</sup>, D. Sprouster, L.L. Araujo, D.J. Llewellyn<sup>(1)</sup>, A.P. Byrne<sup>(1)</sup>, Garry Foran<sup>(2)</sup>, David Cookson<sup>(3)</sup>, Mark Ridgway<sup>(1)</sup>

<sup>(1)</sup>Department of Electronic Materials Engineering, The Australian National University, Canberra, Australia

<sup>(2)</sup>Australian Nuclear Science and Technology Organisation, Menai, Australia

<sup>(3)</sup>Australian Synchrotron Research Program, Argonne, USA

17.00 **O - 95 Ion beam irradiation of embedded nanoparticles: towards an in-situ control of size and spatial distribution**

Giancarlo Rizza<sup>(1)</sup>, H. Cheverry<sup>(1)</sup>, T. Gacoin<sup>(2)</sup>, S. Henry<sup>(3)</sup>

<sup>(1)</sup>Laboratoire des Solides Irradiés, Palaiseau, France

<sup>(2)</sup>Laboratoire de Physique de la Matière Condensée, Palaiseau, France

<sup>(3)</sup>Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse, Campus, France

- 17.15 **O - 443 Ion beam irradiation of noble metal alloy nanoclusters in silica**  
Giovanni Mattei<sup>(1)</sup>, Valentina Bello<sup>(1)</sup>, Paolo Mazzoldi<sup>(1)</sup>, Giovanni Pellegrini<sup>(1)</sup>, Chiara Maurizio<sup>(2)</sup>, Giancarlo Battaglin<sup>(3)</sup>  
<sup>(1)</sup>University of Padova, Dept. of Physics, Padova, Italy  
<sup>(2)</sup>CNR-INFM, ESRF, GILDA-CRG, Grenoble, France  
<sup>(3)</sup>University of Venice, Dept. of Chem. Physics, Venice, Italy
- 17.30 **O - 485 Spatial control of metal nanoparticle assembly by laser processing under Cu ion implantation into SiO<sub>2</sub>**  
Naoki Kishimoto<sup>(1)</sup>, Kenji Saito<sup>(2)</sup>, Jin Pan<sup>(2)</sup>, Oleg Plaksin<sup>(3)</sup>, Yoshio Takeda<sup>(1)</sup>  
<sup>(1)</sup>National Institute for Materials Science  
<sup>(2)</sup>University of Tsukuba  
<sup>(3)</sup>SSC RF - A. I. Leypunsky Institute of Physics and Power Eng.
- 17.45 **O - 531 2D spatial control of metal nanoparticles by multi-laser lithography and heavy-ion irradiation**  
Haisong Wang, Yoshihiko Takeda, Kenichiro Kono, Naoki Kishimoto,  
National Institute for Materials Science

#### SESSION IV - SINGLE ION IMPLANTATION

- 18.00 **I - 88 Ion implantation with scanning probe alignment**  
Thomas Schenkel<sup>(1)</sup>, Arun Persaud<sup>(2)</sup>  
<sup>(1)</sup>E. O. Lawrence Berkeley National Laboratory, Berkeley, USA  
<sup>(2)</sup>Institute of Nanostructure Technologies and Analytics, University of Kassel, Germany
- 18.30 **O - 535 A reliable method for detecting single-ion incidence**  
Takahiro Shinada, Takahiro Kobayashi, Hideki Nakayama, Tomonori Kurosawa, Iwao Ohdomari  
Waseda University
- 18.45 **O - 11 Diffusion behavior of dopant phosphorus ions in Si nano-wire**  
Aya Seike, Itsutaku Sano, Yuuki Sugiura, Iwao Ohdomari  
Waseda University

## 19 September 2006 (Tuesday)

#### SESSION V - MAGNETIC MATERIALS

- 8.45 **I - 158 Ion-induced nanoscale structures: a tool for tuning magnetic anisotropy in ultrathin films**  
Riccardo Moroni<sup>(1)</sup>, Francesco Bisio<sup>(2)</sup>, Corrado Boragno<sup>(3)</sup>, Francesco Buatier de Mongeot<sup>(3)</sup>, Maurizio Canepa<sup>(3)</sup>, Lorenzo Mattered<sup>(3)</sup>, Ugo Valbusa<sup>(3)</sup>  
<sup>(1)</sup>CNISM Sede consorziata di Genova  
<sup>(2)</sup>CNR-INFM Unità di Genova  
<sup>(3)</sup>Dipartimento di Fisica dell'Università di Genova
- 9.15 **O - 151 Diluted magnetic semiconductors created by non-equilibrium processing - new challenges for ion beams**  
Kay Potzger, Shengqiang Zhou, Gufei Zhang, Helfried Reuther, Georg Talut, Arndt Mücklich, Frank Eichhorn, Norbert Schell,  
Rainer Grötzschel, Wolfgang Skorupa, Manfred Helm, Wolfgang Anwand, Gerhard Brauer, Jürgen Fassbender  
Institute for Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf
- 9.30 **O - 3 Ion implanted Mn-Ge alloys: structural, electronic, and magnetic properties**  
Luca Ottaviano<sup>(1)</sup>, Maurizio Passacantando<sup>(1)</sup>, Adriano Verna<sup>(1)</sup>, Pietro Parisse<sup>(1)</sup>, Silvia Picozzi<sup>(1)</sup>, Alessandra Continenza<sup>(1)</sup>,  
Franco D'Orazio<sup>(1)</sup>, Franco Lucari<sup>(1)</sup>, Roberto Gunnella<sup>(2)</sup>, Giuliana Impellizzeri<sup>(3)</sup>, Francesco Priolo<sup>(3)</sup>  
<sup>(1)</sup>Dipartimento di Fisica Università dell'Aquila  
<sup>(2)</sup>Dipartimento di Fisica Università di Camerino (MC)  
<sup>(3)</sup>MATIS-CNR-INFM & Dipartimento di Fisica e Astronomia Università di Catania
- 9.45 **O - 237 Tailoring magnetic properties by implantation doping of thin NiFe layers**  
Juergen Fassbender<sup>(1)</sup>, Johannes von Borany<sup>(1)</sup>, Arndt Mücklich<sup>(1)</sup>, Kay Potzger<sup>(1)</sup>, Wolfhard Möller<sup>(1)</sup>, Jeffrey McCord<sup>(2)</sup>, Ludwig Schultz<sup>(3)</sup>, Roland Mattheis<sup>(3)</sup>  
<sup>(1)</sup>Institute of Ion Beam Physics and Materials Research, Dresden, Germany  
<sup>(2)</sup>IFW Dresden, Institute for Metallic Materials, Dresden, Germany  
<sup>(3)</sup>Institute for Physical High Technology, Jena, Germany
- 10.00 **O - 180 Synthesis of nanosized Fe-Co granular alloys by ion implantation and TMR effect**  
Nobuyuki Hayashi<sup>(1)</sup>, Tamotsu Toriyama<sup>(2)</sup>, M. Yamashiro<sup>(2)</sup>, Y. Oguri<sup>(3)</sup>, K. Fukuda<sup>(3)</sup>, I. Sakamoto<sup>(4)</sup>, M. Hasegawa<sup>(4)</sup>  
<sup>(1)</sup>Kurume Institute of Technology  
<sup>(2)</sup>Musashi Institute of Technology  
<sup>(3)</sup>Tokyo Institute of Technology, Tokyo, Japan  
<sup>(4)</sup>AIST, Ibaraki, Japan

10.15 **O - 422 Magnetic easy-axis switching in PtCoPt and AuCoAu sandwiches induced by nitrogen ion beam irradiation**  
*Thomas Blon<sup>(2)</sup>, Gerard BenAssayag<sup>(1)</sup>, Jean Claude Ousset<sup>(1)</sup>, Béatrice Pécassou<sup>(1)</sup>, Alain Claverie<sup>(1)</sup>, Etienne Snoeck<sup>(1)</sup>*  
<sup>(1)</sup>CEMES/CNRS  
<sup>(2)</sup>PCPM

10.30 **O - 319 Formation of anisotropic ferromagnetic response in rutile (TiO<sub>2</sub>) implanted with cobalt ions**  
*R.I. Khaibullin<sup>(1)</sup>, S.Z. Ibragimov<sup>(2)</sup>, L.R. Tagirov<sup>(2)</sup>, V.N. Popok<sup>(3)</sup>, I.B. Khaibullin<sup>(1)</sup>*  
<sup>(1)</sup>Kazan Physical-Technical Institute of RAS, Kazan, Russia  
<sup>(2)</sup>Kazan State University, Kazan, Russia  
<sup>(3)</sup>Goteborg University, Goteborg, Sweden

10.45 **COFFEE BREAK**

### SESSION VI - FOCUSED ION BEAM PROCESSING

11.15 **I - 544 Focused ion beam deposition for 3D nanostructure fabrication**  
*S. Matsui*  
*University of Hyogo and CREST JST, Tokyo, Japan*

11.45 **O - 114 Ion beam pattern fabrication with few-nanometer resolution**  
*John Baglin<sup>(1)</sup>, Daryush Ila<sup>(2)</sup>, Wilhelm Bruenger<sup>(3)</sup>, Andrew Kellock<sup>(1)</sup>, Naoki Kishimoto<sup>(4)</sup>*  
<sup>(1)</sup>IBM Almaden Research Center, San Jose, USA  
<sup>(2)</sup>Alabama A&M University Research Institute, Normal, USA  
<sup>(3)</sup>Fraunhofer Institute, ISiT, Itzehoe, Germany  
<sup>(4)</sup>National Institute of Materials Science, Tsukuba, Japan

12.00 **O - 174 FIB Fabrication of Nanostructures in SiC**  
*Ryan Davis, Sarit Dhar, Leonard Feldman*  
Vanderbilt University

12.15 **O - 194 FIB induced cobalt disilicide nanowire growth in silicon**  
*Bernd Schmidt, Chavkat Akhmadaliev, Lothar Bischoff*  
Research Center Rossendorf, Dresden, Germany

12.30 **O - 235 Modeling of focused-ion-beam-based synthesis of nanowire structures**  
*Lars Röntzsch, Karl-Heinz Heinig*  
Research Center Rossendorf

12.45 **O - 300 Synthesis of nanowires in room temperature ambient with a focused ion beam**  
*Alois Lugstein, Christoph Schöndorfer, Emmerich Bertagnolli*  
Vienna University of Technology

13.00 **LUNCH**

14.30 **POSTER SESSION II**

### SESSION VII - HIGH ENERGY IONS IRRADIATION

16.30 **I - 219 Novel and nanostructured optical waveguides by means of using in-depth controlled electronic damage of swift heavy ions**  
*José Olivares<sup>(1)</sup>, A. García-Navarro<sup>(2)</sup>, A. Méndez<sup>(2)</sup>, F. Agulló-López<sup>(2)</sup>, Gastón García<sup>(2)</sup>, A. García-Cabañes<sup>(3)</sup>, M. Carrascosa<sup>(3)</sup>*  
<sup>(1)</sup>Instituto de Óptica, CSIC, Madrid, Spain  
<sup>(2)</sup>Centro de Microanálisis de Materiales (CMAM), UAM, Madrid, Spain  
<sup>(3)</sup>Depto. Física de Materiales (C-IV), UAM, Madrid, Spain

17.00 **O - 136 Quantification of nuclear damage in high energy ion implanted Lithium Niobate**  
*Marco Bianconi<sup>(1)</sup>, Nicola Argiolas<sup>(2)</sup>, Marco Bazzan<sup>(2)</sup>, Gian Giuseppe Bentini<sup>(1)</sup>, Annalisa Cerutti<sup>(1)</sup>, Marco Chiarini<sup>(3)</sup>, Giuseppe Pennestri<sup>(3)</sup>, Paolo Mazzoldi<sup>(2)</sup>, Cinzia Sadd<sup>(2)</sup>, Marco Servidori<sup>(1)</sup>*  
<sup>(1)</sup>CNR-IMM  
<sup>(2)</sup>CNR-MATIS and Università di Padova  
<sup>(3)</sup>Carlo Gavazzi Space Spa

17.15 **O - 110 Void formation in amorphous silicon during swift heavy ion irradiation**  
*Andre Hedler<sup>(1)</sup>, S. Klaumünzer<sup>(2)</sup>, J.K.N. Lindner<sup>(3)</sup>, T. Frosch<sup>(4)</sup>, Nora Darowski<sup>(2)</sup>, Ivo Zizak<sup>(2)</sup>, Jürgen Popp<sup>(4)</sup>, Werner Wesch<sup>(3)</sup>*  
<sup>(1)</sup>Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena  
<sup>(2)</sup>Hahn-Meitner-Institut Berlin  
<sup>(3)</sup>Institut für Physik, Universität Augsburg  
<sup>(4)</sup>Institut für Physikalische Chemie, Friedrich-Schiller-Universität Jena

- 17.30 **O - 446 Grain rotation in nanocrystalline layers induced by swift heavy ions**  
Ivo Zizak<sup>(1)</sup>, Nora Darowski<sup>(1)</sup>, Siegfried Klaumünzer<sup>(1)</sup>, Walter Assmann<sup>(2)</sup>, Jürgen Gerlach<sup>(3)</sup>  
<sup>(1)</sup>Hahn-Meitner-Institut, Berlin, Germany  
<sup>(2)</sup>Ludwig-Maximilian University, Garching, Germany  
<sup>(3)</sup>Institute of Surface Modification, Leipzig, Germany
- 17.45 **O - 512 Shaping of nanometals by swift heavy ions**  
Elmuez Dawi<sup>(1)</sup>, Martijn Mink<sup>(1)</sup>, Karl-Heinz Heinig<sup>(2)</sup>, Marcel Toulemonde<sup>(3)</sup>, Kai Nordlund<sup>(4)</sup>, Arjen Vredenberg<sup>(1)</sup>  
<sup>(1)</sup>Debye Institute, Utrecht University  
<sup>(2)</sup>Inst. of ion beam physics and materials research, Research Center Rossendorf  
<sup>(3)</sup>Laboratoire CIRIL-GANIL  
<sup>(4)</sup>Accelerator Laboratory, University of Helsinki
- 18.00 **O - 267 Mechanisms of swift-heavy-ion-assisted shaping of Au nanospheres into wires and their subsequent “Ostwald ripening”**  
Karl-Heinz Heinig<sup>(1)</sup>, Arjen Vredenberg<sup>(2)</sup>, Marcel Toulemonde<sup>(3)</sup>, Kai Nordlund<sup>(4)</sup>  
<sup>(1)</sup>Research Center Rossendorf  
<sup>(2)</sup>Utrecht University  
<sup>(3)</sup>CIRIL-GANIL  
<sup>(4)</sup>University Helsinki
- 18.15 **O - 384 Nano- and micro-patterning by swift ion irradiation through self-assembled masks**  
Marek Skupinski<sup>(1)</sup>, Jens Jensen<sup>(2)</sup>  
<sup>(1)</sup>Material Science, Ångström Laboratory, Uppsala, Sweden  
<sup>(2)</sup>Division of Ion Physics, Ångström Laboratory, Uppsala, Sweden
- 18.30 **O - 270 How shape high energy heavy ions semiconductor nanoparticles embedded in SiO<sub>2</sub>?**  
Bernd Schmidt, Arndt Mücklich, Lars Röntzsch, Karl-Heinz Heinig  
 Research Center Rossendorf
- 18.45 **O - 273 Changes in the size and shape of noble metal particles under swift heavy ion irradiation**  
F. Singh<sup>(1)</sup>, Y.K. Mishra<sup>(1)</sup>, J.C. Pivin<sup>(2)</sup>, D.K. Avasthi<sup>(1)</sup>, E. Pippel<sup>(3)</sup>, J.P. Stoquert<sup>(4)</sup>, D. Dimova-Malinovska<sup>(5)</sup>, C. Trautmann<sup>(6)</sup>, K. Schwartz<sup>(6)</sup>  
<sup>(1)</sup>Inter University Accelerator Center, Aruna Asaf Ali Marg, New Delhi –110067, India  
<sup>(2)</sup>CSNSM, Orsay campus, France  
<sup>(3)</sup>Max Plank Institute für Mikrostrukturphysik, Halle, D-06120, Germany  
<sup>(4)</sup>Laboratoire INESS, BP20, 67037 Strasbourg Cedex 2, France  
<sup>(5)</sup>Central Laboratory for Solar Energy and New Energy Sources, Bulgarian Academy of Sciences, Sofia, Bulgaria  
<sup>(6)</sup>Gesellschaft für Schwerionenforschung, Planckstr. 1, 64291 Darmstadt, Germany

## 20 September 2006 (Wednesday)

### SESSION VIII - BIOMATERIALS

- 8.45 **I - 133 Biodegradable radioactive implants for glaucoma filtering surgery produced by ion implantation**  
Walter Assmann<sup>(1)</sup>, Mario Schubert<sup>(1)</sup>, Andreas Pichler<sup>(2)</sup>, Anette Held<sup>(2)</sup>, Ines Lanzl<sup>(2)</sup>, Sabine Kiermaier<sup>(3)</sup>, Klaus Schlösser<sup>(4)</sup>, Detlef Streufert<sup>(5)</sup>  
<sup>(1)</sup>University of Munich, Department of Physics  
<sup>(2)</sup>Eye Clinic, Technical University Munich  
<sup>(3)</sup>Institute of Medical Engineering, Technical University Munich  
<sup>(4)</sup>Research Centre Karlsruhe  
<sup>(5)</sup>Acri.Tec GmbH, Henningsdorf
- 9.15 **O - 148 Oxygen and sodium plasma-implanted nickel-titanium shape memory alloy: a novel method to promote hydroxyapatite formation and nickel suppression**  
Y.L. Chan<sup>(1)</sup>, Kelvin Yeung<sup>(1)</sup>, Alfonso Ngan<sup>(1)</sup>, Ken Cheung<sup>(1)</sup>, William Lu<sup>(1)</sup>, Keith Luk<sup>(1)</sup>, X.M. Liu<sup>(2)</sup>, Paul Chu<sup>(2)</sup>  
<sup>(1)</sup>The University of Hong Kong  
<sup>(2)</sup>City University of Hong Kong
- 9.30 **O - 453 Application of ion beam irradiated ePTFE to repair small vessels injury**  
Noriyoshi Takahashi<sup>(1)</sup>, Yoshiaki Suzuki<sup>(2)</sup>, Hiroshi Ujiie<sup>(3)</sup>, Tomokatsu Horii<sup>(3)</sup>, Masaya Iwaki<sup>(2)</sup>, Takenori Yamada<sup>(1)</sup>  
<sup>(1)</sup>Tokyo University of Science  
<sup>(2)</sup>Riken  
<sup>(3)</sup>Tokyo Women's Medical University

- 9.45 **O - 147 Novel plasma - implanted shape memory alloys in orthopedics**  
*Kelvin Yeung<sup>(1)</sup>, Y.L. Chan<sup>(1)</sup>, K.O. Wong<sup>(1)</sup>, X.Y. Liu<sup>(2)</sup>, C.Y. Chung<sup>(2)</sup>, Paul Chu<sup>(2)</sup>, William Lu<sup>(1)</sup>, Keith Luk<sup>(1)</sup>, Danny Chan<sup>(1)</sup>, Ken Cheung<sup>(1)</sup>*  
<sup>(1)</sup>The University of Hong Kong  
<sup>(2)</sup>City University of Hong Kong

## SESSION IX - SEMICONDUCTORS 1

- 10.00 **I - 510 Physical insight into the phenomenon of B clustering in Si at room temperature**  
*Lucia Romano, Alberto Maria Piro, Salvatore Mirabella*  
CNR - INFM - MATIS and Dipartimento di Fisica e Astronomia, Università di Catania, Italy
- 10.30 **O - 253 Boron diffusion and activation in SOI and bulk Si: the role of the buried interface and crystalline quality**  
*Maria Abov, Lourdes Pelaz*  
University of Valladolid
- 10.45 **O - 329 Novel processing methods for highly activated junctions in advanced CMOS**  
*Nick Cower<sup>(1)</sup>, Andy Smith<sup>(2)</sup>, Justin Hamilton<sup>(2)</sup>, Nicholas Bennett<sup>(2)</sup>, Jim Sharp<sup>(2)</sup>, Brian Sealy<sup>(2)</sup>, Karen Kirkby<sup>(2)</sup>, Roger Webb<sup>(2)</sup>, Erik Collart<sup>(3)</sup>, Ignacio Martin-Bragado<sup>(4)</sup>, Benjamin Colombeau<sup>(5)</sup>*  
<sup>(1)</sup>Advanced Technology Institute, University of Surrey, UK  
<sup>(2)</sup>University of Surrey, UK  
<sup>(3)</sup>Applied Materials UK Ltd.  
<sup>(4)</sup>Synopsys Inc., USA  
<sup>(5)</sup>Chartered Semiconductor Manufacturing Ltd., Singapore

## 11.00 COFFEE BREAK

## SESSION X - SEMICONDUCTORS 2

- 11.30 **O - 426 Effects of non - melt laser annealing on B activation / deactivation in Si**  
*James Sharp<sup>(1)</sup>, Majeed Foad<sup>(2)</sup>, Massimo Bersani<sup>(3)</sup>, Damiano Giubertoni<sup>(3)</sup>, Salvatore Gennaro<sup>(3)</sup>, Justin Hamilton<sup>(1)</sup>, Nicholas Cower<sup>(4)</sup>, Roger P. Webb<sup>(1)</sup>, Karen J. Kirkby<sup>(1)</sup>*  
<sup>(1)</sup>Ion Beam Centre, Advanced Technology Institute, University of Surrey, Guildford, UK  
<sup>(2)</sup>Front End Products Group, Applied Materials Inc., Sunnyvale, USA  
<sup>(3)</sup>Centro per la Ricerca Scientifica e Tecnologia, ITC - irst, Povo, Trento, Italy  
<sup>(4)</sup>Advanced Technology Institute, University of Surrey, Guildford, UK
- 11.45 **O - 442 Identification of boron - interstitial clusters formed in ultralow - energy high - dose boron - implanted silicon by means of transmission electron microscopy**  
*Nikolay Cherkashin<sup>(1)</sup>, Martin Hytch<sup>(1)</sup>, Fuccio Cristiano<sup>(2)</sup>, Alain Claverie<sup>(1)</sup>*  
<sup>(1)</sup>CEMES - CNRS, Toulouse, France  
<sup>(2)</sup>LAAS - CNRS, Toulouse, France
- 12.00 **O - 445 Atomistic mechanism of B diffusion in Si under extrinsic conditions**  
*Davide De Salvador<sup>(1)</sup>, G. Bisognin<sup>(1)</sup>, E. Napolitani<sup>(1)</sup>, A. Carnera<sup>(1)</sup>, Salvatore Mirabella<sup>(2)</sup>, Giuliana Impellizzeri<sup>(2)</sup>, Francesco Priolo<sup>(2)</sup>*  
<sup>(1)</sup>Università di Padova, Italy  
<sup>(2)</sup>Dip. di Fisica e Astronomia, Università di Catania, Italy
- 12.15 **O - 246 Study of defect engineering in the initial state of SIMOX processing**  
*Reinhard Koegler<sup>(1)</sup>, A. Mücklich<sup>(1)</sup>, F. Eichhorn<sup>(1)</sup>, L. Vines<sup>(2)</sup>, D. Krecar<sup>(3)</sup>, A. Kuznetsov<sup>(2)</sup>, W. Skorupa<sup>(1)</sup>*  
<sup>(1)</sup>Forschungszentrum Rossendorf, Dresden, Germany  
<sup>(2)</sup>University of Oslo, Oslo, Norway  
<sup>(3)</sup>TU Wien, Inst. für chem. Tech. und Analytik, Wien, Austria
- 12.30 **O - 101 Germanium shallow junction formation by flash annealing**  
*Alessandra Satta<sup>(1)</sup>, Antonio D'Amore<sup>(1)</sup>, Eddy Simoen<sup>(1)</sup>, Tom Janssens<sup>(1)</sup>, Trudo Clarysse<sup>(1)</sup>, Walter Anwand<sup>(2)</sup>, Wolfgang Skorupa<sup>(2)</sup>*  
<sup>(1)</sup>IMEC  
<sup>(2)</sup>Forschungszentrum Rossendorf
- 12.45 **O - 537 Qualifying device and circuit response to defect production through ion irradiation and modeling**  
*J.C. Barbour, R.A. Paulsen, S.M. Myers, G. Vizkelethy, D.B. King, R.M. Fleming, P.J. Griffin, W.R. Wampler*  
Sandia National Laboratories, Albuquerque, USA

## 13.00 LUNCH

## 14.30 POSTER SESSION III

## SESSION XI - CLUSTER ION BEAMS

- 16.30 **I - 409 Size effects in gas cluster ion beam process**  
Jiro Matsuo  
Quantum Science and Engineering Center, Kyoto University
- 17.00 **O - 199 Computer simulation of large gas cluster impacts on surfaces**  
Roger Webb, Maxim Ponomarev  
Surrey Ion Beam Centre, University of Surrey
- 17.15 **O - 301 Ionized cluster beam deposition of porous semiconductor surfaces**  
Ari Harjunmaa<sup>(1)</sup>, Jura Tarus<sup>(2)</sup>, Kai Nordlund<sup>(1)</sup>, Juhani Keinonen<sup>(1)</sup>  
<sup>(1)</sup>University of Helsinki  
<sup>(2)</sup>CSC - Scientific Computing Ltd.
- 17.30 **O - 159 Crater annihilation on silver by ion impacts**  
K. O. E. Henriksson<sup>(1,2)</sup>, K. Nordlund<sup>(1)</sup>, and J. Keinonen<sup>(1)</sup>  
<sup>(1)</sup>Accelerator laboratory, University of Helsinki, Finland  
<sup>(2)</sup>Department of Nuclear and Reactor Physics, KTH Stockholm, Sweden
- 17.45 **I - 149 Cluster ion beam processing - a review of physics, technology and applications**  
Isao Yamada  
Laboratory of Advanced Science and Technology, University of Hyogo

## 21 September 2006 (Thursday)

## SESSION XII - SEMICONDUCTORS 3

- 8.45 **O - 69 Ion channeling investigation of patterned Si/SiGe lines with asymmetric biaxial strain**  
Bernhard Hollaender<sup>(1)</sup>, Dan Buca<sup>(1)</sup>, Sebastian Feste<sup>(1)</sup>, Helmut Trinkaus<sup>(1)</sup>, Siegfried Mantl<sup>(1)</sup>, Roger Loo<sup>(2)</sup>, Matty Caymax<sup>(2)</sup>  
<sup>(1)</sup>Forschungszentrum Juelich GmbH, ISG - 1  
<sup>(2)</sup>IMEC
- 9.00 **O - 254 Electrical characterization of defects in In - implanted n - type Ge**  
F. Danie Auret<sup>(1)</sup>, Michael Hayes<sup>(1)</sup>, Walter E. Meyer<sup>(1)</sup>, Sergio Coelho<sup>(1)</sup>, Stefan Decoster<sup>(2)</sup>, Andre Vantomme<sup>(2)</sup>, Vasco Matias<sup>(2)</sup>  
<sup>(1)</sup>University of Pretoria  
<sup>(2)</sup>Katholieke Universiteit Leuven
- 9.15 **O - 279 Electrical activation and lattice site stability of deep trap Fe centers in high temperature implanted InP**  
Tiziana Cesca<sup>(1)</sup>, Andrea Gasparotto<sup>(1)</sup>, Adriano Verna<sup>(1)</sup>, Giovanni Mattei<sup>(1)</sup>, Beatrice Fraboni<sup>(2)</sup>, Giuliana Impellizzeri<sup>(3)</sup>, Francesco Priolo<sup>(3)</sup>, Aldo Amore Bonapasta<sup>(4)</sup>, Francesco Filippone<sup>(4)</sup>  
<sup>(1)</sup>University of Padova, Department of Physics, Padova, Italy  
<sup>(2)</sup>University of Bologna, Department of Physics, Bologna, Italy  
<sup>(3)</sup> MATIS CNR-INFN, University of Catania, Department of Physics and Astronomy, Catania, Italy  
<sup>(4)</sup> Istituto di Struttura della Materia (ISM) del Consiglio Nazionale delle Ricerche
- 9.30 **O - 332 Ultrafast microwave annealing of ion - implanted silicon carbide**  
Siddarth Sundaresan<sup>(1)</sup>, Yonglai Tian<sup>(2)</sup>, John Schreifels<sup>(1)</sup>, Madhu Murthy<sup>(1)</sup>, Jaime Freitas<sup>(3)</sup>, Ken Jones<sup>(4)</sup>, Mark Wood<sup>(4)</sup>, Mark Ridgway<sup>(5)</sup>, Mulpuri Rao<sup>(1)</sup>  
<sup>(1)</sup>George Mason University  
<sup>(2)</sup>LT Technologies  
<sup>(3)</sup>Naval Research Laboratory  
<sup>(4)</sup>Army Research Laboratory  
<sup>(5)</sup>Australian National University
- 9.45 **O - 157 Structural and optical characterisation of rare earth implanted Al<sub>x</sub>Ga<sub>(1-x)</sub>N**  
Katharina Lorenz<sup>(1)</sup>, E. Alves<sup>(1)</sup>, T. Monteiro<sup>(2)</sup>, M. Peres<sup>(2)</sup>, M.J. Soares<sup>(2)</sup>  
<sup>(1)</sup>Instituto Tecnológico e Nuclear, Portugal  
<sup>(2)</sup>University of Aveiro, Portugal
- 10.00 **O - 373 Lattice location of rare earth atoms implanted into GaN**  
Bart De Vries<sup>(1)</sup>, Ulrich Wahl<sup>(2)</sup>, André Vantomme<sup>(1)</sup>, Joao Guilherme Correia<sup>(2)</sup>, the Isolde Collaboration<sup>(3)</sup>  
<sup>(1)</sup>Instituut voor Kern - en Stralingsfysica, Leuven, Belgium  
<sup>(2)</sup>ITN, Sacavém, Portugal & CFNUL, Lisboa, Portugal  
<sup>(3)</sup>CERN - PPE, Genève, Switzerland

- 10.15 **O - 163 Electrical activation of implantation - induced defects in ZnO by flash lamp annealing**  
*T. Moe Børseth<sup>(1)</sup>, F. Tuomisto<sup>(2)</sup>, J.S. Christensen<sup>(1)</sup>, W. Anwand<sup>(3)</sup>, W. Skorupa<sup>(3)</sup>, B.G. Svensson<sup>(1)</sup>, A. Kuznetsov<sup>(1)</sup>  
<sup>(1)</sup>Centre for Materials Science and Nanotechnology, University of Oslo, Norway  
<sup>(2)</sup>Laboratory of Physics, Helsinki University of Technology, Finland  
<sup>(3)</sup>Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf, Dresden, Germany*

10.30 **COFFEE BREAK**

**SESSION XIII - CARBON, NANOTUBES AND FULLERENES**

- 11.00 **I - 542 Tuning the conductance of single walled carbon nanotubes by ion irradiation in the Anderson localization regime**  
C. Gómez-Navarro<sup>(1)</sup>, *P.J. de Pablo<sup>(1)</sup>, J. Gómez-Herrero<sup>(1)</sup>, A. Rubio<sup>(2)</sup>, B. Biel<sup>(3)</sup>, F.J. Garcia - Vidal<sup>(3)</sup>, F. Flores<sup>(3)</sup>*  
<sup>(1)</sup>Dpto de Física de la Materia Condensada, Universidad Autónoma de Madrid, Spain  
<sup>(2)</sup>Dpto de Física de Materiales, Universidad del País Vasco and Donostia, San Sebastián, Spain  
<sup>(3)</sup>Dpto. de Física Teórica de la Materia Condensada. Universidad Autónoma de Madrid, Spain
- 11.30 **O - 328 Ion and electron beam modification of carbon nanotubes: theoretical predictions and experimental results**  
Arkady Krasheninnikov  
 University of Helsinki
- 11.45 **O - 457 Fullerenes as a novel target / projectile in ion - surface impact interactions and synthesis**  
Yonatan Manor, *Anatoly Bekkerman, Boris Tsipinyuk, Eli Kolodney*  
 Technion - Israel institute of Technology
- 12.00 **O - 19 Planar doping of crystalline fullerene with cobalt through ion implantation**  
Vasily Lavrentiev<sup>(1)</sup>, *Hiroshi Naramoto<sup>(2)</sup>, Kazumasa Narumi<sup>(2)</sup>, Seiji Sakai<sup>(2)</sup>, Pavel Avramov<sup>(2)</sup>*  
<sup>(1)</sup>INTERCI  
<sup>(2)</sup>Japan Atomic Energy Agency
- 12.15 **O - 282 Diamond - like carbon films formed by hydrocarbon plasma immersion ion implantation**  
Wolfgang Ensinger  
 Darmstadt University of Technology, Germany

**22 September 2006 (Friday)**

**SESSION XIV – NANOFABRICATION AND METALS**

- 8.45 **I – 111 Fabrication of metallic nanomasks by transfer of self - organized nanodot patterns from semiconductor material into thin metallic layers**  
*Thomas Bobek, Heinrich Kurz*  
 Institute of Semiconductor Electronics, Aachen University
- 9.15 **O - 236 Highly ordered pattern on Si and Ge surfaces by ion beam erosion: from ripples to dots**  
*Bashkim Ziberi, Frank Frost, Bernd Rauschenbach*  
 Leibniz - Institut fuer Oberflaechenmodifizierung e. V., Leipzig, Germany
- 9.30 **O - 119 Ion beam induced sintering of colloidal polystyrene nanomasks**  
*Daniel Kraus, Jörg Lindner, Bernd Stritzker*  
 University of Augsburg, Institute of Physics
- 9.45 **O - 50 Propulsion of ripples on glass by ion bombardment**  
Paul Alkemade  
 Kavli Institute of Nanoscience, Delft University of Technology
- 10.00 **O - 53 Silicon nanowire synthesis on metal implanted silicon substrates**  
Thomas Stelzner<sup>(1)</sup>, *G. Andrá<sup>(2)</sup>, E. Wendler<sup>(1)</sup>, W. Wesch<sup>(1)</sup>, U. Gösele<sup>(3)</sup>, S. Christiansen<sup>(4)</sup>*  
<sup>(1)</sup>Institute of Solid State Physics, University Jena, Germany  
<sup>(2)</sup>Institute for Physical High Technology, Jena, Germany  
<sup>(3)</sup>Max - Planck – Institute of Microstructure Physics, Halle, Germany  
<sup>(4)</sup>Martin - Luther - University Halle - Wittenberg, Halle, Germany
- 10.15 **O - 81 Efficient oxidation protection of gamma - TiAl alloys by ion implantation of halogens**  
Rossen Yankov<sup>(1)</sup>, *Edgar Richter<sup>(1)</sup>, Alexander Donchev<sup>(2)</sup>, Michael Schütze<sup>(2)</sup>*  
<sup>(1)</sup>Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf, Dresden, Germany  
<sup>(2)</sup>Karl - Winnacker - Institut der DECHEMA, Frankfurt am Main, Germany

10.30 **O - 298 Plasma immersion ion implantation for NiTi surface modification**  
*Natalia Shevchenko, Helfried Reuther, Ulrich Kreissig, Edgar Richter*  
Forschungszentrum Rossendorf

10.45 **COFFEE BREAK**

**SESSION XV - BLISTERING**

11.15 **O - 73 Progress in understanding hydrogen blistering of silicon**  
*Bernard Terreault*  
INRS - EMT, Université du Québec

11.30 **O - 285 The interaction of cavities in silicon with moving amorphous - crystalline interfaces**  
*A.S. Gandy<sup>(1)</sup>, S.E. Donnelly<sup>(1)</sup>, M.F. Beaufort<sup>(2)</sup>, E. Oliviero<sup>(3)</sup>, P.F.P. Fichtner<sup>(3)</sup>*  
<sup>(1)</sup>Institute for Materials Research, University of Salford, Manchester, UK  
<sup>(2)</sup>Laboratoire de Métallurgie Physique UMR6630, Université de Poitiers, France  
<sup>(3)</sup>Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

11.45 **O - 309 The approach for nanolayered silicon - on - insulator**  
*Michael Nastasi, Lin Shao*  
Los Alamos National Laboratory, Los Alamos, New Mexico, USA

12.00 **O - 465 Total exfoliation behavior in He<sup>+</sup> and H<sub>2</sub><sup>+</sup> co - implanted Si(001) samples**  
*Shay Reboh<sup>(1)</sup>, Augusto A.D. de Mattos<sup>(2)</sup>, Tatiana L. Marcondes<sup>(2)</sup>, Francis Rossato<sup>(3)</sup>, Fabíola Campos<sup>(3)</sup>, Ricardo M. Papaleo<sup>(4)</sup>, Carlos P. Bergmann<sup>(5)</sup>, Paulo F.P. Fichtner<sup>(5)</sup>*  
<sup>(1)</sup>Pós - Graduação em Ciência dos Materiais, Universidade Federal do Rio Grande do Sul  
<sup>(2)</sup>Pós - Graduação em Microeletrônica, Universidade Federal do Rio Grande do Sul  
<sup>(3)</sup>Iniciação Científica, Universidade Federal do Rio Grande do Sul  
<sup>(4)</sup>Faculdade de Física, Pontificia Universidade Católica - RS  
<sup>(5)</sup>Escola de Engenharia, Universidade Federal do Rio Grande do Sul

12.15 **O - 403 He implantation in Si for B junction performance improvement**  
*E. Bruno<sup>(1)</sup>, S. Mirabella<sup>(1)</sup>, F. Priolo<sup>(1)</sup>, F. Giannazzo<sup>(2)</sup>, C. Bongiorno<sup>(2)</sup>, V. Raineri<sup>(2)</sup>, E. Napolitani<sup>(3)</sup>, A. Carnera<sup>(3)</sup>*  
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<sup>(3)</sup>MATIS CNR-INFM and Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, ITALY

**12.30 CONCLUDING REMARKS**

13.00 **LUNCH**