



Strasbourg (France)

E-MRS 2005 Spring Meeting  
May 31 – June 3, 2005

## SYMPOSIUM O

### Synchrotron radiation and materials science

Symposium Organizers :

**Heinz Amenitsch**, Austrian Academy of Sciences, Graz, Austria

**Federico Boscherini**, University Bologna and INFN, Italy

**Jean-Yves Buffière**, INSA, Lyon, France

**Eric Fullerton**, Hitachi, San Jose, USA

**Stefan Heun**, TASC-INFN, Trieste, Italy

#### Symposium Support

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# E-MRS 2005 Spring Meeting

## SYMPOSIUM O

Tuesday, May 31, 2005  
Mardi 31 mai 2005

Morning  
Matin

9:00 **WELCOME**  
F. Boscherini

### Session I : Nanostructures Session chair : T. Schmidt

**O-I.01** 9:05 -Invited- TOMONAGA-LUTTINGER LIQUID STATE IN CARBON NANOTUBES: PHOTOEMISSION STUDY  
H. Kataura, NRI, AIST, Tsukuba 305-8562, Japan, H. Shiozawa, IFW, Dresden, Germany, H. Ishii, Tokyo Metropolitan University, Tokyo 192-0397, Japan

**O-I.02** 9:35 HIGHLY-ORDERED ULTRA-THIN COLLOIDAL NANOPARTICLE FILMS  
J.I. Flege, Th. Schmidt, G. Alexe, T. Clausen, J. Falta, Institute of Solid State Physics, University of Bremen, Otto-Hahn-Allee, 28359 Bremen, Germany, I. Randjelovic, V. Aleksandrovic, A. Kornowski, H. Weller, Institute of Physical Chemistry, University of Hamburg, Grindelallee 117, 20146 Hamburg, Germany, S. Bernstorff, Sincrotrone Trieste, Strada Statale 14, km 163.5, 34012 Basovizza/Trieste, Italy

**O-I.03** 9:55 CHEMICAL PROPERTIES OF NANOSTRUCTURES FABRICATED BY LOCAL ANODIC OXIDATION ON N-GAAS  
G. Mori(a,b), M. Lazzarino(a), S. Heun(a), D. Ercolani(a,c), G. Biasiol(a), A. Locatelli(d), and L. Sorba(a,c), (a)Laboratorio Nazionale TASC-INFM, 34012 Trieste, Italy, (b)Università degli Studi di Trieste, 34127 Trieste, Italy, (c)Università degli Studi di Modena e Reggio Emilia, 41100 Modena, Italy, (d)Sincrotrone Trieste S. c. p. a., 34012 Trieste, Italy

**O-I.04** 10:15 STRUCTURAL CHARACTERIZATION OF ION IMPLANTED AU NANOCRYSTALS USING SYNCHROTRON BASED ANALYTICAL TECHNIQUES  
P. Kluth, B. Johannessen, S.M. Kluth, Department of Electronic Materials Engineering, The Australian National University, Canberra ACT 0200, Australia, G.J. Foran, Australian Nuclear Science and Technology Organization, Menai, Australia, D.J. Cookson, Advanced Photon Source, Argonne National Laboratory, 9700 S. Cass Avenue, Argonne IL 60439, USA, M.C. Ridgway Department of Electronic Materials Engineering, The Australian National University, Canberra ACT 0200, Australia

10:35 **BREAK**

### Session II : Magnetic nanostructures Session chair : S. Cherifi

**O-II.01** 11:00 -Invited- RECENT RESULTS IN TIME-RESOLVED XMCD-PEEM  
Gerd Schönhense, Institut für Physik, Johannes Gutenberg-Univ., 55128 Mainz, Germany

**O-II.02** 11:30 SPIN AND ORBITAL MAGNETIC MOMENTS FROM SINGLE ATOMS TO SMALL CR CLUSTERS  
C. Boeglin, H. Bulou, F. Scheurer, I. Chado, IPCMS, 67034 Strasbourg, France, P. Ohresser, LURE, 91405 Orsay, France, S.S. Dhesi, ESRF, BP 220, 38043 Grenoble, France, E. Gaudry, LMCP Jussieu, 75252 Paris, France, B. Lazarovits, T.U. 1060 Vienna, Austria

**O-II.03** 11:50 EVOLUTION OF Co/Pt6COVERED NANOLONES UNDER MAGNETIC FIELD USING COHERENT SOFT X-RAYS RESONANT MAGNETIC SCATTERING  
G. Beutier(a), F. Livet(b), A. Marty(a), G. van der Laan(c), S. Stanescu(d), V. Chamard(b), V. Baltz(e), (a)CEA-SP2M, 17 av. Des Martyrs, 38054 Grenoble cedex 9, France, (b)LTPCM-INPG, ENSEEG-Domaine Universitaire, BP 75, 38402 Saint-Martin d'Hères Cedex, France, (c)Magnetic Spectroscopy Group, Daresbury Laboratory, Warrington WA4 4AD, U.K., (d)ESRF, Grenoble, France, (e)CEA-Spintec, 17 av. Des Martyrs, 38054 Grenoble cedex 9, France

**O-II.04** 12:10 THREE-DIMENSIONAL MAGNETIZATION STRUCTURES IN Fe/Mo(110) ISLANDS  
R. Hertel, IEE-IFF, Research Center Jülich, 52425 Jülich, Germany and O. Fruchart and S. Cherifi, Laboratoire Louis Néel, CNRS Grenoble, BP166, 38042 Grenoble Cedex 9, France, and P.-O. Jubert, IBM Zürich Research Laboratory, 8803 Rüschlikon, Switzerland and A. Locatelli, Sincrotrone ELETTRA, Basovizza, 34012 Trieste, Italy and S. Heun, TASC-INFM Laboratory, Basovizza, 34012 Trieste, Italy

12:30 **LUNCH**

Tuesday, May 31, 2005  
Mardi 31 mai 2005

Afternoon  
Après-midi

### Session III : Semiconductors

Session chair : P. Fons

- O-III.01** 14:00 -Invited- IN-SITU STUDIES OF SEMICONDUCTOR GROWTH BY SYNCHROTRON X-RAY DIFFRACTION  
Klaus H. Ploog and **Wolfgang Braun**, Paul Drude Institute for Solid State Electronics, 10117 Berlin, Germany
- O-III.02** 14:30 STRAIN, SIZE AND COMPOSITION OF SEMICONDUCTOR NANOSTRUCTURES DETERMINED VIA X-RAY ANOMALOUS DIFFRACTION AND DIFFRACTION ANOMALOUS FINE STRUCTURE  
A. Letoublon, V. Favre-Nicolin, H. Renevier, Commissariat à l'Energie Atomique, Département de Recherche Fondamentale sur la Matière Condensée, SP2M/Nanostructures et Rayonnement Synchrotron, 17 rue des martyrs, 38054 Grenoble Cedex 9, France, M.G. Proietti, Departamento de Física de la Materia Condensada, Instituto de Ciencia de Materiales de Aragón, CSIC-Universidad de Zaragoza - c. Pedro Cerbuna 12, 50009 Zaragoza, Spain, C. Monat, M. Gendry, LEOM, UMR-CNRS 5512, Ecole Centrale de Lyon, 69134 Ecully, France, O. Marty, LENAC, Université Lyon I, 69621 Villeurbanne, France, C. Priester, Institut d'Electronique, de Microélectronique et de Nanotechnologie, dep. ISEN, 59652 Villeneuve d'Ascq, France
- O-III.03** 14:50 SHAPE, STRAIN, AND ORDERING OF LATERAL INAS QUANTUM DOT MOLECULES  
B. Krause and T.H. Metzger, ESRF, BP 220, 38043 Grenoble Cedex, France, A. Rastelli, R. Songmuang and O.G. Schmidt, MPI-FKF, Heisenbergstr. 1, 70569 Stuttgart, Germany
- O-III.04** 15:10 MORPHOLOGY AND COMPOSITION OF Ge ISLANDS EMBEDDED IN Si  
F. d'Acapito(a), M. de Seta(b), L. di Gaspare(b), G. Capellini(c), M. Giorgi(b), (a)GILDA CRG, INFN - OGG c/o ESRF; (b)Universita' Roma Tre; (c)INFN and Universita' Roma Tre, Italy
- O-III.05** 15:30 IN-SITU INVESTIGATION BY GISAXS AND GID OF THE GROWTH MODE, STRAIN STATE AND SHAPE OF Ge ISLANDS DURING THEIR GROWTH ON Si(001)  
M.-I. Richard(a), T.-U. Schüllli(a), E. Wintersberger(b), G. Renaud(a), G. Bauer(b), (a)CEA-Grenoble, DRFMC/SP2M/NRS, 17 av. des Martyrs, 38054 Grenoble, France, (b)Johannes Kepler Universität Linz, Institut für Halbleiterphysik, 4040 Linz, Austria

15:50

**BREAK**

### Session IV : Semiconductors and optical materials

Session chair : F. D'Acapito

- O-IV.01** 16:20 -Invited- NANOSCALE MECHANISM OF PHASE-CHANGE OPTICAL RECORDING REVEALED BY XAFS  
A.V. Kolobov(a), P. Fons(a), J. Tominaga(a), A.I. Frenkel(b), A.L. Ankudinov(c), T. Uruga(d), (a)Center for Applied Near-field Optics Research, National Institute of Advanced Industrial Science and Technology, Japan, (b)Department of Physics, Washington University, USA, (c)Department of Physics, Yeshiva University, USA, (d)Spring8, Japan
- O-IV.02** 16:50 -Invited- PHOTOEMISSION SPECTROMICROSCOPY INVESTIGATION OF THE MECHANISM OF DARK-SPOT DEGRADATION OF ORGANIC LIGHT-EMITTING DEVICES  
Luca Gregoratti(a), P. Melpignano(b), A. Baron-Toaldo(b), V. Biondo(b), S. Priante(b), R. Zamboni(c), M. Murgia(c), S. Caria(c), A. Barinov(a), M. Kiskinova(a) (a)Sincrotrone Trieste ScPA, Area Science Park, SS14-Km163.5, 34012 Basovizza-Trieste, Italy, (b)Centro Ricerche Plast-Optica, Via Jacopo Linussio, 1, 33020 Amaro (UD), Italy, (c)Istituto per lo Studio dei Materiali Nanostrutturati del CNR, via P. Gobetti 101, 40129 Bologna, Italy
- O-IV.03** 17:20 STUDY OF THE MODIFICATIONS OF THE MICROSTRUCTURE OF GaN AFTER HIGH-DOSE Si IMPLANTATION  
M. Katsikini, F. Pinakidou, E.C. Paloura, Aristotle University of Thessaloniki, Department of Physics, 54124 Thessaloniki, Greece and F. Boscherini University of Bologna, Department of Physics and Istituto Nazionale per la Fisica della Materia, 40127, Bologna, Italy
- O-IV.04** 17:40 SEGREGATION OF Si DOPANT SPECIES IN GaN REVEALED BY SPECTRO-MICROSCOPY  
Th. Schmidt, M. Siebert, S. Gangopadhyay, A. Pretorius, S. Figge, S. Einfeldt, D. Hommel, and J. Falta, Institute of Solid State Physics, University of Bremen, Otto-Hahn-Allee 1, 28359 Bremen, Germany, L. Gregoratti, A. Barinov, and M. Kiskinova, ELETTRA Synchrotron Light Source, Strada Statale 14, 34012 Basovizza, Italy
- O-IV.05** 18:20 SOFT X-RAY XAFS OF N IN ZnO:N -- WHY IS DOPING SO DIFFICULT? P. Fons(a), H. Tampo(a), F. Boscherini(b), R. Carboni(b), M. Ohkubo(a), F.S. Niki(a), S. Friedrich(b), (a)National Institutes of Advanced Industrial Science & Technology, Tsukuba 305-8562, Japan, (b)University of Bologna, 40127 Bologna, Italy

**Wednesday, June 1, 2005**  
Mercredi 1er juin 2005

**Afternoon**  
Après-midi

**Session V : Mesoporous materials**  
**Session chair : F. Schüth**

- O-V.01** 14:00 -Invited- TIME-RESOLVED X-RAY DIFFRACTION EXPERIMENTS ON MESOPOROUS THIN FILMS  
P-A. Albouy, Laboratoire de Physique des Solides, Bât.510, Université de Paris-Sud, 91405 Orsay, France
- O-V.02** 14:30 SYNCHROTRON MICRO-SAXS AND MICRO-DIFFRACTION SCANNING TECHNIQUES FOR THE STUDY OF COMPLEX (BIO-)MATERIALS  
H.C. Lichtenegger, Institute for Materials Science & Technology, Vienna University of Technology, Favoritenstr. 9-11, 1040 Wien, Austria
- O-V.03** 14:50 NUCLEATION AND GROWTH OF MESOPOROUS SPHERICAL SILICA NANOPARTICLES STUDIED BY TIME-RESOLVED SMALL ANGLE X-RAY SCATTERING  
A. Hahn(a), D. Kumar(a), G. Büchel(c), H. Amenitsch(b), T. Narayanan(c), K.K. Unger(a), (a)Institut für Anorganische Chemie und Analytische Chemie, Johannes Gutenberg-Universität, Duesbergweg 10-14, 55128 Mainz, Germany, (b)Institute of Biophysics and X-ray Structure Research, Austrian Academy of Sciences, Schmiedlstr. 6, 8043 Graz, Austria, (c)ESRF, BP 220, 38043 Grenoble Cedex, France
- O-V.04** 15:10 IN SITU SAXS/XRD STUDIES OF THE FORMATION OF MESOSCOPICALLY ORDERED SURFACTANT-SILICA MESOPHASES  
Mika Lindè(a), Cilaine V. Teixeira(a), Heinz Amenitsch(b), Viveka Alfredsson(c), Freddy Kleitz(d), (a)Dept. Phys. Chem., Abo Akademi University, Porthansgatan 3-5, 20500 Turku, Finland, (b)Austrian Academy of Science, Schmiedlstrasse 6, 8043 Graz, Austria, (c)Phys. Chem. 1, Lund University, 221 00 Lund, Sweden, (d)Dept. Heterogeneous Catalysis, Max-Planck Institute for Coal Research, Kaiser-Wilhelm-Platz 1, 45470 Mülheim/Ruhr, Germany
- O-V.05** 15:30 IN SITU SAXS WAXS INVESTIGATIONS OF CRYSTALLISATION IN METAL OXIDE MESOPOROUS ORDERED THIN LAYERS  
D. Grosso(a), C. Boissiere(a), P.A. Albouy(b), H. Amenitsch(c), and C. Sanchez(a), (a)Chimie de la Matière Condensée, UMR UPMC-CNRS 7574, 4 place Jussieu, 75252 Paris 05, France, (b)Laboratoire de Physique des Solides, Université Paris-Sud, 91405 Orsay, France, (c)Institute of Biophysics and X-ray Structure Research, Austrian Academy of Sciences, Steyregasse 17/VI, 8010 Graz, Austria
- 15:50 **BREAK**

**Session VI : Cultural heritage materials (joint session with symposium Q)**  
**Session chair : M. Menu**

- O-VI.01** 16:20 -Invited- APPLICATIONS OF SYNCHROTRON RADIOATION TO ARCHAEOOMETRY  
Mario Vendrell, Dept. Crystallography and Mineralogy, University of Barcelona, Spain
- O-VI.02** 17:00 COPPER NANO-CLUSTERS IN ANCIENT OPAQUE GLASS FROM POMPEII AND SICILY: A XAS STUDY  
R. Arletti, G. Vezzalini, Earth Science Department, L.go S. Eufemia 19 41100 Modena, Italy, and S. Quartieri, G. Sabatino, M. Triscari, Earth Science Department, Salita Sperone 31, 98166 Messina S. Agata, Italy and M.C. Dalconi, Earth Science Department, Corso Ercole I° d'Este, 44100, Ferrara, Italy
- O-VI.03** 17:20 MODELLING THE SIZE OF RED-COLOURING COPPER NANOCCLUSERS IN ARCHAEOLOGIC GLASS BEADS  
M.O. Figueiredo, J.P. Veiga, CENIMAT, Fac. Sci. Technol., New Univ. Lisbon, 2829-516 Caparica, and J.P. Mirão, Geophysics C., Évora Univ., 7002-554 Évora, Portugal
- O-VI.04** 17:40 CHEMICAL ANALYSIS OF ANCIENT PHARMACEUTICAL PRACTICES  
M. Cotte, B. Fayard, J. Susini, ESRF, BP 220, 38043 Grenoble Cedex, France; P. Dumas, Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette Cedex, France; Ph. Walter, (C2RMF), UMR 171 CNRS, Palais du Louvre, Porte des Lions, 14 quai F. Mitterrand, 75001 Paris, France
- 19:00 **AWARD CEREMONY**  
The symposium organizers and the candidates to the graduate student award are requested to attend.

**CONFERENCE RECEPTION**

Thursday, June 2, 2005  
Jeudi 2 juin 2005

Morning  
Matin

## Session VII : Surfaces and interfaces

Session chair : **B. Müller**

- O-VII.01** 9:00 -Invited- RESULTS AND PERSPECTIVES IN HARD X-RAY PHOTOEMISSION SPECTROSCOPY (HAXPES) FROM SOLIDS  
Giancarlo Panaccione, Istituto Nazionale per la Fisica della Materia INFM- Lab.TASC S.S. 14 Km 163.5, in AREA Science Park, I-34012 Basovizza (Trieste), Italy
- O-VII.02** 9:30 BURIED INTERFACES CHARACTERIZATION USING HARD X-RAYS  
F. Rieutord, B. Bataillou, H. Moriceau, CEA-Grenoble, 17 rue des Martyrs, 38054 Grenoble Cedex, France
- O-VII.03** 9:50 DRIVING FORCES OF ADSORBATE-INDUCED FACETING  
Y. Garreau(a), A. Coati(a), O. Robach(b) and J. Creuze(c), (a)LURE, Bât. 209D, BP 34, Centre Universitaire Paris Sud, 91898 Orsay Cedex, France, (b)ESRF, BP 220, 38043 Grenoble, France, (c)LEMHE, Bât. 410, Centre Universitaire Paris Sud, 91405 Orsay Cedex, France
- O-VII.04** 10:10 STRUCTURAL STUDY OF THE CuPc/Au(110) INTERFACE BY MEANS OF X-RAY ABSORPTION AND DIFFRACTION OF X-RAY, ELECTRONS, He ATOMS  
L. Floreano, A. Cossaro, F. Bruno, A. Verdini, A. Morgante, Laboratorio TASC-INFM, Basovizza, 34012 Trieste, Italy, D. Cvetko, G. Bavdek, Dep. of Physics, Univ. Ljubljana, Ljubljana, Slovenia, F. Evangelista, A. Ruocco, Dep. of Physics, Univ. Roma3, Roma, Italy

10:30 **BREAK**

## Session VIII : Magnetism and spintronics materials (joint session with symposium B)

Session chair : **R. Hertel**

- O-VIII.01** 11:00 -Invited- FUNDAMENTAL MAGNETIC STATES OF DISC AND RING ELEMENTS  
C.A.F. Vaz(a), M. Klauui(b), J.A.C. Bland (a), L.J. Heyderman(c), F. Nolting(d), (a) University of Cambridge, Cavendish Laboratory, Cambridge, U.K., (b)Fachbereich Physik, Universitaet Konstanz, Konstanz, Germany, (c)Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen PSI, Switzerland, (d)Swiss Light Source, Paul Scherrer Institut, Villigen PSI, Switzerland
- O-VIII.02** 11:30 ANTIFERROMAGNETIC DOMAIN STRUCTURE OF HEMATITE THIN FILMS INVESTIGATED BY X-PEEM MICROSCOPY  
R. Belkhou(a), A. Barbier(b), P. Ohresser(a), M. Gautier-Soyer(b), J.-B. Moussy(b), A. Bataille(b), M.-J. Guittet(b), J. Raabe(c), F. Nolting(c) and C. Quitmann(c), (a)LURE, bat 209d, Université Paris-Sud, B.P. 34, 91405 Orsay, France, (b)CEA/DRECAM/SPCSI, 91191 Gif-Sur-Yvette, France, (c)Paul Scherrer Institut –SLS, 5232 Villigen PSI, Switzerland
- O-VIII.03** 11:50 SOFT X-RAY RESONANT MAGNETIC SCATTERING STUDY OF PERPENDICULAR EXCHANGE COUPLED [Fe/Co]<sub>n</sub>/FeMn FILMS  
J. Camarero(a), J. Miguel(b), F. Garcia(c), J. Vogel(d), S. Pizzini(d), F. Romanens(d), J. Sort(c), N.B. Brookes(e), B. Dieny(c) and J.B. Goedkoop(b), (a)Dpto. de Física de la Materia Condensada, Universidad Autónoma de Madrid, 28049 Madrid, Spain, (b)Van der Waals-Zeeman Institute, University of Amsterdam, 1018 XE Amsterdam, The Netherlands, (c)CEA/Grenoble, DRFMC/SPINTEC, 38054 Grenoble, France, (d)Laboratoire Louis Néel-CNRS, 38042 Grenoble, France, (e)European Synchrotron Radiation Facility (ESRF), 38043 Grenoble, France
- O-VIII.04** 12:10 ELECTRONIC AND MAGNETIC PROPERTIES OF SINGLE-CRYSTALLINE X/MgO(001) INTERFACES (X=Mn,Fe,Co)  
M. Sicot and S. Andrieu, Laboratoire de Physique des Matériaux, UMR 7556 CNRS/Univ.Nancy I, BP 239, 54506 Vandoeuvre, France; F. Bertran and F. Fortuna, L.U.R.E., BP 34, 91898 Orsay, France

12:30 **LUNCH**

Thursday, June 2, 2005  
Jeudi 2 juin 2005

Afternoon  
Après-midi

**Session IX : Oxides**

**Session chair : A. Kolobov**

- O-IX.01** 14:00 LOCAL BEHAVIOUR OF NEGATIVE THERMAL EXPANSION MATERIALS  
P. Fornasini, G. Dalba, R. Grisenti, J. Purans, and M. Vaccari, INFN and Dept. of Physics, Univ. of Trento, 38050, Povo (Trento), Italy; F. Rocca and A. Sanson, IFN-CNR Section of Trento, 38050 Povo (Trento), Italy
- O-IX.02** 14:20 SHORT-RANGE CHARGE-ORDER AND SPIN TRANSITION AT THE CROSSOVER OF THE METAL-INSULATOR TRANSITION IN RARE EARTH NICKEL PEROVSKITES  
Cynthia Piamonteze(a), Hélio C.N. Tolentino(a,b), Aline Y. Ramos(a,c), Frank M.F. de Groot(d), Nestor E. Massa(e), Jose A. Alonso(f), (a)Laboratório Nacional de Luz Sincrotron, C.P. 6192, 13084-971, Campinas, Brazil (d)Laboratoire de Cristallographie, CNRS U.P.R. 5031, Grenoble, France (d)Laboratoire Louis Néel, CNRS U.P.R. 5051, Grenoble, France (d)Dept. Inorganic Chemistry and Catalysis, Utrecht University, Utrecht, The Netherlands (d)Lab. Nac. Investigacion y Servicios en Espectroscopia Optica, UNLP, La Plata, Argentina (d)Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain
- O-IX.03** 14:40 QUANTITATIVE STRUCTURAL REFINEMENT OF Mn K EDGE XANES IN LaMnO<sub>3</sub> AND CaMnO<sub>3</sub> PEROVSKITES.  
C. Monesi(a), C. Meneghini(a,b), F. Bardelli(a,b), M. Benfatto(c), S. Mobilio(a,b,c), U. Manju(d), D.D. Sarma(d), (a)Dipartimento di Fisica Università di Roma Tre, Via della vasca navale 84, 00146 Roma, Italy, (b)INFN-GILDA c/o ESRF Grenoble, France, (c)INFN Laboratori Nazionali di Frascati, via E. Fermi 40, 00044 Frascati, Italy, (d)Solid State and Structural Chemistry Unit, Indian Institute of Science Bangalore 560012, India
- O-IX.04** 15:00 X-RAY ABSORPTION SPECTROSCOPY AND RESONANT INELASTIC X-RAY SCATTERING IN Na<sub>0.3</sub>CoO<sub>2</sub> AND Na<sub>0.3</sub>CoO<sub>2</sub>.yH<sub>2</sub>O  
P. Leininger(a), J-P. Rueff(a), M. Four(a), G. Vanko(b), H. Ishii(c), A. Yaresko(d), (a)Laboratoire de Chimie Physique-Matière et Rayonnement (UMR 7614), Université Paris 6, 11 rue Pierre et Marie Curie, 75231 Paris Cedex 05, France, (b)ESRF, 6 rue Jules Horowitz, BP220, 38043 Grenoble cedex 9, France, (c)Spring-8, 1-1-1 Kouto, Mikazuki-cho, Sayo-gun, Hyogo 679-5198, Japan, (d)Max-Planck-Institut für Physik komplexer Systeme, Nöthnitzer Str. 38 01187 Dresden, Germany
- 15:20 **BREAK**
- 16:00-19:00 **POSTER SESSION**

**POSTER SESSION**  
Thursday, June 2, 2005  
16:00 – 19:00

- O/P.01** FUNCTIONAL IMAGING OF CELL CLUSTERS USING SYNCHROTRON RADIATION BASED MICRO COMPUTED TOMOGRAPHY  
B. Müller, P. Thurner, Computer Vision Lab, ETH Zürich, Sternwartstr. 7, 8092 Zürich, Switzerland and M. Riedel, ProBioGen, Goethestr. 54, 13086 Berlin, Germany
- O/P.02** STAINING CAPILLARIES IN THE MYOCARDIUM FOR SYNCHROTRON RADIATION BASED MICRO COMPUTED TOMOGRAPHY  
B. Müller, J. Fischer, P. Thurner, Computer Vision Lab, ETH Zürich, Sternwartstr. 7, 8092 Zürich, Switzerland and F. Beckmann, GKSS at DESY, Notkestr.85, 22607 Hamburg, Germany
- O/P.03** BIOMECHANICS OF HUMAN ARTERIES STUDIED WITH SMALL ANGLE X-RAY SCATTERING  
F. Schmid(a), H. Amenitsch(a), G. Sommer(b), M. Rappolt(a), P. Regitnig(c), P. Laggner(a), G.A. Holzapfel(b), (a)Institute of Biophysics and X-ray Structure Research, Austrian Academy of Sciences, Graz, Austria, (b)Department of Solid Mechanics, Royal Institute of Technology, Stockholm, Sweden, (c)Institute of Pathology, Medical University Graz, Graz, Austria
- O/P.04** EVAPORATION INDUCED SELF-ASSEMBLY OF PHOSPHOLIPIDS STUDIED WITH SURFACE DIFFRACTION  
H. Amenitsch, B. Sartori, M. Rappolt, G. Pabst, P. Laggner, Institute of Biophysics and X-ray Structure Research, Austrian Academy of Sciences, Schmiedelstr. 6, 8043 Graz, Austria and D.Grosso, LCMC, Université Pierre et Marie Curie, 4 place Jussieu, 75252 Paris Cedex 5, France
- O/P.05** X-RAY MICRO-DIFFRACTION FOR ENGINEERED BONE ANALYSIS  
A.Cedola(a), M. Mastrogiacomo(b), V. Komlev(c), C. Giannini(d), A. Guagliardi(d), R. Cancedda(b), F. Rustichelli(c), and S. Lagomarsino(a), (a)Istituto di Fotonica e Nanotecnologie - CNR, V. Cineto Romano 42, 00156 Roma, Italy e INFN, Unita' di Ancona, (b)Centro Biotecnologie Avanzate - Laboratorio Medicina Rigenerativa, Largo R. Benzi 10, 16132 Genova, Italy, (c)Istituto di Scienze Fisiche, Università di Ancona, Via Ranieri 65, I60131 Ancona, Italy e INFN, Unita' di Ancona, (d)Istituto di Cristallografia - CNR, Via Amendola 122/o- 70126 Bari, Italy
- O/P.06** EFFECT OF CHAIN LENGTH ON THE LATERAL ORGANIZATION OF CHARGED LIPID MEMBRANES  
Georg Pabst(a), Heinz Amenitsch(a), Michael Rappolt(a), Peter Laggner(a), John Katsaras(b), Karl Lohner(a), and Andrea Hicel(a), (a)Institute of Biophysics and X-ray Structure Research, Austrian Academy of Sciences, Schmiedelstr. 6, 8042 Graz, Austria, (b)National Research Council, Steacie Institute of Molecular Sciences, Chalk River, Ontario K0J 1J0, Canada
- O/P.07** HIGH-ENERGY SYNCHROTRON DIFFRACTION STUDY OF STRESS-INDUCED PHASE TRANSITION AND TEXTURE IN A SUPERELASTIC NITI SHAPE MEMORY ALLOY  
W.W. Schmahl, A. Baruj, J. Khalil-Allafi, Th. Reinecke, Shape Memory Research Center, SFB 459, Ruhr-Universität, 44780 Bochum, Germany
- O/P.08** APPLICATION OF  $\mu$ -XAFS FOR THE DETERMINATION OF THE CRYSTALLIZATION RATIO IN A SERIES OF VITRO-CERAMIC MATERIALS CONTAINING INDUSTRIAL WASTE  
F. Pinakidou, M. Katsikini, E.C. Paloura, P. Kavouras, F. Komninou and Th. Karakostas, Aristotle Univ. of Thessaloniki, Dept. of Physics, 54124 Thessaloniki, Greece, A. Erko, BESSY GmbH, Albert Einstein Str. 15, 12489 Berlin, Germany
- O/P.09** ORDER AND SEGREGATION IN Co-Pt ALLOY CLUSTERS INVESTIGATED BY IN-SITU X-RAY ABSORPTION  
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- O/P.10** Withdrawn
- O/P.11** DEPTH RESOLVED LOCAL STRUCTURE IN THIN FILMS WITH PERPENDICULAR MAGNETIC ANISOTROPY BY GRAZING INCIDENCE X-RAY ABSORPTION SPECTROSCOPY  
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- O/P.12** LOCAL MAGNETISM IN GRANULAR IRON/IRON OXIDE NANOSTRUCTURES: A PHASE- AND SITE-SELECTIVE X-RAY MAGNETIC CIRCULAR DICHROISM STUDY  
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- O/P.13** MAGNETIC DOMAIN CONFIGURATIONS IN THIN RIBBONS WITH COMPETING ANISOTROPIES  
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- O/P.14** MAGNETIC ORDER IN SUBMICROMETRIC PATTERNED MAGNETIC FILMS STUDIED BY RESONANT SCATTERING OF POLARIZED SOFT X-RAYS  
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- O/P.15** TEMPERATURE DEPENDENT MN MAGNETISATION PROFILE IN A LSMO/STO SUPERLATTICE  
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- O/P.16** STRUCTURAL CHARACTERIZATION OF A CONJUGATED POLYELECTROLYTE  
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- O/P.17** CONTROLLED DRUG RELEASE FROM SILICA-BASED POROUS AND NON-POROUS MATERIALS  
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- O/P.18** ONLINE-STUDIES ON THE FORMATION OF SILICALITE-I MONITORED VIA SMALL ANGLE SCATTERING TECHNIQUES  
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- O/P.19** SMALL ANGLE X-RAY SCATTERING INVESTIGATION OF SELF-ORGANIZED CdSe/ZnSeS QUANTUM DOT ALIGNMENT  
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- O/P.20** ALIGNMENT OF GE NANO-ISLANDS ON Si(111) BY TAYLORED SURFACE SELF-PATTERNING  
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- O/P.21** MAGNETIC DOMAIN WALLS IN T-SHAPED PERMALLOY MICROSTRUCTURES  
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- O/P.22** COHERENT X-RAY DIFFRACTION FROM A MICRO-CRYSTAL AT THE ESRF: FIRST RESULTS AND QUESTIONS  
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- O/P.23** GISAXS STUDIES OF THE FORMATION OF Ge NANOCRYSTALS IN SiO<sub>2</sub> IN (Ge+SiO<sub>2</sub>)/SiO<sub>2</sub> MULTILAYERS DEPOSITED BY MAGNETRON SPUTTERING  
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- O/P.24** IMAGING OF MAGNETIC QUANTUM DOTS  
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- O/P.25** STRUCTURAL PERTURBATIONS WITHIN NANOCRYSTALLINE CU PROBED BY TEMPERATURE-DEPENDENT EXAFS  
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- O/P.26** STUDY OF GROWTH MECHANISM IN CADMIUM SULFIDE NANOCRYSTALS  
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- O/P.27** STRUCTURAL AND DYNAMICS PROPERTIES OF BARIUM MONOXIDE: A MOLECULAR DYNAMICS STUDY  
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- O/P.28** MODIFICATION OF THE Fe-ENVIRONMENT IN Fe<sub>2</sub>O<sub>3</sub> GLASS/GLASS CERAMIC SYSTEMS CONTAINING Pb, Na AND Si  
F. Pinakidou, M. Katsikini, E.C. Paloura, P. Kavouras, F. Komninou, O. Kalogirou, S. Kokkou and Th. Karakostas, Aristotle Univ. of Thessaloniki, Dept. of Physics, 54124 Thessaloniki, Greece
- O/P.29** PHOTOLUMINESCENCE CHARACTERIZATION OF SOL-GEL PREPARED LOW DENSITY SILICA SAMPLES  
C.M. Carbonaro, D. Chiriu, R. Corpino, P.C. Ricci, A. Anedda, Italy
- O/P.30** ELECTRONIC BAND STRUCTURE AND OPTICAL PROPERTIES OF SOME DOUBLE METAL PHOSPHATE MATERIALS  
S. Nedilko, R. Bojko, V. Degoda, Yu. Hizhnyi, P. Nagorny, M. Slobodyanik, Kyiv National Taras Shevchenko University, 2, block 1, acad. Hlushkov Ave., 03680 Kyiv, Ukraine and V. Bojko, V. Scheludko, National Agriculture University, Geroiv Oborony st., 03041 Kyiv, Ukraine and A. Voloshonovskii, Ivan Franko National University of Lviv, 8 Kyryla i Mefodia Str., 79005 Lviv, Ukraine
- O/P.31** RESONANT INELASTIC X-RAY SCATTERING APPLIED TO THE ELECTRONIC STRUCTURE OF STRONGLY CORRELATED SOLIDS  
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- O/P.32** MODELING THE DIFFRACTION PROFILES OF CVD-GROWN PEROVSKITE OXIDE MULTILAYERS  
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- O/P.33** LOCAL STRUCTURE AND DYNAMICS AROUND IODINE IN AgI-Ag<sub>2</sub>MoO<sub>4</sub> GLASSES  
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- O/P.34** RESONANT PHOTOEMISSION AT THE 2p EDGE IN COMPOUNDS CONTAINING Mn WITH DIFFERENT VALENCIES  
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- O/P.35** LOCAL STRUCTURE AND MAGNETO-TRANSPORT OF Sr<sub>2</sub>FeMoO<sub>6</sub> OXIDES  
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- O/P.36** CORRELATIONS BETWEEN THE LUMINESCENCE AND STRUCTURAL PROPERTIES OF NANODOTS IN SILICON-RICH NITRIDE BY X-RAY ABSORPTION SPECTROSCOPY  
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- O/P.37** ELECTRONIC STRUCTURE IN CHROMIUM ALUMINUM OXYNITRIDE THIN FILM  
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- O/P.38** A NEW NITROGEN-HYDROGEN COMPLEX IN GAASN REVEALED BY X RAY ABSORPTION SPECTROSCOPY  
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- O/P.39** IMPROVEMENT OF NITROGEN INCORPORATION INTO OXYNITRIDES ON 4H-SiC(0001)  
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- O/P.40** ULTRATHIN LAYERS OF GaN ON GaAs(100) AND InN ON InP(100) GROWTH STUDIED BY SYNCHROTRON RADIATION  
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- O/P.41** LOCAL ATOMIC AND ELECTRONIC STRUCTURE OF HIGH DIELECTRIC CONSTANT ULTRA THIN FILMS ON SI(001)  
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- O/P.42** THE APPLICATION OF X-RAY MICROPROBE TO PROBLEMS IN HARD, WIDE-BANDGAP SEMICONDUCTORS  
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- O/P.43** ANALYSIS OF ORDERING IN ALXGA1-XAS USING X-RAY DIFFRACTION  
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- O/P.44** GRAZING INCIDENCE SYNCHROTRON X-RAY DIFFRACTION INVESTIGATION OF ORGANIC THIN FILMS USED AS ACTIVE LAYERS FOR FETs  
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- O/P.45** SEMICONDUCTOR MATERIALS BEHAVIOR UNDER IONIZING CONDITIONS  
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- O/P.46** CORE-LEVEL PHOTOABSORPTION STUDY OF Si-INCOPORATED TETRAHEDRAL AMORPHOUS CARBON THIN FILMS  
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- O/P.47** GROWTH OF AG ON MGO(001) STUDIED IN SITU BY GRAZING INCIDENCE SMALL ANGLE X-RAY SCATTERING  
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- O/P.48** CHANGE OF HETEROSTRUCTURES CONTACT POTENTIAL DIFFERENCE INDUCED BY X-RAY IRRADIATION  
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- O/P.49** IN SITU X-RAY SYNCHROTRON STUDY OF ORGANIC SEMICONDUCTOR ULTRATHIN FILMS GROWTH  
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- O/P.50** CHARACTERIZATION OF THERMALLY TREATED MO/SI MULTILAYER MIRRORS WITH STANDING-WAVE-ASSISTED EXAFS  
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- O/P.51** THE Fe/NiO INTERFACE STUDIED BY XAS  
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- O/P.52** SYNCHROTRON RADIATION-INDUCED PHOTOEMISSION AS A PROBE TO INVESTIGATE ORGANIC ADSORBATES ON SEMICONDUCTOR SURFACES  
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- O/P.53** TEMPERATURE DEPENDENT ABSORPTION BEHAVIOUR OF DIETHYNYL-THIOPHENE ADSORBED ON Cu(100) INVESTIGATED BY NEXAFS AND XPS  
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- O/P.54** ELECTRONIC STRUCTURE OF Be(0001) SURFACE AS SEEN BY ARPES WITH VARIABLE POLARIZATION SYNCHROTRON RADIATION  
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- O/P.55** MOLECULAR ORIENTATION OF NEW FUNCTIONAL MIXED AROMATIC MOLECULES DEPOSITED ONTO Au/Si(111): COMPARISON BETWEEN ANGULAR DEPENDENT NEXAFS ANALYSIS AND THEORETICAL CALCULATIONS  
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- O/P.56** ENVIRONMENTAL FRIENDLY FLUOROCARBONS FOR PLASMA PROCESSING  
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- O/P.57** LUCIA, A MICROFOCUS SOFT XAS BEAMLINE  
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- O/P.58** DIFFABS (SOLEIL): A BEAMLINE DEDICATED TO THE STRUCTURAL STUDY OF MATERIALS BY COMBINATION OF XRD, XRF AND XAS  
D. Thiaudiere, A. Somogyi, F. Alves, M. Ribbens, Synchrotron Soleil, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette cedex, France, A. Bytchkov, I. Pozdnyikova, L. Hennet CRMHT, 1d avenue de la recherche scientifique, 45071 Orléans cedex, France
- O/P.59** TRACE ELEMENT ANALYSIS IN PRESOLAR METEORITE GRAINS USING THE NANO-ESCA  
P. Bernhard, J. Maul, G. Huber, H.J. Elmers, G. Schönhense, Johannes Gutenberg Universität, Institut für Physik, 55128 Mainz, Germany, Ch. Sudek, U. Ott, Max-Planck-Institut für Chemie, 55128 Mainz, Germany
- O/P.60** SELF-ABSORPTION EFFECT IN FLUORESCENCE DETECTION OF XANES AND EXAFS  
R. Castañer, Dep. Física, Universidad Miguel Hernández, Avda del Ferrocarril, Ed. Torrevalillo, 03202 Elche, Spain, I.M. Ochando, M. Vila and C. Prieto, Instituto de Ciencia de Materiales de Madrid, CSIC, 28049 Madrid, Spain
- O/P.61** STATUS OF THE WERA SOFT X-RAY BEAMLINE AT ANKA  
Eric Pellegrin, Peter Nagel, Christian Pinta, Bernd Scheerer, and Stefan Schuppler

Friday, June 3, 2005  
Vendredi 3 juin 2005

Morning  
Matin

**Session X : Engineering materials 1**  
**Session chair : W. Ludwig**

- O-X.01** 9:00 -Invited- PHASE TRANSFORMATIONS IN STEEL STUDIED BY 3DXRD-MICROSCOPY  
S.E. Offerman(a), N.H. van Dijk(b), J. Sietsma(a), E.M. Lauridsen(c), L. Margulies(c,d), S. Grigull(d), H.F. Poulsen(c) and S. van der Zwaag(e), (a)Delft University of Technology, Materials Science & Engineering, Rotterdamseweg 137, 2628 AL Delft, The Netherlands, (b)Delft University of Technology, Faculty of Applied Sciences, Mekelweg 15, 2629 JB Delft, The Netherlands, (c)Risø National Laboratory, Center for Fundamental Research: Metal structures in 4D, Frederiksborgvej 399, P.O. 49, Roskilde 4000, Denmark, (d)European Synchrotron Radiation Facility, BP 220, Grenoble 38043, France, (e)Delft University of Technology, Aerospace Engineering, Kluijverweg 1, 2629 HS Delft, The Netherlands
- O-X.02** 9:30 FOOTPRINTS OF DEFORMATION MECHANISM DURING IN-SITU X-RAY DIFFRACTION NANOCRYSTALLINE AND ULTRA-FINE GRAINED METALS  
Z. Budrovic, H. Van Swygenhoven, S. Van Petegem, P.M. Derlet, Paul Scherrer Institute, ASQ/NUM - Materials Science and Simulation, 5232 PSI-Villigen, Switzerland, B. Schmitt, Paul Scherrer Institute, SYN - Materials Science Beamline, 5232 PSI-Villigen, Switzerland
- O-X.03** 9:50 STUDY OF THE TEXTURAL EVOLUTION IN Ti-Rich NiTi USING SYNCHROTRON RADIATION  
A.S. Paula(a), J.H.P.G. Canejo(a), K.K. Mahesh(a), R.J.C. Silva(a), F.M. Braz Fernandes(a), R.M.S. Martins(b), A.M.A. Cardoso(b) and N. Schell(b), (a)CENIMAT, Campus da FCT/UNL, 2829-516 Monte de Caparica, Portugal, (b)FZR, ROBL-CRG at ESRF, B.P. 220, 38043 Grenoble, France
- O-X.04** 10:10 LATTICE DISTORTION IN  $\gamma'$  PRECIPITATES OF SINGLE CRYSTAL SUPERALLOY SC16 UNDER CREEP-DEFORMATION  
W. Chen, W. Neumann, Institute of Physics, Humboldt University Berlin, Newtonstraße 15, 12489 Berlin, Germany, I. Zizak, N. Darowski, G. Schumacher, Hahn-Meitner-Institute Berlin GmbH, Glienicke Straße 100, 14109 Berlin, Germany, H. Klingelhöffer, Federal Institute of Materials Research and Testing, Unter den Eichen 87, 12205 Berlin, Germany
- 10:30 **BREAK**

**Session XI : Engineering materials 2**  
**Session chair : S. Offerman**

- O-XI.01** 11:00 -Invited- MAPPING GRAINS AND THEIR DYNAMICS IN 3 DIMENSIONS.  
H.O. Sørensen, B. Jakobsen, E. Knudsen, E.M. Lauridsen, S.F. Nielsen, W. Pantleon, H.F. Poulsen, S. Schmidt and G. Winther, Center for Fundamental Research: Metal Structures in Four Dimensions, Risø National Laboratory, DK-4000 Roskilde, Denmark U. Lienert, Argonne National Laboratory, Advanced Photon Source, Argonne, Illinois, USA, L. Margulies, European Synchrotron Radiation Facility, BP 220, 38043 Grenoble, France
- O-XI.02** 11:30 X-RAY TOMOGRAPHY OF POWDER INJECTION MOLDED MICRO PARTS USING SYNCHROTRON RADIATION  
R. Heldele(a), S. Rath(a), L. Merz(a), R. Butzbach(b), M. Hagelstein(b) and J. Haubelt(a), Forschungszentrum Karlsruhe, (a)Institute for Materials Research III (b)Institute for Synchrotron Radiation, Germany
- O-XI.03** 11:50 IN SITU ANALYSIS OF CRACKS IN STRUCTURAL MATERIALS USING SYNCHROTRON X-RAY TOMOGRAPHY AND DIFFRACTION  
A. Steuwer(a), S. Ganguly(b), S. Pratihara(b), J.Y. Buffiere(c), L. Edwards(b), W. Ludwig(c), E. Maire(c), T.J. Marrow(d), I. Sinclair(e), M. Preuss(d) and P.J. Withers(d), (a)FaME38 at the ESRF-ILL, 6 rue J. Horowitz, 38042 Grenoble, France, (b)Dept of Materials Engineering, Open University, Milton Keynes MK7 6AA, U.K., (c)GEMPPM INSA Lyon, Bat Saint Exupéry, 20 Av. Albert Einstein, 69621 Villeurbanne, France, (d)Manchester Materials Science Centre, University of Manchester, Grosvenor Street, Manchester M1 7HS, U.K., (e)Materials Research Group, School of Engineering Sciences, University of Southampton, Southampton SO17 1BJ, U.K.
- O-XI.04** 12:10 NANOMETRIC INTERGRANULAR LIQUID LAYER PENETRATION IN THE Al/Ga SYSTEM: AN IN SITU X-RAY IMAGING INVESTIGATION  
E. Pereiro-López, ESRF, B.P. 220, 38043 Grenoble, France, W. Ludwig, GMPPM, INSA de Lyon, 69621 Villeurbanne Cedex, France, P. Cloetens, ESRF, BP 220, 38043 Grenoble, France and D. Bellet, GPM2,ENSPG, INPG, BP 46, 38402 Saint Martin d'Hères Cedex, France
- 12:30 **LUNCH**

**Friday, June 3, 2005**  
Vendredi 3 juin 2005

**Afternoon**  
Après-midi

**Session XII : Complex and biomaterials**  
**Session chair : H. Amenitsch**

- O-XII.01** 14:00                   DEPTH-RESOLVED STRAIN MEASUREMENTS IN POLYCRYSTALLINE THIN FILMS BY ENERGY-VARIABLE X-RAY DIFFRACTION  
E. Zolotoyabko, B. Pokroy, Z. Cohen-Chaims, Department of Materials Engineering, Technion - Israel Institute of Technology, Haifa 32000, Israel and J.P. Quintana, DND-CAT Research Center, Northwestern University, APS/ANL Sector 5, Building 432A, 9700 South Cass Avenue, Argonne IL 60439-4857, USA
- O-XII.02** 14:20                   X-RAY DIFFRACTION CONTRAST TOMOGRAPHY: A NEW TOOL FOR 3D CHARACTERIZATION OF UNDEFORMED POLYCRYSTALS  
W. Ludwig(a,c), E.M. Lauridsen(b), S. Schmidt(b), H.F. Poulsen(b), P. Cloetens(c), (a)GEMPPM - INSA de Lyon, France, (b)Risoe National Lab., Roskilde, Denmark, (c)ESRF, Grenoble, France
- O-XII.03** 14:40                   SAXS OF SELF-ASSEMBLED NANOCOMPOSITE FILMS WITH ORIENTED 2D CYLINDER ARRAYS: AN ADVANCED METHOD OF EVALUATION  
Bernd Smarsly, Max-Planck Institute of Colloids and Interfaces, 14476 Potsdam, Germany, Alain Gibaud, University of Le Mans, France, Wilhelm Ruland, University of Marburg, 35032 Marburg, Germany
- O-XII.04** 15:00                   VISUALIZATION OF FATIGUE CRACKS IN DENTAL MATERIALS USING 3D DATA OF SYNCHROTRON RADIATION BASED MICRO COMPUTED TOMOGRAPHY  
B. Müller, F. Pfrunder, L. Chiocca, D. Szczerba, Computer Vision Lab, ETH Zürich, Sternwartstr. 7, 8092 Zürich, Switzerland and N.D. Ruse, Biomaterials, Faculty of Dentistry, University of British Columbia, Vancouver V6T 1Z3, Canada
- 15:20                               **THE END**