



E-MRS Spring Meeting 2001
June 5 - 8, 2001

SYMPOSIUM M

Stress and Strain in Heteroepitaxy

Symposium Organizers:

Aldo Armagliato, CNR –LAMEL, Bologna, Italy

Marie-Jo Casanove, CEMES – CNRS, Toulouse, France

Jean-Paul Deville, IPCMS – GSI – CNRS, Strasbourg, France

Dirk Sander, MPI - Mikrostrukturphysik, Halle (Saale), Germany

Papers will be published in Applied Surface Science

E-MRS 2001 SPRING MEETING

SYMPOSIUM M

Tuesday, June 5, 2001

Mardi 5 juin 2001

Morning

Matin

Session I: Relaxation mechanisms I
Session Chair: A. Rocher

- 9:00 **Welcome and opening remarks:** J.-P. Deville
- M-I.01** 9:15 Invited KINETIC EFFECTS IN HETEROEPITAXIAL GROWTH, **J. Tersoff**, IBM J. Watson Research Center, Rt 134, PO Box 218, Yorktown Heights NY 10598, USA
- M-I.02** 9:45 STRAIN, STRESS AND ELASTIC ENERGY BY NANOMETRIC Ge DOTS ON Si(001), **P. Raiteri**, F. Valentinotti and L. Miglio, INFN and Department of Materials Science, University of Milano-Bicocca, Via Cozzi 53, 20125 Milano, Italy
- M-I.03** 10:05 GROWTH AND MORPHOLOGY OF MnAs OVER GaAs(111): AN INTERESTING STRAIN RELAXATION MECHANISM, **V.H. Etgens** and M. Eddrief, LMCP-CNRS et UP-VI et UP-VII, 4 Place Jussieu, 75252 Paris, France, J.-L. Maurice, Unité Mixte de Physique CNRS/Thales, Domaine de Corbeville, 91404 Orsay Cedex, France
- M-I.04** 10:25 STRESS IN MONOLAYERS: INVALIDATION OF CLASSICAL RULES, **D. Sander**, S. Ouazi, J. Kirschner, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany, and D.I. Bazhanov and V.S. Stepanyuk, Fachbereich Physik, Martin-Luther Universität Halle-Wittenberg, Friedemann-Bach Platz 6, 06099 Halle, Germany
- 10:45 **BREAK**
- M-I.05** 11:15 Invited ELASTIC RELAXATION OF ISOLATED AND INTERACTING TRUNCATED PYRAMIDAL QUANTUM DOTS AND QUANTUM WIRES IN A HALF SPACE, **F. Glas**, Laboratoire de Photonique et de Nanostructures, Centre National de la Recherche Scientifique, UPR 20, 196 avenue Henri Ravéra, BP 29, 92222 Bagneux Cedex, France
- M-I.06** 11:45 GROWTH AND RELAXATION MECHANISMS IN La_{0.66}Sr_{0.33}MnO₃ MANGANITES DEPOSITED ON SrTiO₃ (100) AND MgO(100), **M.-J. Casanove**, C. Roucau, P. Baulès, J.-C. Ousset, CEMES-CNRS, BP 4347, 31055 Toulouse cedex 4, France and D. Magnoux, J.-F. Bobo, LPMC, 31077 Toulouse cedex 4, France
- M-I.07** 12:00 KINETIC MONTE CARLO SIMULATION OF INTERDIFFUSION DURING SEMICONDUCTOR HETEROEPITAXY, **J. Dalla Torre**(a,b), H. Kassem(a), M. Djafari Rouhani(a,b), G. Landa(a), D. Esteve(b), (a)Laboratoire de Physique des Solides - UMR5477, Univ. Paul Sabatier, Toulouse, France, (b)LAAS-CNRS, Toulouse, France
- M-I.08** 12:25 CHARACTERIZATION OF YTTRIUM SESQUIOXIDE, Y₂O₃, THIN FILMS DEPOSITED BY LASER ABLATION ON MGO: WHY A BIAxIAL EPITAXY?, **R.J. Gaboriaud**(a), F. Pailloux(b), F. Paumier(a), (a)Laboratoire de Métallurgie Physique, Université de Poitiers, UMR 6630, CNRS-SP2MI, BP 30179, 86962 Chasseneuil-Futuroscope cedex, France, (b)UMR 137 CNRS, Thomson CSF, 91404 Orsay, France
- 12:45 **LUNCH**

Tuesday, June 5, 2001
Mardi 5 juin 2001

Afternoon
Après-midi

Session II: Relaxation mechanisms II
Session Chair: D. Sander

- M-II.01** 14:15 Invited STRUCTURAL CHARACTERIZATION OF III-V HETEROSTRUCTURES GROWN UNDER COMPRESSIVE AND TENSILE STRESS, **G. Salviati**, MASPEC-CNR Institute, Parco Area delle Scienze 37/A, Loc. Fontanini, 43010 Parma, Italy
- M-II.02** 14:45 STRESS RELAXATION IN POROUS 3C-SiC/Si HETEROSTRUCTURE, **V. Lysenko**, D. Barbier, Laboratory of Materials Physics (LPM), INSA de Lyon, 20 av. A. Einstein, Bat. 502, 69621 Villeurbanne Cedex, France and G. Ferro, Th. Chassagne, Y. Monteil, Laboratory of Multimaterials and Interfaces, University Claude Bernard Lyon 1, Bat. Berthollet, 43 bd 11 Novembre 1918, 69622 Villeurbanne Cedex, France
- M-II.03** 15:05 DISLOCATION PATTERNING IN PbTe HETEROEPITAXY ON PbSe (100), K. Wiesauer and **G. Springholz**, Johannes Kepler Universitaet, 4040 Linz, Austria
- M-II.04** 15:25 TEM EVALUATION OF EPITAXIAL STRAIN IN III-V SEMI-CONDUCTORS: EVIDENCE OF COHERENT AND INCOHERENT STRESS RELAXATION, **A. Rocher** and J. Morillo, CEMES-CNRS, BP 4347, 31055 Toulouse, France, C. Fontaine and S. Blanc, LAAS-CNRS, BP, 31055 Toulouse, France
- M-II.05** 15:45 STRAIN RELAXATION IN LONG-RANGE ORDERED (GaIn)P ON GaAs INVESTIGATED BY TRANSMISSION ELECTRON MICROSCOPY, **E. Spiecker***, M. Seibt, W. Schröter, IV. Physikalisches Institut, Universität Göttingen, Bunsenstrasse 13-15, 37073 Göttingen, Germany, R. Winterhoff, F. Scholz, 4. Physikalisches Institut, Universität Stuttgart, Pfaffenwaldring 57, 70550 Stuttgart, Germany, *now at: Mikrostrukturanalytik, Technische Fakultät, Universität Kiel, Kaiserstr. 2, 24143 Kiel, Germany
- M-II.06** 16:05 RELATIONSHIP BETWEEN THE CRITICAL LAYER THICKNESS AND THE DECAY- TIME CONSTANT OF RHEED OSCILLATION AT THE InGaAs/GaAs HETEROSTRUCTURES, **A. Nemcsics**, Hungarian Academy of Sciences, Research Institute for Technical Physics and Materials Science, P.O. Box 49, 1525 Budapest, Hungary;
- 16:25 **BREAK**
- 16:55–18:45 **Poster Session**
- M/P01** THE INFLUENCE OF ELASTIC STRESSES DURING GROWTH OF (Al)GaAs/InGaAs/(Al)GaAs QUANTUM WELL HETEROSTRUCTURES ON INDIUM DISTRIBUTION, **R.Kh. Akchurin**, A.Y. Andreev, Moscow State Academy of Fine Chemical Technology, 86 Vernadskogo Ave., 117571 Moscow, Russia, O.I. Govorkov, R&D Institute "Polus", 13 Vvedenskogo Str., 117342 Moscow, Russia, A.A. Marmaluk, A.V. Petrovsky, Sigma Plus Co., 13 Vvedenskogo Str., 117342 Moscow, Russia.
- M/P02** STRAIN RELAXATION MECHANISMS IN THERMAL EXPANSION MISMATCHED PbTe-on-Si(111) SUBSTRATES, K. Alchalabi, D. Zimin, **H. Zogg**, Thin Film Physics Group, Lab. for Solid State Physics, ETH Zürich, Technoparkstr., 8005 Zürich, Switzerland
- M/P03** INFLUENCE OF IMPURITIES ON ELASTIC STRAIN OF LIQUID PHASE EPITAXY GROWN HETEROSTRUCTURES BASED ON III-V SEMICONDUCTORS, **V.V. Arbenina**, Moscow State Academy of Fine Chemical Technology, Vernadskogo pr. 86, 117571 Moscow, Russia

- M/P04** INFLUENCE OF STRESS IN GROWTH PROCESS ON PARAMETERS OF EPITAXIAL HETEROSTRUCTURES BASED ON GALLIUM ARSENIDE, V.V. Arbenina, Moscow State Academy of Fine chemical Technology, Vernadskogo pr.86, 117571 Moscow, Russia
- M/P05** STRESS-INDUCED TRANSFORMATION OF STRAIN IN THIN SEMICONDUCTING LAYERS, J. Bak-Misiuk, J.Z. Domagala, J. Adamczewska, Institute of Physics PAS, Al. Lotnikow 46, 02-668 Warsaw; A. Misiuk, J. Kaniewski, K. Reginski, Institute of Electron Technology, 02-668 Warsaw; W. Strupinski, Institute of Electronic Materials Technology, 01-919 Warsaw, Poland
- M/P06** NANOMETER-SCALE STRAIN DISTRIBUTION ACROSS SHALLOW TRENCH ISOLATION STRUCTURES BY CONVERGENT BEAM ELECTRON DIFFRACTION, A. Benedetti(a), A.G. Cullis(a), A. Armigliato(b), R. Balboni(b), S. Frabboni(c), G.P. Carnevale(d), G. Pavia(d), (a)Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK, (b)CNR-Istituto LAMEL, Via P. Gobetti 101, 40129 Bologna, Italy, (c)Istituto Nazionale Fisica della Materia (INFM) and Dipartimento di Fisica Universita di Modena e Reggio Emilia, Via G.Campi 213/A 41100 Modena, Italy, (d)ST Microelectronics s.r.l., Via C.Olivetti 2, 20041 Agrate Brianza, Italy
- M/P07** ROLE OF STRAIN IN THE MAGNETIC ANISOTROPY OF Fe FILMS EPITAXIALLY GROWN ON Si(001), P. Bertoncini, P. Wetzel, A. Mehdaoui, B. Loegel, D. Berling and G.Gewinner, LPSE, 4 rue des frères Lumière, 68093 Mulhouse, France, V. Pierron-Bohnes, IPCMS-GEMM, 23 rue du Loess, 67037 Strasbourg, France, H. Renevier and J.-F. Berar, Laboratoire de Cristallographie, BP 166, 38042 Grenoble, France
- M/P08** INTERFACIAL STRUCTURE IN (111) Au-Ni MULTILAYERS, T. Bigault(a), F. Bocquet(a), B. Gilles(c), H. Renevier(b), O. Thomas(a), (a)Laboratory TECSSEN, CNRS, Univ. Aix-Marseille III, 13397 Marseille, France, (b)Laboratoire de Cristallographie, CNRS, BP166, 38042 Grenoble, France, (c)Domaine Universitaire de St. Martin d'Hères, LTPCM UMR CNRS 5614, 38402 St. Martine d'Hères, France
- M/P09** STRESS ANALYSIS BY IN SITU EXPERIMENTS OF CURVATURE AND X-RAY DIFFRACTION DURING ANNEALING OF AL(SI,CU) FILM AND TI/AL(SI,CU) BILAYER, O. Bostrom, STMicroelectronics, ZI de Rousset Penyer, 13106 Rousset Cedex, France, P. Gergaud, O. Thomas, TECSSEN, UMR CNRS 6122, University of Aix-Marseille III, 13397 Marseille Cedex 20, France, B. Chenevier, LMGP, CNRS, ENSPG, 38402 St Martin d'Hères, France, P. Boivin, STMicroelectronics, ZI de Rousset Penyer, 13106 Rousset Cedex, France
- M/P10** STRUCTURE AND MORPHOLOGY OF THIN COBALT FILMS DEPOSITED ON VICINAL SURFACE Cu(111), A. Chaumin Midoir, Laboratoire LURE, Université Paris Sud, 91898 Orsay Cedex, France, H. Magnan, CEA/Saclay, DSM/DRECAM/SPCSI, 91191 Gif-sur-Yvette Cedex, France, P. Le Fèvre, D. Chandesis, Laboratoire LURE, Université Paris Sud, 91898 Orsay Cedex, France, L. Barbier, CEA/Saclay, DSM/DRECAM/SPCSI, 91191 Gif-sur-Yvette Cedex, France
- M/P11** COMPETITION BETWEEN SHORT AND LONG RANGE RELAXATION MECHANISMS IN THE 2D SELF-ORGANIZED N/CU(1,0,0) SYSTEM, H. Ellmer*, V. Repain, B. Croset, Y. Girard, G. Prevot, S. Rousset, M. Sotto Groupe de Physique des Solides, Universités Paris 7 et Paris 6, Laboratoire Associé au C.N.R.S., 2 Place Jussieu, 75251 Paris Cedex 5, France, *present adress: Institut für Experimentalphysik, Johannes-Kepler-Universität Linz, 4040 Linz, Austria
- M/P12** DAFS EXPERIMENTS IN STRONGLY ANISOTROPIC CoPt ALLOY LAYERS, O. Ersen, V. Pierron-Bohnes, M.-C. Cadeville, IPCMS-GEMM, 23, rue du Loess, 67037 Strasbourg, France, H. Renevier, Laboratoire de Cristallographie, CNRS, BP 166, 38041 Grenoble, France, A. Marty, SP2M-DRFMC-CEA, 38054 Grenoble, France, B. Gilles, LTPCM-CNRS, BP 75, 38042 St-Martin d'Hères, France
- M/P13** CALCULATION OF STRAIN FILDS RESULTING FROM COMPOSITION HETEROGENEITIES IN EPITAXIAL NANOSTRUTURES, P. François, T. Benabbas, Y. Androussi and A. Lefebvre, LSPES (UPRESA 8008), USTL, Bâtiment C6, 59655 Villeneuve d'Ascq cedex, France

- M/P14** AN AB INITIO STUDY OF Mg AND O ADATOMS ADHESION AND DIFFUSION ON MgO (001) SURFACE, G. Geneste, J. Morillo, CEMES, 29 rue Jeanne Marvig, 31055 Toulouse, France and F. Finocchi, Laboratoire de Physique des Solides, Universite Paris-Sud, Batiment 510, 91405 Orsay cedex, France
- M/P15** IN SITU MONITORIZATION OF THE RELAXATION PROCESS DURING GROWTH OF InGaAs/GaAs, M.U. Gonzalez, Y. Gonzalez, L. Gonzalez, J.P. Silveira, J.M. Garcia and F. Briones, Instituto de Microelectronica de Madrid (CNM-CSIC), C/Isaac Newton, 8 (PTM), 28760 Tres Cantos Madrid, Spain
- M/P16** ATOMISTIC SIMULATIONS OF RELAXATION AND RECONSTRUCTION PHENOMENA IN HETEROEPITAXY OF METALLIC THIN FILMS, C. Goyhenex, H. Bulou, J.-P. Deville, IPCMS, UMR 7504 du CNRS, 23 Rue du Loess, 67037 Strasbourg Cedex, France and G. Trégliat, CRMC2-CNRS, Campus de Luminy, case 913, 13288 Marseille Cedex 9, France
- M/P17** EXPERIMENTAL STUDY OF THE POLARIZATION SELECTION RULE FOR INTERSUBBAND TRANSITIONS IN InGaAs/GaAs QUANTUM WELLS, J. Hernando(a), J.M.G. Tijero(a), D. Gonzalez(b), G. Aragon(b), R. Garcia(b), A. Guzman(a) and J.L. Sanchez-Rojas(a), (a)Dpt. Ingenieria Electronica, E.T.S. Telecomunicacion, Universidad Politécnic de Madrid, Spain, (b)Dpt. Ciencia de Materiales, Universidad de Cadiz, Spain.
- M/P18** DIKE SUPERLUMINESCENCE IN STRAINED QUANTUM GaAs/InGaAs/GaAs-HETEROSTRUCTURES, A.I. Klimovskaya, Yu.A. Dryha, E.G. Gule, Institute of Semiconductor Physics, NAS, Integrate Electronics, Prospect Nauki 45, 03028 Kiev, Ukraine
- M/P19** GROWTH OF Ga(In)NAs/GaAs BY PLASMA-ASSISTED MOLECULAR BEAM EPITAXY, W. Li, J. Turpeinen and M. Pessa, Optoelectronics Research Center, Tampere University of Technology, P.O.Box 692, 33101 Tampere, Finland
- M/P20** STABILITY OF EPITAXIAL METALLIC ISLANDS. A QUANTUM MECHANICAL STUDY OF CHEMICAL BONDING AND STRAIN EFFECTS, A.M. Mazzone and G. Mattei, C.N.R. LAMEL, via Gobetti 101, Bologna 40129, Italy
- M/P21** SURFACE X-RAY STRUCTURE ANALYSIS OF PERIODIC MISFIT DISLOCATIONS AND RESIDUAL STRAIN IN Fe/W(110), R. Popescu, H.L. Meyerheim, D. Sander, and J. Kirschner, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany and P. Steadman and S. Ferrer, European Synchrotron Radiation Facility, B.P. 202, 38043 Grenoble, France
- M/P22** ON THE SELF-ORGANIZATION OF 3D ISLANDS IN STRAINED HETEROEPITAXY ON A SUBSTRATED WITH A THIN TWISTED BONDED LAYER, C. Priester, IEMN/Dept ISEN, BP 69, 59652 Villeneuve d'Ascq cedex, France
- M/P23** MAGNETOELASTIC COUPLING IN OLIGATOMIC EPITAXIAL LAYERS: THE DECISIVE ROLE OF FILM STRAIN, D. Sander, S. Ouazi, Th. Gutjahr-Löser, A. Enders, and J. Kirschner, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany
- M/P24** SUBSTRATE MANIPULATION BY THE INSERTION OF A STRAINED BURIED d LAYER: EFFECT ON Ge/Si GROWTH, L. Simon, P. Louis, J.L. Bischoff, C. Pirri, D. Aubel, L. Kubler, LPSE, CNRS, 4, rue des Frères Lumière, 68093 Mulhouse, France, G. Castelein, ICSI-CNRS, 15, rue Jean Starcky, BP 2488, 68057 Mulhouse, France, P. Masri, GES, 12 Place Eugène Bataillon, 34095 Montpellier Cedex 05, France, S.H. Christiansen, IBM, T.J. Watson Research Center, PO Box 218, Rt. 134 ,Yorktown Heights NY 10598, USA, J.L. Bubendorff, UTAP-LMET, 21 rue Clement Ader, 51685 Reims cedex 2, France
- M/P25** INFLUENCE OF STRAIN ON THE MAGNETOCRYSTALLINE ANISOTROPY IN EPITAXIAL CR/CO/PD(111) FILMS, S. Boukari, E. Beaupaire, H. Bulou, B. Carrière, J. P. Deville, F. Scheurer, IPCMS, UMR 7504 du CNRS, 23 Rue du Loess, F-67037 Strasbourg Cedex, France, M. De Santis and R. Baudoing-Savois, Laboratoire de Cristallographie, UPR 5031 CNRS-INPG-Université J. Fourier, 25 av. des Martyrs, 38042 Grenoble, France

Wednesday, June 6, 2001
Mercredi 6 juin 2001

Afternoon
Après-midi

Session III: Strain and stress measurements I
Session Chair: M.-J. Casanove

- M-III.1** 14:15 Invited STRESS AND STRAIN IN EPITAXIAL FILMS: IMPACT ON MAGNETIC PROPERTIES, **J. Kirschner** and D. Sander, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany
- M-III.2** 14:45 Invited MEASUREMENT AND INTERPRETATION OF STRAIN BY HIGH-RESOLUTION X-RAY DIFFRACTION, **D.J. Dunstan**, Physics Dept., Queen Mary and Westfield College, University of London, London E1 4NS, UK
- M-III.3** 15:15 LIMITED In INCORPORATION DURING PSEUDOMORPHIC InAs/GaAs GROWTH AND QD FORMATION OBSERVED BY IN-SITU STRESS MEASUREMENTS, **J.P. Silveira**, J.M. Garcia and F. Briones, Instituto de Microelectronica de Madrid (CNM-CSIC). C/ Isaac Newton, 8. 28760-Tres Cantos, Madrid, Spain
- M-III.4** 15:35 MICROSTRUCTURAL ANALYSIS IN RELAXED EPITAXIAL OXIDE LAYERS, **A. Boulle**, R. Guinebretière, A. Dager, Science des Procédés Céramiques et de Traitements de Surface, UMR 6638, ENSCI, 47-73 avenue Albert Thomas, 87065 Limoges Cedex, France
- M-III.5** 15:55 STRAIN EFFECT ON INTERATOMIC DISTANCES IN InGaAs/InP EPITAXIAL LAYERS, **M. Tormen**(a,*), D. De Salvador(a), F. Boscherini(b), F. Romanato(c), G. Rossetto(d), S. Mobilio(e), A.V. Drigo(a), (a)INFN, Dipartimento di Fisica "G. Galilei" via Marzolo 8, 35131 Padova, Italy, (b)INFN, Università di Bologna, viale C. Berti Pichat 6/2, 40127 Bologna, Italy, (c)TASC-INFN at Elettra Synchrotron, Basovizza, Trieste, Italy, (d)Istituto Chimica Tecn. Inorganiche Materiali Avanzati (ICTIMA-CNR), Corso Stati Uniti4, 35020 Padova, Italy, (e)INFN, Laboratori Nazionali di Frascati, P.O. Box, 00044 Frascati, Italy and Dipartimento di Fisica, Università Roma Tre, Via della Vasca Navale 84, 00146 Roma, Italy, (*)Present address: Physikalisches Institut, Universität Würzburg, Am Hubland, 97974 Würzburg, Germany.
- 16:15 **BREAK**

- M-III.6** 17:05 X-RAY DIFFRACTION STUDY OF THE ELASTIC STRAINS IN EPITAXIAL Ni/Mo MULTILAYERS GROWN BY DIRECT ION BEAM SPUTTERING, F. Martin, J. Pacaud, G. Abadías, C. Jaouen and P. Guérin, Laboratoire de Métallurgie Physique, UMR CNRS 6630, Université de Poitiers, BP 30179, 86962 Futuroscope-Chasseneuil, France
- M-III.7** 17:05 STRESS AND STRAIN IN TWO-DIMENSIONAL EPITAXIAL GROWTH : STUDY OF IN-PLANE LATTICE SPACING OSCILLATIONS, P. Turban, S. Andrieu, Laboratoire de Physique des Matériaux, UMR 7556, CNRS/Université H. Poincaré Nancy, France, P. Müller, L. Lapena, Centre de Recherche sur les Mécanismes de la Croissance Cristalline, CNRS/Universités Aix-Marseille II et III, France
- M-III.8** 17:25 LATERAL CARRIER CONFINEMENT IN STRAIN-MODULATED InGaAs-NANOSTRUCTURES, U. Zeimer(a), J. Grenzer(b), U. Pietsch(b), J. Fricke(a), S. Gramlich(a), F. Bugge(a), M. Weyers(a) and G. Tränkle(a), (a)Ferdinand-Braun-Institut für Höchstfrequenztechnik, Albert-Einstein-Str. 11, 12489 Berlin, Germany, (b)Institut für Physik, Universität Potsdam, Am Neuen Palais 10, 14415 Potsdam, Germany
- M-III.9** 17:45 REAL-TIME DIAGNOSTICS OF GROWTH OF GERMANIUM NANOCRYSTALLITES ON PARTIALLY HYDROGEN-TERMINATED SILICON SURFACES BY SPECTROSCOPIC ELLIPSOMETRY, F. Schmitt, A. Osipov, P. Hess Institute of Physical Chemistry, University of Heidelberg, Im Neuenheimer Feld 253, 69120 Heidelberg, Germany
- M-III.10** 18:05 Invited ATOMIC STRUCTURE OF Ni, Co, AND Fe EPITAXIAL FILMS: FROM PURE PSEUDOMORPHIC GROWTH TO COMPLEX RECONSTRUCTION, **S. Müller** and K. Heinz, Universität Erlangen-Nürnberg, Lehrstuhl für Festkörperphysik, Staudtstr. 7, 91058 Erlangen, Germany many

Thursday, June 7, 2001
Jeudi 7 juin 2001

Morning
Matin

Session IV: Growth, surface structure and diffusion
Session Chair: J.-P. Deville

- M-IV.1** 8:45 Invited LONG-RANGE INTERACTIONS BETWEEN ADSORBATES AND THEIR IMPACT ON DIFFUSION AND GROWTH, **H. Brune**, EPFL, Lausanne, Switzerland
- M-IV.2** 9:15 MICROTWINING AND RELAXATION IN EPITAXIAL FePd LAYERS DEPOSITED BY MBE, **D. Halley**, Y. Samson, A. Marty, B. Gilles, C. Beigné, P. Bayle Guillemaud, JE. Mazille, CEA Grenoble, France
- M-IV.3** 9:35 EPITAXY STABILIZED CaF₂-TYPE TERNARY Co_xFe_{1-x}Si₂ SILICIDES ON Si(111): XRD AND DAFS MEASUREMENTS, **O. Ersen**, V. Pierron-Bohnes, IPCMS-GEMM, 23 rue du Loess, 67037 Strasbourg, France, C. Pirri, M.-H. Tuilier, D. Berling, LPSE, 4 rue des frères Lumière, 68093 Mulhouse, France, M. Gailhanou, LURE, Univ. Paris Sud, bât. 209D, 91405 Orsay, France
- M-IV.4** 9:55 EPITAXIAL GROWTH AND STRUCTURAL CHARACTERIZATION OF NiO LAYERS DEPOSITED ON MgO(001), MgO(110) AND MgO(111), **B. Warot(a)**, E. Snoeck(a), M.-J. Casanove(a), S. Dubourg(b), J.-F. Bobo(b), (a)CEMES - CNRS, Toulouse, France, (b)LPMC - INSA, Département de Physique, Toulouse, France
- 10:15 **BREAK**
- M-IV.5** 10:45 Invited UNDERSTANDING THE ORIGIN OF STRAIN RELAXATION PHENOMENA BY EXPERIMENT AND SIMULATION, **S.H. Christiansen(a,c)**, O.G. Schmidt(b), B. Jahnen(a), H.P. Strunk(a), K. Eberl(b), (a)Universität Erlangen Nürnberg, Werkstoffwissenschaften 7, Germany, (b)Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany, (c)IBM, T.J. Watson Research Center, Yorktown Heights, USA, IBM, Yorktown Heights, USA
- M-IV.6** 11:15 KINETIC MODEL OF QUANTUM DOT NUCLEATION, **A.V. Osipov**, S.A. Kukushkin, P. Hess, Institute of Physical Chemistry, University of Heidelberg, INF 253, 69120 Heidelberg, Germany
- M-IV.7** 11:35 A LATTICE GAS MODEL OF STRAINED EPITAXY AND SELF-ORGANISATION IN HETEROGENOUS SYSTEMS, **V.I. Tokar**, Institute of Magnetism, National Academy of Sciences, 36-b Vernadsky str., 03142 Kiev 142, Ukraine, H. Dreyssé, IPCMS-GEMME, 23 rue du Loess, 67037 Strasbourg, France
- M-IV.8** 11:55 Invited THEORETICAL APPROACH OF RELAXATION AND RECONSTRUCTION PHENOMENA IN HETEROEPITAXY OF METALLIC FILMS, **H. Bulou**, IPCMS-GSI, Strasbourg, France
- M-IV.9** 12:25 INTERPLAY BETWEEN ATOMIC AND MESOSCOPIC ORDER ON GOLD VICINAL SURFACES, **V. Repain**, G. Baudot, S. Rousset, Groupe de Physique des Solides, 2 place Jussieu, 75251 Paris Cedex 05, France, Y. Garreau, LURE, Centre Universitaire, 91898 Orsay Cedex, France
- 12:45 **LUNCH**

Thursday, June 7, 2001
Jeudi 7 juin 2001

Afternoon
Après-midi

Session V: Properties and technology of stressed systems
Session Chair: O. Thomas

- M-V.1** 14:15 Invited MISFIT DISLOCATIONS IN (0001)GaN HETEROSTRUCTURES, **D. Cherns**, H.H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, UK
- M-V.2** 14:45 STRAIN INDUCED MAGNETIC ANISOTROPY IN EPITAXIAL MANGANITE FILMS, **L. Ranno**, E. Favre-Nicolin, A. Llobet, R. Tiron, Laboratoire Louis Néel, Polyone CNRS, BP 166, 38042 Grenoble Cedex 9, France
- M-V.3** 15:05 STUDIES OF THICKNESS DEPENDENCE OF MORPHOLOGY, MAGNETIC AND ELECTRICAL PROPERTIES OF (La,Sr)MNO₃ THIN FILMS, **G.M. Gross**, Z.H. Wang*, F.S. Razavi**, G. Cristiani and H.-U. Habermeier, Max-Planck Institute for Solid State Research, 70569 Stuttgart, *Max-Planck Institute of Metal Research, 70569 Stuttgart, Germany, **Dept. of Physics, Brock University, St. Cathrines, Canada
- M-V.4** 15:25 RELAXATION MODES IN THE EPITAXY OF (La_{0.7}Sr_{0.3})MnO₃ ON SrTiO₃ AND THEIR IMPACT ON MAGNETIC PROPERTIES, **J.-L. Maurice**, F. Pailloux, R. Lyonnet, A. Barthélémy, J.-P. Contour, Unité Mixte de Physique CNRS/Thales, 91404 Orsay, France, O. Durand, LCR Thales, 91404 Orsay, France and A. Rocher, CEMES-CNRS, 31055 Toulouse, France

15:45

BREAK

Session VI: Strain and stress measurements II
Session Chair: G.M. Gross

- M-VI.1** 16:15 Invited INFLUENCE OF INTERFACIAL CONCENTRATION PROFILES ON STRESS DEVELOPMENT IN THIN FILMS, **O. Thomas**, TECSSEN, Faculté des Sciences et Techniques de St-Jérôme, 13397 Marseille Cedex 2, France
- M-VI.2** 16:45 STRUCTURAL PROPERTIES OF ZnO FILMS GROWN ON (0001) SAPPHIRE SUBSTRATES, **W. Seiler**, LM3, ENSAL Paris, 151 bd de l'Hopital, 75013 Paris, France, J. Perrière, E. Million*, GPS, Univ. Paris 7, 2 pl. Jussieu, 75251 Paris, France, (*also at LSMCL, Metz, France), O. Albert, J. Etchepare, J.C. Loulergue, LOA ENSTA, 91761 Palaiseau, France, V. Craciun, Natioanl Institute for Laser, Bucharest, Romania
- M-VI.3** 17:05 SIMULTANEOUS STRESS AND SURFACE X-RAY MEASUREMENTS OF FE MONOLAYERS ON W(110), **R. Popescu**, H.L. Meyerheim, D. Sander, and J. Kirschner, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany and P. Steadman and S. Ferrer, European Synchrotron Radiation Facility, B.P. 202, 38043 Grenoble, France
- M-VI.4** 17:25 COMPRESSION OF GRAPHITIC SHELLS IN AGGREGATES: A HRTEM STUDY, **J.C. Arnault**, M. Romeo, G. Ehret, et F. Le Normand, Groupe Surfaces-Interfaces, Institut de Physique et Chimie de Strasbourg, IPCMS-GSI, UMR 7504, 23, rue du Loess, 67037 Strasbourg, France, F. Banhart, P. Kohler-Redlich, MPI Stuttgart, Seestr. 92, 70174 Stuttgart, Germany
- M-VI.5** 17:45 MICROSTRUCTURAL ANALYSIS OF Au/Ni MULTILAYERS INTERFACES BY SAXS AND STM, **S. Labat**(a), C. Guichet(b), O. Thomas(a), B. Gilles(c), A. Marty(c), (a)TECSSEN UMR 6122, Faculté de Saint Jérôme, 13397 Marseille, France, (b)Interface Physique-Biologie-Médecine, Faculté de Saint Jérôme, 13397 Marseille, France, (c)SP2M/DRFMC/CEA, Centre d'Etudes Nucléaires, 38054 Grenoble, France

Friday, June 8, 2001
Vendredi 8 juin 2001

Morning
Matin

Session VII: Properties and technology of stressed systems II
Session Chair: A. Armagliato

- M-VII.1 9:00 APPLICATION OF WAFER BONDING TO THE LATERAL SELF-ORGANIZATION OF Si DOTS BY A PERIODIC SUBSURFACE DISLOCATION ARRAY, APPLICATION OF WAFER BONDING TO THE LATERAL SELF-ORGANIZATION OF SI DOTS BY A PERIODIC SUBSURFACE DISLOCATION ARRAY, J. Eymery, N. Magnea, K. Rousseau, J.L. Rouvière, D. Buttard, F. Rieutord, F. Leroy, P. Gentile, CEA Grenoble/DRFMC, France, H. Moriceau, F. Fournel, B. Aspard, P. Mur, M. N. Semeria, CEA Grenoble/LETI; Th. Baron, INSA/Lyon, France
- M-VII.2** 9:30 SELF-ASSEMBLING OF InAs/InP QUANTUM WIRES DUE TO STRESS ANISOTROPY, M.U. Gonzalez, J.M. Garcia, L. Gonzalez, J.P. Silveira, Y. Gonzalez and F. Briones, IMM Instituto de Microelectronica de Madrid (CNM-CSIC), C/Isaac Newton, 8 (PTM), 28760 Tres Cantos Madrid, Spain
- M-VII.3** 9:50 ON COMPLIANT EFFECT IN TWIST-BONDED SYSTEMS, S. Rohart, IEMN/Dept ISEN, BP 69, 59652 Villeneuve d'Ascq cedex, France, G. Grenet, LEOM, Ecole Centrale de Lyon, BP 163, 69131 Ecully cedex, France and C. Priester, IEMN/Dept ISEN, BP 69, 59652 Villeneuve d'Ascq cedex, France
- M-VII.4** 10:10 MAGNETOTRANSPORT PROPERTIES OF FULLY STRESSED La₂/3Ca₁/3MnO₃ EPITAXIAL FILMS, M. Bibes, B. Martinez, S. Valencia, Ll. Balcells and J. Fontcuberta, Institut de Ciencia de Materials de Barcelona, Campus UAB, Bellaterra 08193, Catalunya, Spain, M.-J. Casanove, CEMES-UPR CNRS, BP 4347, 31055 Toulouse, France
- M-VII.5** 10:30 RELAXATION MODES IN THE EPITAXY OF CUPRATES Yba₂Cu₃O₇ AND NdBa₂Cu₃O₇ ON SrTiO₃ AND THEIR IMPACT ON ELECTRON TRANSPORT, O. Durand(b), J.-L. Maurice(a), S. Berger(a)*, K. Bouzehouane(a), J. Briatico(a), J.-P. Contour(a), D. Crété(a), (a)Unité Mixte de Physique, CNRS/Thales, 91404 Orsay, France, (b)LCR Thales, 91404 Orsay, France, *now at SPEC/CEA-Saclay, 91191 Gif-sur-Yvette, France
- 10:50 **BREAK**
- M-VII.6** 11:20 BIDIMENSIONAL ARRAYS OF COHERENT STRAINED ISLANDS, N. Combe, P. Jensen and J.-L. Barrat, Departement de Physique des Materiaux, Universite Claude Bernard Lyon 1, 69622 Villeurbanne cedex, France
- M-VII.7** 11:40 GROWTH INDUCED MAGNETIC ANISOTROPY IN ULTRATHIN Co FILMS ON Cu(001), H. Wormeester, S. van Dijken and B. Poelsema, University of Twente, Enschede, The Netherlands
- 12:10 **Concluding remarks:** D. Sander