



Strasbourg (France)

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

SYMPOSIUM D

Materials science and device issues for future Si-based technologies

Symposium Organizers :

Fuccio Cristiano, LAAS/CNRS, Toulouse, France

Benjamin Colombeau, Chartered Semiconductor Manufacturing,
Singapore

Ray Duffy, Philips Research, Leuven, Belgium

Lourdes Pelaz, University of Valladolid, Spain

Suresh Uppal, University of Southampton, U.K.

Symposium Support :



Papers to be published in
Materials Science and Engineering B

Tuesday, May 31, 2005

Mardi 31 mai 2005

Afternoon

Après-midi

Session III : SOI

Session chair: T. Skotnicki

- D-III.01** 14:15 -Invited- STRAIN ENGINEERING IN SOI-TYPE MATERIALS FOR FUTURE TECHNOLOGIES
Bruno Ghyselen, SOITEC, Parc techn. des Fontaines, 38190 Bernin, France
- D-III.02** 14:45 UNDERSTANDING THE ROLE OF BURIED SI/SIO₂ INTERFACE ON DOPANT AND DEFECT EVOLUTION IN PAI USJ
J.J. Hamilton(a), E.J.H. Collart(b), B. Colombeau(a), M. Bersani(b), D. Giubertoni(c), J.A. Sharp(a), N.E.B. Cowern(a), and K.J. Kirkby(a), (a)Advanced Technology Institute, University of Surrey, Guildford, Surrey GU2 7XH, U.K., (b)Applied Materials UK Ltd, Foundry Lane, Horsham, West Sussex RH13 5PX, U.K., (c)Centro per la Ricerca Scientifica e Tecnologia, ITC-irst, Povo, Trento, Italy
- D-III.03** 15:00 DOSE LOSS AND SEGREGATION OF BORON AND ARSENIC AT THE Si/SiO₂ INTERFACE BY ATOMISTIC KINETIC MONTE CARLO SIMULATIONS
J.E. Rubio, M. Jaraiz, I. Martin-Bragado, P. Castrillo, R. Pinacho and J. Barbolla, Dept. of Electronics, University of Valladolid, 47011 Valladolid, Spain
- D-III.04** 15:15 MECHANISMS OF THERMALLY INDUCED DEWETTING OF ULTRATHIN SILICON-ON-INSULATOR
Peter Sutter, Eli Sutter, Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton NY 11973, USA
- D-III.05** 15:30 MANUFACTURE AND CHARACTERIZATION OF ALSB SOI MOSFET SELF ALIGNED NANO-TRANSISTORS M. Derras, A. Kadoun, V. Bayot, Université Djillali Liabes de Sidi Bel Abbes, BP 49 Larbi Ben M'hidi, 22000 Sidi Bel Abbes, Algeria
- 15:45 **BREAK**

Session IV : Light emitting Si

Session chair: P. Eyben

- D-IV.01** 16:05 -Invited- DISLOCATION ENGINEERING FOR Si BASED LIGHT EMITTING DIODES
R. Gwilliam(a), M. Laurenco(a), M. Milosavljevic(a), K.P. Homewood(a) and G. Shao(b)
(a)Advanced Technology Institute, University of Surrey, Guildford, Surrey GU2 7XH, U.K.,
(b)School of Engineering, University of Surrey, Guildford, Surrey GU2 7XH, U.K.
- D-IV.02** 16:35 MODULATION OF THE 1535 NM PHOTOLUMINESCENCE FROM Er DOPED Si-RICH SILICON DIOXIDE BY FIELD-INDUCED QUENCHING
J.M. Sun, W. Skorupa, T. Dekorsy and M. Helm, Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf, P.O. Box 510119, 01314 Dresden, Germany, L. Rebole and T. Gebel, Nanoparc GmbH, Dresden, Germany
- D-IV.03** 16:50 SILICON-BASED LIGHT EMISSION DEVICES
T. Arguirov, M. Kittler, W. Seifert, X. Yu, IHP/BTU Joint Lab, Universitätsplatz 3-4, 03044 Cottbus, Germany and M. Reiche, MPI für Mikrostrukturphysik Halle, Germany
- D-IV.04** 17:05 ELECTROLUMINESCENCE PROPERTIES of Si MOS STRUCTURES WITH INCORPORATION OF FeSi₂ PRECIPITATES FORMED BY IRON IMPLANTATION
C.F. Chow(a,c), S.P. Wong(a,c), Y. Gao(a,c), N. Ke(a,c), Q. Li(b,c), W.Y. Cheung(a,c), M.A. Lourenco(d), K.P. Homewood(d), (a)Department of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong, China, (b)Department of Physics, The Chinese University of Hong Kong, Hong Kong, China, (c)Materials Science and Technology Research Centre, The Chinese University of Hong Kong, Hong Kong, China, (d)School of Electronics Engineering, Computer and Mathematics, University of Surrey, Guildford, Surrey GU2 7XH, U.K.

17:30-19:00 **POSTER SESSION I**

in parallel

17:30-19:00 **STUDENT AWARD ORAL SESSION**
Session chair: A.N. Larsen

POSTER SESSION I
Tuesday, May 31, 2005
17:20 – 19:00

Session chair: W. Skorupa

- D/PI.01** Leakage Current And Deep Levels In CoSi₂ silicided Junction
D. Codegani, C. De Marco, I. Mica and M.L. Polignano, ST Microelectronics, Via Olivetti 2, 20041 Agrate Brianza (Mi), Italy
- D/PI.02** TRAP ANALYSIS IN ERBIUM-SILICIDED SCHOTTKY JUNCTION FOR THE APPLICATION TO DECANANOMETER N-TYPE SCHOTTKY BARRIER MOSFETS
Moongyu Jang, Yarkyeon Kim, Myungsim Jun, Jaeheon Shin and Seongjae Lee, Nano-electronic Devices Team, Future Technology Research Division, Electronics & Telecommunications Research Institute, Daejeon 305-350, Korea
- D/PI.03** PARAMATERS DEGRADATION OF A POWER VDMOS DEVICE UNDER THERMAL STRESS CONDITIONS
M. Alwan, K. Ketata, LEMI, Rouen University, 76821 Mont Saint Aignan, France
- D/PI.04** FORMATION AND CHARACTERIZATION OF TiSi/SiGeC SCHOTTKY DIODES
K. Ghelamallah, S. Chitroub, BP 111, Village Universitaire de l'USTHB, 16123 Bab Ezzouar, Alger, Algeria
- D/PI.05** SUB 15nm n+/p-GERMANIUM SHALLOW JUNCTION FORMED BY PLASMA DOPING AND EXIMER LASER ANNEALING
Sungho Heo(a), Sungkweon Baek(a), Dongkyu Lee(a), Hyungsuk Jung(a), Geoffroy Raskin(b), Gary Goodman(b) and Hyunsang Hwang(a), (a)Samsung Electronics Co., Giheung-Eup Yongin-City, 449-711, Korea, (b)Umicore Electro-Optic Materials, Watertorenstraat 33, 2250 Olen, Belgium
- D/PI.06** EVALUATION OF BBR2 AND B+BR IMPLANTS IN SILICON
J.A. Sharp, R.M. Gwilliam, B.J. Sealy, C. Jeynes, J.J. Hamilton and K.J. Kirkby, Surrey Ion Beam Centre, Advanced Technology Institute, School of Electronics and Physical Sciences, University of Surrey, Guildford Surrey GU2 7XH, U.K.
- D/PI.07** **D-II.05**
- D/PI.08** EXCIMER LASER ANNEALING OF B AND BF₂ IMPLANTED Si
E.V. Monakhov and B.G. Svensson, Department of Physics/SMN, University of Oslo, PO Box 1048 Blindern, 0316 Oslo, Norway, M.K. Linnarsson, Solid State Electronics, Royal Institute of Technology, Stockholm, Sweden, A. La Magna, M. Italia and V. Privitera, CNR-IMM, Catania, Italy, G. Fortunato, M. Cusunà and L. Mariucci, CNR-IFN, Rome, Italy
- D/PI.09** CHARACTERISTICS OF SILICON P-N JUNCTION FORMED BY ION IMPLANTATION WITH IN-SITU ULTRASOUND TREATMENT
V.P. Melnik, Ya.M. Oliikh, V.G. Popov, B.M. Romanyuk, Yu.V. Goltvyanskii, A.A. Evtukh, Institute of Semiconductor Physics, National Academy of Science of Ukraine, 41 prospect Nauki, 03028 Kiev, Ukraine
- D/PI.10** MODELING AND EXPERIMENTAL VERIFICATION OF THE 300 MM AR ANNEAL PROCESS
T. Müller, R. Wahlich, P. Krottenthaler, and W. v. Ammon, Siltronic AG, Johannes -Hess-Strasse 24, 84489 Burghausen, Germany, J. Studener, A. Kühhorn, Lehrstuhl SMF, BTU Cottbus, 03046 Cottbus, Germany
- D/PI.11** STRAIN RELAXATION AND DEFECT FORMATION IN THE STRAINED-Si/RELAXED Si_{0.78} Ge_{0.22} /Si (001) HETEROSTRUCTURE
C.H. Jang(a), S.I. Paik(b), Y.W. Kim(b), S.-H. Kim(c), Y.-J. Song(c), N.-E. Lee(a), (a)Dept. of Materials Science and Engineering and Center for Advanced Plasma Surface Technology, Sungkyunkwan University, Suwon, Kyunggi-do 440-746, Korea, (b)School of Materials Science and Engineering, Seoul National University, San 56-1, Gwanak-gu, Seoul 151-742, Korea, (c)Semiconductor Research Division, Electronics and Telecommunications Research Institute, Taejeon 305-701, Korea
- D/PI.12** NATURE OF THE INTERFACE OF (100)Ge/INSULATOR STRUCTURES WITH ULTRATHIN HfO₂ and GeO_x(Ny) LAYERS PROBED BY ELECTRON SPIN RESONANCE
A. Stesmans and V.V. Afanas'ev, Department of Physics, University of Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium
- D/PI.13** INVESTIGATION OF SI/SiGe/SI ON SI-ON-INSULATOR BY HIGH RESOLUTION ELECTRON MICROSCOPY AND SYNCHROTRON RADIATION DOUBLE CRYSTAL TOPOGRAPHY
T.D. Ma, H.L. Tu, National Engineering Research Center for Semiconductor Materials, General Research Institute for Nonferrous Metals, No. 2 Xijiekouwai Street, 100088 Beijing, P.R. China, B.L. Shao, A.S. Liu, G.Y. Hu, National Center of Analysis and Testing for Nonferrous Metals and Electronic Materials, General Research Institute for Nonferrous Metals, No. 2 Xijiekouwai Street, 100088 Beijing, P.R. China
- D/PI.14** ELECTRON INTERACTION EFFECTS IN STRAINED P-SiGe/Ge HETEROSTRUCTURES
B. Rössner, B. Batlogg, Laboratory of Solid State Physics, ETH Zurich, 8093 Zurich, Switzerland, H. von Känel, D. Chrastina, G. Isella, INFN and L-NESS, Dipartimento di Fisica del Politecnico di Milano, Polo Regionale di Como, Via Anzani 52, 22100 Como, Italy

- D/PI.15** RAMAN SPECTROSCOPY OF Si_{1-x}Ge_x EPILAYERS
F. Pezzoli, Lucio Martinelli, E. Grilli, M. Guzzi, S. Sanguinetti and M. Bollani, INFN and L-NESS, Dipartimento di Scienza dei Materiali della Università degli Studi di Milano-Bicocca, Via Cozzi 53, 20125 Milano, Italy, H.D. Chrastina, G. Isella and H. von Känel, INFN and L-NESS, Dipartimento di Fisica del Politecnico di Milano, Via Anzani 52, 22100, Como, Italy, E. Wintersberger, J. Stangl and G. Bauer, Institute for Semiconductor Physics, J.-Kepler University Linz, Altenbergerstr. 69, 4040 Linz, Austria
- D/PI.16** SN-BASED GROUP-IV SEMICONDUCTORS ON SI: NEW INFRARED MATERIALS AND NEW TEMPLATES FOR MISMATCHED EPITAXY
John Kouvetakis and Jose Menendez, Arizona State University, Tempe AZ 85287-1504, USA
- D/PI.17** LOW ELECTRICAL RESISTIVITY POLYCRYSTALLINE SIGE FILMS OBTAINED BY VERTICAL LPCVD FOR MOS DEVICES
R.C. Teixeira, I. Doi, M.B.P. Zakia, J.A. Diniz, J.W. Swart, School of Electrical and Computer Engineering (FEEC) and Center for Semiconductor Components (CCS), State University of Campinas (UNICAMP), P.O. Box. 6061, CEP 13083-870, Campinas-SP, Brazil
- D/PI.18** INTRINSIC STRESS IN AMORPHOUS AND NANOCRYSTALLINE Si FILMS PREPARED BY PECVD WITH HYDROGEN DILUTION
Y.Q. Fu, J.K. Luo, S. Milne, A.W. Flewitt, W.I. Milne, Department of Engineering, University of Cambridge, Trumpington Street, Cambridge CB2, 1PZ, U.K.
- D/PI.19** THE FEATURES OF THE FORMATION OF SiGe NANOISLANDS ON SiGe BUFFER
M.Ya. Valakh, V.M. Dzhagan, O.S. Lytvyn, A.M. Yaremko, V.O. Yukhymchuk, Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Prospekt Nauki 41, 03028 Kyiv, Ukraine, Z.F. Krasil'nik, A.V. Novikov, Institute for Physics of Microstructures RAS, 603950 Nizhny Novgorod, GSP-105, Russia
- D/PI.20** STRAIN AND DEFECT ENGINEERING IN Si/Si₃N₄/Si BY HIGH TEMPERATURE – PRESSURE TREATMENT
A. Misiuk, A. Barcz, Institute of Electron Technology, Al. Lotnikow 46, 02-668 Warsaw, Poland; B. Surma, IEMT, 01-919 Warsaw, Poland; I.V. Antonova, ISP RAS, 630090 Novosibirsk, Russia and S. Dub, ISM, 04074 Kiev, Ukraine
- D/PI.21** WAFER BONDING INVOLVING STRAIN-RELAXED SiGe
I. Radu, R. Singh, M. Reiche, U. Gösele and S.H. Christiansen, Max Planck Institute of Microstructure Physics, Weinberg 2, 06120 Halle/Saale, Germany
- D/PI.22** FORMATION OF SILICON-ON-DIAMOND-LIKE-CARBON NOVEL STRUCTURE BY ION CUTTING AND SIMULATION OF SELF-HEATING EFFECTS
Chenglu Lin(a), Ming Zhu(a), Weili Liu(a), Zengfeng Di(a,b), Paul K. Chu(b), (a)Research Center of Functional Semiconductor Film Engineering & Technology, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, 865 Changning Road, 200050 Shanghai, China, (b)Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
- D/PI.23** A NEW PROCESS FOR THINNING OF SOI SUBSTRATES BASED ON HCL ETCHING USING RPCVD REACTOR
J. Hällstedt, and H.H. Radamson, Royal Institute of Technology (KTH), Department of Microelectronics and Information Technology (IMIT), Electrum 229, Kista-Stockholm, 164 40, Sweden
- D/PI.24** PRECISE CHARACTERIZATION OF SILICON ON INSULATOR (SOI), SiGe ON SOI (SGOI), AND STRAINED SILICON ON INSULATOR (SSOI) STACKS WITH UV-VISIBLE – INFRA RED SPECTROSCOPIC ELLIPSOMETRY
Adrien Darragon, Christophe Defranoux, Thierry Emeraud, Jean-Louis Stehle, SOPRA SA, Bois Colombes, France
- D/PI.25** DEFECT ENGINEERING FOR ION BEAM SYNTHESIS OF SILICON-ON-INSULATOR STRUCTURES
R. Kögler, F. Eichhorn, A. Mücklich, H. Reuther, W. Skorupa; Forschungszentrum Rossendorf, FWI, PF 510119, 01314 Dresden, Germany
- D/PI.26** FABRICATION OF SILICON ON INSULATOR WITH BURIED TUNGSTEN SILICIDE LAYER FOR HIGH FREQUENCY INTEGRATED CIRCUITS
Weili Liu(a), Suhua Luo(a,b), Miao Zhang(a), Zhitang Song(a), Chenglu Lin(a), Paul K. Chu(b), Xiaolan Liu(a), (a)Research Center of Functional Semiconductor Film Engineering and Technology, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, 865 Changning Road, 200050 Shanghai, China, (b)Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
- D/PI.27** HIGH-GERMANIUM RELAXED SiGe-ON-INSULATOR FABRICATED BY DRY OXIDATION OF SANDWICHED Si/SiGe/Si STRUCTURE
Zengfeng Di(a,b), Miao Zhang(a), Weili Liu(a), Ming Zhu(a,b), Chenglu Lin(a), and Paul K Chu(b), (a) The Research Center of Semiconductor Functional Film Engineering Technology & State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences (CAS), Shanghai 200050, People's Republic of China, (b)Department of Physics and Material Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China
- D/PI.28** WITHDRAW
- D/PI.29** ELECTRICAL CONDUCTIVITY ACROSS THE BONDED INTERFACE IN UNIPOLAR Si/Si JUNCTIONS AT T=78 AND 300 K
V.A. Stuchinsky and G.N. Kamaev, Institute of Semiconductor Physics, 13 Lavrent'ev Ave., 630090 Novosibirsk, Russia

- D/PI.30** ELECTROREFLECTANCE SPECTROSCOPY STUDY OF ULTRATHIN SiO₂ LAYERS GROWN ON HYDROGENATED SILICON
A. Szekeres(a), R. Holiny(b), S. Alexandrova(a), L. Matveeva(b), (a)Institute of Solid State Physics, 72 Tzarigradsko Chaussee, Sofia 1784, Bulgaria, (b)Institute of Semiconductor Physics, Prospect Nauki 45, Kiev 252028, Ukraine
- D/PI.31** STRUCTURE OF THE SiO₂/Si-INTERFACE IN DEPENDENCE ON THE SURFACE ORIENTATION OF THE Si-SUBSTRATE
S. Dreiner, M. Schuermann, U.Berges, C. Westphal, University of Dortmund, Otto-Hahn-Str. 4, 44221 Dortmund, Germany
- D/PI.32** THE EFFECT OF TEMPERATURE ON CAPACITANCE-VOLTAGE (C-V) CHARACTERISTICS OF SIMOX
Ahalapitiya H. Jayatissa and Zhiyu Li, MIME Department, College of Engineering, The University of Toledo, OH 4600, USA
- D/PI.33** LIGHT EMITTING NANO-POROUS SILICON STRUCTURES FABRICATED USING A PLASMA HYDROGENATION TECHNIQUE
Y. Abdi(b), J. Derakhshandeh(a), S. Mohajerzadeh(a), F. Nayeri(a), E. Arzi(b) and M.D. Robertson(c), (a)Thin Film Lab, University of Tehran, Tehran, Iran, (b)department of physics, University of Tehran, Tehran, Iran, (c)Department of Physics, Acadia University, Nova-Scotia, Canada
- D/PI.34** IMPLANTATION OF B AND P IONS IN Si NANOSTRUCTURES WITH SUBSEQUENT THERMAL AND LASER ANNEALING
G.A. Kachurin(a), S.G. Cherkova(a), V.A. Volodin(a), D.V. Marin(a), A.K. Gutakovsky(a), D.I. Tetelbaum(b), H. Becker(c), (a)Institute of Semiconductor Physics SO RAN, 630090 Novosibirsk, Russia, (b)NIFTI, Nizhegorodsky State University, 603950 N. Novgorod, Russia, (c)Laser Centrum Hannover e.V., 30419 Hannover, Germany
- D/PI.35** THE EFFECT OF ION IMPLANTATION ENERGY AND DOSAGE ON THE MICROSTRUCTURE AND LUMINESCENCE PROPERTIES OF THE ION BEAM SYNTHESISED FeSi₂ IN Si
Y.T. Chong(a,c), C.F. Chow(b,c), N. Ke(b,c), W.Y. Cheung(b,c), S.P. Wong(b,c), K.P. Homewood(d), Q. Li(a,c), (b)Dept. of Physics, The Chinese University of Hong Kong, Hong Kong, China, (c)Dept. of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong, China, (d)Materials Science and Technology Research Centre, The Chinese University of Hong Kong, Hong Kong, China, (d)School of Electronics Engineering, Computer and Mathematics, University of Surrey, Guildford, Surrey GU2 7XH, U.K.
- D/PI.36** ELECTROLUMINESCENCE FROM Si:S LEDs
S.F. Galata, M.A. Lourenço, R.M. Gwilliam and K.P. Homewood, Advanced Technology Institute, School of Electronics and Physical Sciences, University of Surrey, Guildford, Surrey GU2 7XH, U.K.
- D/PI.37** A ROOM-TEMPERATURE OPERATING Si-BASED QUANTUM-DOT LED
M. Jo(a), N. Yasuhara(a), Y. Sugawara (b), and K. Kawamoto(a), and S. Fukatsu(a,c), (a)Graduate School of Arts and Sciences, The University of Tokyo, Komaba, Meguro, Tokyo 153-8902, Japan, (b)JST, Kawaguchi, Saitama 332-0012, Japan, (c)PRESTO, JST, Kawaguchi, Saitama 332-0012, Japan
- D/PI.38** b-FeSi₂-BASED METAL-INSULATOR-SEMICONDUCTOR DEVICES FORMED BY SPUTTERING FOR OPTOELECTRONIC APPLICATIONS
T. Ootsuka(a,b), Z.X Liu(a,b), M. Osamura(a), Y. Fukuzawa(c), N. Otagawa(c), Y. Nakayama(c), H. Tanoue(d), Y. Makita(b,d), (a)System Engineers Co. Ltd., 16-1 Onogawa, Tsukuba 305-8569, Japan, (b)Tateyama Kagaku Industry Co. Ltd., Tsukuba Lab., 16-1 Onogawa, Tsukuba 305-8569, Japan, (c)Kankyo Semiconductors Co. Ltd., 1-1-1 Umezono, Tsukuba 305-8568, Japan, (d)National Institute of Advanced Industrial Science and Technology (AIST), AIST Tsukuba Central 2, 1-1-1 Umezono, Tsukuba 305-8568, Japan
- D/PI.39** III-V LASERS ON Si: NUCLEATION OF DEFECT-FREE, MONOLITHIC AlSb on Si USING SELF-ASSEMBLED QUANTUM DOTS
D. Huffaker, G. Balakrishna, L.R. Dawson, C.P. Hains, Y.C. Xin and D.L. Huffaker
- D/PI.40** THE ELECTRON FIELD EMISSION PROPERTIES OF ION BEAM SYNTHESISED METAL-DIELECTRIC NANOCOMPOSITE LAYERS ON SILICON SUBSTRATES
W.M. Tsang, B. J. Sealy and S.R.P. Silva, Advanced Technology Institute, School of Electronics and Physical Sciences, University of Surrey, GU2 7XH, U.K., S.P. Wong, Department of Electronic Engineering & Materials Science and Technology Research Centre, The Chinese University of Hong Kong, Hong Kong, China
- D/PI.41** THE EFFECT OF PLASMA TREATMENT ON THE PROPERTIES OF GERMANIUM IMPLANTED METAL OXIDE SEMICONDUCTOR STRUCTURES
A.N. Nazarov, Ja.N. Vovk, I.N. Osiyuk, A.S. Tkachenko, I.P. Tyagulskii, V.S. Lysenko, Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Prospekt Nauki 45, 03028 Kyiv, Ukraine, W. Skorupa, R.A. Yankov, Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf e.V., POB 510119, 01314 Dresden, Germany, T. Gebel, L. Reohle, Nanoparc GmbH, Bautzner Landstrasse 45, 01454 Dresden, Germany
- D/PI.42** SILICON MICROCAVITY LIGHT EMITTING DIODES WITH BURIED COBALT SILICIDE METALLIC MIRRORS
J. Potfajova(a), J.M. Sun(a), T. Dekorsy(a), W. Skorupa(a), B. Schmidt(a), M. Wiemer(b) and M. Helm(a), (a)Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf, P.O. Box 510119, 01314 Dresden, Germany, (b)Fraunhofer Institut f. Zuverlässigkeit u. Mikrointegration, 09126 Chemnitz, Germany
- D/PI.43** PHOTOLUMINESCENT Si NANOPARTICLES EMBEDDED IN SILICON OXIDE MATRIX
V. Kapaklis and C. Politis, School of Engineering, Engineering Science Department, University of Patras, 26500 Patras, Greece, P. Pouloupoulos, School of Natural Sciences, Materials Science Department, University of Patras, 26504 Patras, Greece, P. Schweiss, Forschungszentrum Karlsruhe, Institut für Festkörperphysik, P.O. Box 3640, 76021 Karlsruhe, Germany

- D/PI.44** STRUCTURAL AND OPTICAL STUDY OF Ge/Si QUANTUM DOTS ON Si(001) SURFACE COVERED WITH A THIN SILICON OXIDE LAYER
A. Fonseca, E. Alves, Instituto Tecnológico e Nuclear, E.N. 10, 2686-953 Sacavém, Portugal, J.P. Leitão, N.A. Sobolev, M.C. Carmo, Departamento de Física, Universidade de Aveiro, 3810-193 Aveiro, Portugal, A.I. Nikiforov, Institute of Semiconductor Physics, 630090 Novosibirsk, Russia
- D/PI.45** Ge SELF-ASSEMBLED ISLANDS GROWN ON SiGe/Si(001) RELAXED BUFFER LAYERS
Z.F. Krasilnik, D.N. Lobanov, A.V. Novikov, M.V. Shaleev, A.N. Yablonsky, Institute for Physics of Microstructures RAS, 603950 Nizhny Novgorod GSP-105, Russia
- D/PI.46** PHASE TRANSITION AND LUMINESCENCE PROPERTIES FROM VAPOR ETCHED SILICON
S. Aouida, M. Saadoun, K. Ben Saad, B. Bessaïf
- D/PI.47** DISTRIBUTION OF Ge NANO-ISLANDS ON A SUBSTRATE OF Si UNDER ION BOMBARDMENT
F. Djurabekova, S. Tadjimuratov, Kh. Ashurov, Institute of Electronics, Uzbek Academy of Science, F. Khodjaev str. 33, 700125 Tashkent, Uzbekistan
- D/PI.48** LUMINESCENT PROPERTIES OF NANO-CERAMICS SiO₂
V.S. Kortov, A.F. Zatspein, S.V. Gorbunov, Ural State Technical University-UPI, Department of Physics and Technology, Ekaterinburg, Russia
- D/PI.49** THE INTENSITY OF THE PL EMISSION AT 0.767 eV AS A FUNCTION OF THE NATURE AND CONCENTRATION OF THERMAL DOUBLE DONORS IN Si
B.A. Andreev, D.I. Kryzhkov, A.N. Yablonskiy, Institute for Physics of Microstructures RAS, GSP-105, 603950 Nizhny Novgorod, Russia and V.V. Emtsev, A.F. Ioffe Physico-Technical Institute, 194021 St.Petersburg, Russia
- D/PI.50** MODELISATION OF OPTOELECTRONIC DEVICE BASED ON Si/SiO₂ AND EMITTING A RED LIGHT
N.Sfina, S. Abdi-Ben Nasrallah, A.Bouazra and M. Said Unité de Recherche de Physique des Solides, Département de Physique, Faculté des Sciences de Monastir, 5019 Monastir, Tunisia
- D/PI.51** ELECTRIC FIELD EFFECT ON THE SPATIALLY SEPARATED ELECTRON-HEAVY HOLE RECOMBINATION IN Si/SiGe TYPE II QUANTUM WELLS HETEROSTRUCTURES
N. Sfina(a), J.-L. Lazzari(b), S. Abdi-Ben Nasrallah(a) and M. Said(a), (a)Unité de Recherche de Physique des Solides, Département de Physique, Faculté des Sciences de Monastir, 5019 Monastir, Tunisia, (b)Centre de Recherche en Matière Condensée et Nanosciences, CRMC-N, UPR-CNRS 7251 (Laboratoire associé aux Universités Aix-Marseille II et III), Campus de Luminy, Case 913, 13288 Marseille cedex 9, France
- D/PI.52** ELECTRICAL PROPERTIES OF B AND Ga Co-DOPED Si
L. Romano, A.M. Piro, M.G. Grimaldi, MATIS - INFN and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy, G. Bisognin, A. Carnera, MATIS - INFN and Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, Italy

Wednesday, June 1, 2005
Mercredi 1er juin 2005

Afternoon
Après-midi

Session V : SiGe-based materials

Session chair: B. Ghyselen

- D-V.01** 14:00 -Invited- ENGINEERED SUBSTRATES AND THEIR FUTURE ROLE IN MICROELECTRONICS
Eugene A. Fitzgerald, MIT, Dept. of Materials Science and Engineering, Cambridge MA, USA
- D-V.02** 14:30 HIGH GERMANIUM CONTENT SIGE VIRTUAL SUBSTRATES GROWN AT HIGH TEMPERATURES
Y. Bogumilowicz(a), J.M. Hartmann(b), F. Laugier(b), G. Rolland(b), T. Billon(b), N. Cherkashin(c) and A. Claverie(c), (a)STMicroelectronics, 850 rue Jean Monnet, 38921 Crolles Cedex, France, (b)CEA-DRT, LETI / D2NT & DPTS, CEA – GRE, 17 avenue des Martyrs, 38054 Grenoble Cedex, France, (c)nMAT Group, CEMES/CNRS, BP 4347, 31055 Toulouse Cedex, France
- D-V.03** 14:45 INVESTIGATION OF HYDROGEN IMPLANTATION INDUCED BLISTERING IN SiGe
R. Singh, I. Radu, M. Reiche, R. Scholz, U. Gösele, and S. H. Christiansen, Max Planck Institute of Microstructure Physics, Weinberg 2, 06120, Halle/Saale, Germany, D. Webb, International Rectifier Epi Services Inc., 550 W. Juanita Ave, Mesa AZ 85210, USA
- D-V.04** 15:00 STRAIN CHARACTERIZATION IN STRAINED-Si MOSFET CHANNELS BY NBD METHOD
K. Usuda, T. Numata, T. Irisawa, N. Hirashita and S. Takagi(a,b), MIRAI-ASET, (a)MIRAI-ASRC/AIST, (b)The University of Tokyo, 1 Komukai Toshiba-cho, Saiwai-ku, Kawasaki 212-8582, Japan
- D-V.05** 15:15 IMPROVED HOLE MOBILITIES AND THERMAL STABILITY IN A STRAINED-Si/STRAINED-Si_{1-y}Ge_y/STRAINED-Si HETEROSTRUCTURE GROWN ON A RELAXED Si_{1-x}Ge_x BUFFER
Saurabh Gupta, Minjoo L. Lee, David M. Isaacson and Eugene A. Fitzgerald, Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge MA 02139, USA
- D-V.06** 15:30 MOBILITY-LIMITING MECHANISMS IN SINGLE AND DUAL CHANNEL STRAINED Si/SiGe MOSFET'S
S.H. Olsen(a), P. Dobrosz(b), E. Escobedo-Cousin(a), S.J. Bull(b) and A.G. O'Neill(a), (a) School of Electrical, Electronic and Computer Engineering, University of Newcastle, U.K., (b) School of Chemical Engineering and Advanced Materials, University of Newcastle, U.K.

15:45 **BREAK**

Session VI : TCAD

Session chair: W. Windl

- D-VI.01** 16:05 -Invited- TRENDS, DEMANDS and CHALLENGES IN TCAD
Ingo Bork, Victor Moroz and Dipu Pramanik, Synopsys, USA
- D-VI.02** 16:35 AMORPHOUS LAYER DEPTH AND RESIDUAL DAMAGE DEPENDENCE ON IMPLANT PARAMETERS DURING Si SELF-IMPLANTATION
Pedro Lopez, Lourdes Pelaz, Luis A. Marques, Juan Barbolla, Dpto. de Electricidad y Electrónica, Universidad de Valladolid, E.T.S.I. Telecomunicación, Campus Miguel Delibes s/n, 47011 Valladolid, Spain, H.-J.L. Gossman, Aditya Agarwal, Axcelis Technologies, 108 Cherry Hill Drive, Beverly MA 01915, USA, Kenji Kimura, Tomoyoshi Matsushita, Department of Engineering Physics and Mechanics, Kyoto University, Kyoto 606-8501, Japan
- D-VI.03** 16:50 OPTIMISED MODEL OF THE EXTENDED DEFECTS APPLIED TO NON-AMORPHISING IMPLANTS
E. Lampin, IEMN-UMR CNRS 8520, Av. Poincaré, 59652 Villeneuve d'Ascq Cedex, France, F. Cristiano, Y. Lamrani, D. Connetable, LAAS/CNRS, 7 Av. du Col. Roche, 31077 Toulouse, France
- D-VI.04** 17:05 PHYSICALLY-BASED MODELLING OF DISLOCATION LOOPS IN ION IMPLANTATION PROCESSING IN SILICON
P. Castrillo, I. Martin-Bragado, R. Pinacho, M. Jaraiz, J. E. Rubio, K.R.C. Mok, and J. Barbolla, Department of Electronics, University of Valladolid, 47011 Valladolid, Spain
- D-VI.05** 17:20 ACCURATE AND EFFICIENT TCAD MODEL FOR THE FORMATION AND EVAPORATION OF SMALL INTERSTITIAL CLUSTERS AND {311} DEFECTS IN SILICON
Christoph Zechner, Nikolas Zographos, Dmitri Matveev, Axel Erlebach, Synopsys Schweiz AG, Affolternstr. 52, 8050 Zurich, Switzerland

- D-VI.06** 17:35 A COMPREHENSIVE SOLUTION FOR SIMULATING ULTRA-SHALLOW JUNCTIONS: FROM HIGH DOSE/LOW ENERGY IMPLANT TO DIFFUSION ANNEALING
F. Boucard, F. Roger, I. Chakarov, V. Zhuk, M. Temkin, X. Montagner, E. Guichard, Silvaco Data Systems, 55 rue Blaise Pascal, 38330 Montbonnot, France and D. Mathiot, CNRS Phase, 23 rue du Loess, 67037 Strasbourg, France
- D-VI.07** 17:50 BORON ACTIVATION AND REDISTRIBUTION DURING THERMAL TREATMENTS AFTER SOLID PHASE EPITAXIAL REGROWTH
Maria Aboy, University of Valladolid, Lourdes Pelaz, University of Valladolid, Juan Barbolla, University of Valladolid, R. Duffy, Philips Research Leuven, V.C. Venezia, Axcelis Technologies
- D-VI.08** 18:05 IMPACT OF LARGE ANGLE TILT IMPLANTATION ON THE THRESHOLD VOLTAGES OF LDMOS TRANSISTOR ON SOI
H. Xu, E. Lampin, E. Dubois, IEMN, Av. Poincare, 59652 Villeneuve d'Ascq, 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 : Dopant characterization
Session chair: D. De Salvador

- D-VII.01** 9:00 -Invited- SCANNING SPREADING RESISTANCE MICROSCOPY (SSRM) 2D CARRIER PROFILING FOR ULTRASHALLOW JUNCTION CHARACTERIZATION IN DEEP-SUBMICRON TECHNOLOGIES
Pierre Eyben(a), Tom Janssens(a) and Wilfried Vandervorst(a,b), (a)IMEC vzw, Kapeldreef 75, 3001 Leuven, Belgium, (b)K.U. Leuven, Electrical Engineering Dept., INSYS, Kasteelpark Arenberg 10, 3001 Leuven, Belgium
- D-VII.02** 9:30 -Invited- SCM 2D CARRIER PROFILING FOR ULTRASHALLOW JUNCTION CHARACTERISATION IN DEEP-SUBMICRON TECHNOLOGIES
F. Giannazzo, V. Raineri, CNR-IMM, sezione di Catania, Stradale Primosole 50, 95121 Catania, Italy, E. Bruno, S. Mirabella, G. Impellizzeri, F. Priolo, MATIS-INFM and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy, M. Fedele, R. Mucciato, 2M Strumenti, Via G. Pontano 9, 00141 Roma, Italy, E. Napolitani, MATIS-INFM and Dipartimento di Fisica dell'Università di Padova, Via Marzolo 8, 35131 Padova, Italy
- D-VII.03** 10:00 TWO-DIMENSIONAL GEOMETRICAL EFFECTS OF CONFINED B CLUSTERS IN DEEP SUBMICRON STRUCTURES
E. Bruno, S. Mirabella, G. Impellizzeri, F. Priolo, MATIS-INFM and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy, F. Giannazzo, V. Raineri, CNR-IMM, Sezione di Catania, Stradale Primosole 50, 95121 Catania, Italy, E. Napolitani, MATIS-INFM and Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, Italy
- D-VII.04** 10:15 NON DESTRUCTIVE CHARACTERIZATION OF USJ FOR NODE 45 nm USING INFRA RED SPECTROSCOPIC ELLIPSOMETRY (IRSE)
J.L. Stehle, Adrien Darragon, Christophe Defranoux, Sopra-SA, 26 rue Pierre Joigneaux, 92270 Bois Colombes, France
- D-VII.05** 10:30 APPLICATION OF THE TOMOGRAPHIC ATOM PROBE TO THE INVESTIGATION OF NANOSCALED MATERIAL DEVICES BY MEANS OF FEMTOSECOND LASER PULSES
P. Pareige(a), H. Bernas(b), F. Vurpillot(a), B. Gault(a), M. Gilbert(a), E. Cadel(a) and B. Deconihout(a), (a)GPM UMR CNRS 6634, Université et INSA de Rouen, 76801 Saint-Etienne du Rouvray Cedex, France, (b)Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse (UMR 8609), CNRS-IN2P3, Université d'Orsay, France
- 10:45 **BREAK**

Session VIII : Point defects

Session chair: **I. Bork**

- D-VIII.01** 11:05 -Invited- ATOMISTIC SIMULATIONS IN Si PROCESSING: BRIDGING THE GAP BETWEEN ATOMS AND EXPERIMENTS
Luis A. Marqués, Departamento de Electrónica, E.T.S.I. de Telecomunicación, Universidad de Valladolid, 47011 Valladolid, Spain
- D-VIII.02** 11:35 AB-INITIO CALCULATIONS OF THE INTERACTION BETWEEN NATIVE POINT DEFECTS IN SILICON
G. Hobler(a), G. Kresse(b), (a)Inst. f. Festkörperelektronik, Vienna University of Technology, Vienna, Austria, (b)Inst. f. Materialphysik, University of Vienna, Vienna, Austria
- D-VIII.03** 11:50 DETECTION OF POINT DEFECTS VACANCIES, SELF-INTERSTITIALS AND THEIR COMPLEXES IN SILICON BY ELECTRON ENERGY LOSS SPECTROSCOPY
Gerd Duscher*, Nathan Stoddard, and Wolfgang Windl*, Materials Science and Engineering Department, North Carolina State University, Raleigh NC 27695-7916, USA, * and Condensed Matter Science Division, Oak Ridge National Laboratory, Oak Ridge TN 37831, USA, ** Department of Materials Science and Engineering, The Ohio State University, Columbus OH 43210-1178, USA
- D-VIII.04** 12:05 ION IMPLANTATION AND ELECTRON IRRADIATION DAMAGE IN UNSTRAINED GERMANIUM AND SILICON-GERMANIUM ALLOYS
A.R. Peaker, V.P. Markevich, University of Manchester, Manchester M60 1QD, U.K., L.I. Murin, Institute of Solid State and Semiconductor Physics, Minsk 220072, Belarus, N.V. Abrosimov, Institute of Crystal Growth, Berlin 12489, Germany, V.V. Litvinov, Belarussian State University, Minsk 220050, Belarus
- D-VIII.05** 12:20 DIFFUSION SPECTROSCOPY WITH ISOTOPICALLY CONTROLLED SEMICONDUCTORS
H. Bracht Institute of Materials Physics, University of Muenster, 48149 Muenster, Germany, H.H. Silvestri, I.D. Sharp, E.E. Haller, Department of Materials Science and Engineering, University of California Berkeley, and Lawrence Berkeley National Laboratory, Berkeley CA, 94720, USA
- 12:35 **LUNCH**

Thursday, June 2, 2005
Jeudi 2 juin 2005

Afternoon
Après-midi

Session IX : Dopant diffusion/activation

Session chair: W. Lerch

- D-IX.01** 14:05 -Invited- BORON DIFFUSION IN STRAINED AND STRAIN-RELAXED SiGe
C.C. Wang, T.Y. Huang, Y.M. Sheu, Sally Liu, Device Engineering Division, TSMC, Carlos H. Diaz, Logic Technology Division, TSMC, Ray Duffy, Anco Heringa, Philips Research Leuven, Belgium, N.E.B. Cowern, University of Surrey, Guildford, U.K., Peter B. Griffin, CIS, Stanford University, USA
- D-IX.02** 14:35 THE EFFECT OF BIAXIAL STRAIN ON IMPURITY DIFFUSION IN Si AND SiGe
A. Nylandsted Larsen(a), N. Zangenberg(a,b), and J. Fage-Pedersen(a,c), (a)Institute of Physics and Astronomy, University of Aarhus, 8000 Aarhus C, Denmark, (b)Molecular Beam Epitaxy Laboratory, University of British Columbia, (c)Research Center COM, Techn Univ of Denmark
- D-IX.03** 14:50 STRAIN EFFECTS ON TRANSIENT ENHANCED DIFFUSION IN AS-IMPLANTED ULTRASHALLOW JUNCTIONS
G.D.M. Dilliway(a), A.J. Smith(a), J.J. Hamilton(a), L. Xu(b), P.J. McNally(b), G. Cooke(c), H. Kheyrandish(c), N.E.B. Cowern(a), (a)Advanced Technology Institute, University of Surrey, Guildford Surrey GU2 7XH, U.K., (b)School of Electronic Engineering, Dublin City University, Dublin 9, Ireland, (c)MATS-UK, Innovation House, Birchwood, Warrington WA3 6UT, U.K.
- D-IX.04** 15:05 BORON DIFFUSION IN AMORPHOUS SILICON
V.C. Venezia, Axcelis Technologies, Beverly MA 01915, USA, R. Duffy, Philips Research, 3001 Leuven, Belgium, L. Pelaz, University of Valladolid, 47011 Valladolid, Spain, M.J.P. Hopstaken, G.C.J. Maas, T. Dao, Y. Tamminga, and P. Graat, Philips Research, 5656 AA Eindhoven, The Netherlands
- D-IX.05** 15:20 BORON DIFFUSION IN PRESENCE OF DEFECTS INDUCED BY HELIUM IMPLANTATION
F. Cayrel(a), D. Alquier(a), C. Dubois(b) and R. Jérésian(a), (a)Université de Tours, L.M.P., 16 rue Pierre et Marie Curie, BP 7155, 37071 Tours cedex 2, France, (b)L.P.M. - INSA Lyon, 20 rue A. Einstein, 69621 Villeurbanne Cedex, France
- D-IX.06** 15:35 BORON DISTRIBUTION IN SILICON AFTER EXCIMER LASER ANNEALING WITH MULTIPLE PULSES
E.V. Monakhov and B.G. Svensson, Department of Physics/SMN, University of Oslo, PO Box 1048 Blindern, 0316 Oslo, Norway, M.K. Linnarsson, Solid State Electronics, Royal Institute of Technology, Stockholm, Sweden, A. La Magna, M. Italia and V. Privitera, CNR-IMM, Catania, Italy, G. Fortunato, M. Cuscunà and L. Mariucci, CNR-IFN, Rome, Italy
- 15:50 **BREAK**

Session X : Defect/strain characterisation

Session chair: **M. Foad**

- D-X.01** 16:10 CHARACTERISATION OF 311 DEFECTS IN PRE-AMORPHISED SILICON BY GRAZING INCIDENCE DIFFUSE X-RAY SCATTERING
L. Capello(a), T.H. Metzger(a), K. Nordlund(b), F. Cristiano(c), W. Lerch(d), P. Calvo(e), S. Paul(d), (a)E.S.R.F., BP 220, 38043 Grenoble, France, (b)University of Helsinki, P.O. Box 43, 00014 Helsinki, Finland, (c)LAAS/CNRS, 7, Avenue du Colonel Roche, 31077 Toulouse, France, (d)Mattson Thermal Products GmbH, Daimlerstr. 10, 89160 Dornstadt, Germany, (e)CEMES/CNRS, 29 Rue Jeanne Marvig, 31055 Toulouse, France
- D-X.02** 16:25 DISLOCATION-IMPURITY INTERACTION IN Si
I. Yonenaga, Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan
- D-X.03** 16:40 QUANTITATIVE STRAIN AND STRESS MEASUREMENTS IN ALTERNATING Ge/Si THIN LAYERS GROWN BY CVD ON A RELAXED Si_{0.5}Ge_{0.5} BUFFER LAYER
N. Cherkashin, M.J. Hÿtch, E. Snoeck, A. Claverie, CEMES-CNRS, 29 rue J. Marvig, 31055 Toulouse, France, J.M. Hartmann, CEA-DRT, LETI/D2NT & DPTS, CEA – GRE, 17 avenue des Martyrs, 38054 Grenoble Cedex, France, Y. Bogumilowicz, STMicroelectronics, 850 rue Jean Monnet, 38921 Crolles Cedex, France
- D-X.04** 16:55 XRD ANALYSIS OF STRAINED Ge-SiGe HETEROSTRUCTURES ON RELAXED SiGe GRADED BUFFERS GROWN BY HYBRID EPITAXY ON Si(001) OFF-CUT SUBSTRATES
N. Franco, N.P. Barradas, E. Alves, Instituto Tecnológico e Nuclear, E.N. 10, 2685-953 Sacavém, Portugal, R.J.H. Morris, T.J. Grasby, O.A. Mironov, E.H.C. Parker, Department of Physics, University of Warwick, Coventry CV4 7AL, U.K.
- 17:10-19:00 **POSTER SESSION II**

POSTER SESSION II
Thursday, June 2, 2005
17:10 – 19:00

Session chair: F. Giannazzo

- D/PII.01** INJECTION OF POINT DEFECTS DURING ANNEALING OF LOW ENERGY AS IMPLANTED SILICON
C. Tsamis(a), D. Skarlatos(a), V. Valamontes(b), D. Tsoukalas(C), G. BenAssayag(c), A. Claverie(c) and W. Lerch(e), (a)IMEL/NCSR "Demokritos", 15310 Aghia Paraskevi, Athens Greece, (b)Department of Electronics, Technological and Educational Institute of Athens 122-10 Aegaleo, Greece, (c)Faculty of Applied Mathematical and Physical Sciences, NTUA, 157 80 Athens, Greece, (d)Toulouse Ion Implantation Group, CEMES/CNRS, 29 rue J.Marvig, 31055 Toulouse, France, (e)Mattson Thermal Products GmbH, Daimlerstr. 10, D-89160 Dornstadt, Germany
- D/PII.02** INTERSTITIAL INJECTION DURING OXIDATION OF VERY LOW ENERGY NITROGEN - IMPLANTED SILICON
D. Skarlatos and C. Tsamis, IMEL, NCSR "Demokritos", 15310 Aghia Paraskevi, Athens, Greece, M.Perego and M.Fanciulli, INFN – Laboratorio MDM, Via Olivetti 2, 20041 Agrate Brianza (Milano), Italy
- D/PII.03** ARSENIC DIFFUSION IN GERMANIUM
S. Brotzmann and H. Bracht, Institute of Materials Physics, University of Muenster, 48149 Muenster, Germany
- D/PII.04** PHOSPHORUS DIFFUSION INTO SILICON AFTER VAPOR PHASE SURFACE ADSORPTION OF PHOSPHINE
Bodo Kalkofen, Marco Lisker, Edmund P. Burte, Institute of Micro and Sensor Systems, Otto-von-Guericke-University of Magdeburg, 39016 Magdeburg, Germany
- D/PII.05** **D-IX.05**
- D/PII.06** BORON INTERACTION WITH EXTENDED DEFECTS INDUCED BY He-H Co-IMPLANTATION IN Si
G. Gaudin(a), F. Cayrel(a), C. Bongiorno(b), R. Jérísian(a), C. Dubois(c), V. Raineri(b) and D. Alquier(a), (a)Université de Tours, L.M.P., 16 rue Pierre et Marie Curie, BP 7155, 37071 Tours cedex 2, France, (b)CNR-IMM, Stradale primosole, 50, 95121 Catania, Italy, (c)L.P.M. - INSA Lyon, 20 rue A. Einstein, 69621 Villeurbanne Cedex, France
- D/PII.07** SUBSTRATE INFLUENCE ON THE OUTDIFFUSION OF ANTIMONY DOPANT IN MONOCRYSTALLINE SILICON
R. Labbani and R. Halimi, Laboratory of Thin Films and Interfaces, Department of Physics, Faculty of Sciences, University Mentouri of Constantine, Route de Ain el Bey, 25000 Constantine, Algeria
- D/PII.08** POROUS SILICON DAMAGE ENHANCED PHOSPHOROUS AND ALUMINIUM GETTERING OF p TYPE CZOCHRALSKI SILICON
M. Hassen, A. Ben Jaballah*, M. Hajji, H. Rahmouni, B. Bessais, A. Selmi, H. Ezzaouia, Institut National de Recherche Scientifique et Technique, Laboratoire de Photovoltaïque et des Semiconducteurs, PB 95 2050 Hammam-Lif, Tunisia, b Laboratoire de Physique des Semiconducteurs et des Composants Electroniques Faculté des Sciences de Monastir, Rue de Kairouan 5000 Monastir, Tunisia
- D/PII.09** PLATINUM IN-DIFFUSION CONTROLLED BY RADIATION DEFECTS FOR ADVANCED LIFETIME CONTROL IN HIGH POWER SILICON DEVICES
P. Hazdra and J. Vobecký, Department of Microelectronics, Czech Technical University in Prague, Technická 2, 16627 Prague 6, Czech Republic
- D/PII.10** ULTRA SHALLOW N+P JUNCTIONS FORMED BY Sb IMPLANTATION INTO BULK SILICON AND SOI SUBSTRATES
D. Girginoudi, Department of Electrical and Computer Engineering, Democritus University of Thrace, 67100 Xanthi, Greece
- D/PII.11** STRUCTURAL AND ELECTRICAL CHARACTERIZATION OF DEFECTS INTO P+N JUNCTIONS FORMED BY Ge-PREAMORPHISED SILICON WITH LOW AND HIGH THERMAL BUDGET
D. Girginoudi, S. Matziris, N. Georgoulas and A. Thanailakis, Department of Electrical and Computer Engineering, Democritus University of Thrace, 67100 Xanthi, Greece
- D/PII.12** POSITRON ANNIHILATION STUDIES OF HIGH DOSE Sb IMPLANTED SILICON
H. Schut, S.W.H. Eijt, Department of Radiation, Radio-nuclides & Reactors, Faculty of Applied Sciences, Delft University of Technology, Mekelweg 15, 2629 JB Delft, The Netherlands, C.D. Beling, K. Ho, Department of Physics, University of Hong Kong, Pokfulam Road, Hong Kong, P.R. China and Y. Takamura, University of California, Berkeley CA 94720, USA
- D/PII.13** ROOM-TEMPERATURE BORON DISPLACEMENT IN CRYSTALLINE SILICON INDUCED BY PROTON IRRADIATION
Alberto Maria Piro, Lucia Romano, Salvatore Mirabella, Maria Grazia Grimaldi, MATIS-INFN and Dipartimento di Fisica e Astronomia, Università di Catania, 64 via S. Sofia, 95123 Catania, Italy
- D/PII.14** ATOMIC AND ELECTRONIC STRUCTURE OF VACANCY-PHOSPHORUS COMPLEXES IN STRAINED SiGe LAYERS
K. Saarinen(a,b), S.W.H. Eijt(a), J. Slotte(b) and H. Schut(a), (a)Department of Radiation, Radioisotopes & Reactors, Faculty of Applied Sciences, Delft University of Technology, Mekelweg 15, 2629JB, Delft, The Netherlands, (b)Laboratory of Physics, Helsinki University of Technology, P.O. Box 1100, 02015 HUT, Finland

- D/PII.15** LOW TEMPERATURE SOLID-PHASE EPITAXIAL REGROWTH OF AMORPHISED SILICON: A COMPARISON BETWEEN X-RAY MEASUREMENTS AND MEDIUM ENERGY ION SCATTERING
L. Capello, T.H. Metzger, E.S.R.F., BP 220, Grenoble, 38043, France, M. Werner, J.A. van den Berg, Joule Physics Lab., IMR, University of Salford, Salford M5 4WT, U.K., T. Feudel, M. Herden, AMD Saxony LLC & Co. KG, Wilschdorfer Landstrasse 101, 01109 Dresden, Germany
- D/PII.16** **D-XII.02**
- D/PII.17** CHARACTERIZATION OF ION-INDUCED AMORPHIZATION OF GAAS AND INAS USING PAC SPECTROSCOPY
R. Dogra(a,b), A.P. Byrne(b,c) and M.C. Ridgway(a), (a)Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering, Australian National University, ACT, Australia, (b)Department of Nuclear Physics, RSPHysSE, Australian National University, ACT, Australia, (c)Department of Physics, Faculty of Science, Australian National University, ACT, Australia
- D/PII.18** POINT DEFECTS INTERACTION WITH EXTENDED DEFECTS AND IMPURITIES IN THE SI-SI-SIO₂ SYSTEM DURING THE PROCESS OF ITS FORMATION
D. Kropman, Maritime Academy, Tallinn, Estonia, U. Abru, Tondi Electronics, Tallinn, Estonia, T. Kärner, Institute of Physics, Tartu University, Tartu, Estonia, Ü. Ugaste, Pedagogical University, Tallinn, Estonia, E. Mellikov, M. Kauk, Technical University, Tallinn, Estonia, I. Heinmaa, A. Samoson, Institute of Chemical Physics and Biophysics, Tallinn, Estonia
- D/PII.19** STRUCTURAL CHARACTERISATION OF SELF-IMPLANTED Si AFTER HT-HP TREATMENT
W. Rzodkiewicz, A. Kudla and A. Misiuk, Institute of Electron Technology, Al. Lotników 46, 02-668 Warsaw, Poland
- D/PII.20** DIFFERENTIAL HALL PROFILING OF ULTRA-SHALLOW JUNCTIONS IN SI AND SOI
N.S. Bennett, A.J. Smith, B. Colombeau, R. Gwilliam, N.E.B. Cowern and B.J. Sealy, Advanced Technology Institute, University of Surrey, Guildford, Surrey GU2 7XH, U.K.
- D/PII.21** HIGH DEPTH RESOLUTION PROFILING OF THE DAMAGE ANNEALING AND DOPANT REDISTRIBUTION OF ULTRA SHALLOW As IMPLANTS IN PRE-AMORPHISED Si AND SOI
M. Werner, J.A. van den Berg, M.A. Reading and D.G. Armour, Joule Physics Laboratory, Institute of Materials Research, University of Salford, Salford M5 4WT, U.K., T. Feudel and M. Herden, AMD Saxony LLC & Co. KG, Wilschdorfer Landstrasse 101, 01109 Dresden, Germany, M. Bersani and D. Giubertoni, ITC IRST, 38050 Povo - Trento, Italy, P. Bailey and T.C.Q. Noakes, CCLRC Daresbury Laboratory, Daresbury WA4 4A, U.K.
- D/PII.22** DOSE CHARACTERIZATION OF LOW ENERGY ARSENIC IMPLANTS USING NAA, SIMS AND TXRF
Amiya R. Ghatak-Roy, Technos Interntional, Tempe AZ 85283, USA, Latha Vasudevan, Texas A&M University, College Station TX 77843-3575, USA, Majeed A. Foad, Applied Materials Inc., Sunnyvale CA 94086, USA
- D/PII.23** EVALUATION OF SCANNING SCHOTTKY CAPACITANCE MICROSCOPY FOR THE CHARACTERISATION OF DOPING PROFILES
D. Goghero, B. Gautier, A. Descamps, G. Bremond, Laboratoire de Physique de la Matière (UMR-CNRS 5511), 7 Avenue Capelle, 69621 Villeurbanne Cedex, France
- D/PII.24** QUALITATIVE CHARACTERIZATION OF SONOS TRANSISTOR UTILIZING SCANNING CAPACITANCE MICROSCOPE(SCM) AND SCANNING SPREAD RESISTANCE MICROSCOPE(SSRM)
Jinhee Heo(a), Deoksu Kim(a), Chungwoo Kim(b), Ilsub Chung(a), (a)SungKyunKwan University, Chunchun-Dong, Jangan-Ku, Suwon, Korea, (b)Samsung Advanced Institute of Technology, MD Laboratory, P.O. Box 111, Suwon, Korea
- D/PII.25** ALL ELECTRICAL RESISTIVITY PROFILING TECHNIQUE FOR ION IMPLANTED SEMICONDUCTOR MATERIALS
Santolo Daliento, Luigi Mele, Paolo Spirito, University of Naples "Federico II", Department of Electronic Engineering & TLC, Via Claudio 21, 80125 Napoli, Italy
- D/PII.26** CARRIER RECOMBINATION VELOCITIES AT THE SiO₂/Si INTERFACE INVESTIGATED BY A PHOTOTHERMAL MICROSCOPY
T. Ikari, A. Fukuyama, University of Miyazaki, T. Murata, M. Suemitsu, Tohoku University, Sendai, Japan and N. Haddad, V. Reita, J.P. Roger, D. Fournier, ESPCI, Paris, France
- D/PII.27** PHOTOELECTRICAL INVESTIGATION OF MOS STRUCTURES WITH OPTICALLY THICK AL AND POLY-SI GATES
A. Kudla, K. Piskorski, H.M. Przewlocki, Institute of Electron Technology, Al. Lotnikow 32/44, 02-668 Warsaw, Poland
- D/PII.28** MOLECULAR DYNAMICS CHARACTERIZATION OF AS-IMPLANTED DAMAGE IN SILICON
Iván Santos, Luis A. Marqués, Lourdes Pelaz, Pedro López, María Aboy and Juan Barbolla, Dpto. de Electricidad y Electrónica, Universidad de Valladolid, E.T.S.I. Telecomunicaciones, Campus Miguel Delibes s/n, 47011, Spain
- D/PII.29** AB-INITIO STUDY OF THE EFFECT OF HYDROGEN AND POINT DEFECTS ON ARSENIC SEGREGATION AT Si(100)/SiO₂ INTERFACES
Karthik Ravichandran and Wolfgang Windl, Department of Materials Science and Engineering, The Ohio State University, Columbus OH 43210-1178, USA
- D/PII.30** COMPREHENSIVE MODELING OF ION-IMPLANT AMORPHIZATION IN SILICON
K.R.C. Mok(a,b), M. Jaraiz(a), I. Martin-Bragado(a), J.E. Rubio(a), P. Castrillo(a), R. Pinacho(a), J. Barbolla(a), M.P. Srinivasan(a,b), (a)Dept. of Electronics, University of Valladolid. Campus Miguel Delibes. Camino del Cementerio S/N. 47011 Valladolid, Spain, (b)Dept. of Chemical and Biomolecular Engineering. National University of Singapore. 4 Engineering Drive 4, 117576 Singapore

- D/PII.31** ION-IMPLANT SIMULATIONS: THE EFFECT OF DEFECT SPATIAL CORRELATION ON DAMAGE ACCUMULATION
K.R.C. Mok(a,b), M. Jaraiz(a), I. Martin-Bragado(a), J.E. Rubio(a), P. Castrillo(a), R. Pinacho(a), J. Barbolla(a), M.P. Srinivasan(a,b), (a)Dept. of Electronics, University of Valladolid, Campus Miguel Delibes, Camino del Cementerio S/N, 47011 Valladolid, Spain, (b)Dept. of Chemical and Biomolecular Engineering, National University of Singapore, 4 Engineering Drive 4, 117576 Singapore
- D/PII.32** FORMATION OF HIGHLY MOBILE DI-INTERSTITIALS DURING ION IMPLANTATION
M. Posselt, Forschungszentrum Rossendorf, Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, 01314 Dresden, Germany
- D/PII.33** ATOMISTIC STUDY OF INTRINSIC DEFECTS IN GERMANIUM
H. Gessner, M. Posselt, Forschungszentrum Rossendorf, Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, 01314 Dresden, Germany
- D/PII.34** BIMODAL DISTRIBUTION OF DAMAGE MORPHOLOGY GENERATED BY ION IMPLANTATION
I. Martin-Bragado(a), K.R.C. Mok(a,b), M. Jaraiz(a), E. Rubio(a), P. Castrillo(a), R. Pinacho (a), J. Barbolla(a), (a)Dept. of Electronics, University of Valladolid, Campus Miguel Delibes, Camino del Cementerio S/N, 47011 Valladolid, Spain, (b)Department of Chemical Engineering, National University of Singapore, 4 Engineering Drive 4, 117576 Singapore
- D/PII.35** TECHNOLOGY CAD OF SILICIDED CONTACT FOR ELEVATED SOURCE DRAIN ENGINEERING
A.R. Saha and C.K. Maiti, Department of Electronics & ECE, Indian Institute of Technology, Kharagpur 721302, India
- D/PII.36** AN INVESTIGATION ON THE MODELING OF BED AND TED OF ULTRALOW ENERGY IMPLANTED BORON IN SILICON
J. Marcon, L. Ihaddadene-Lecoq, K. Masmoudi and K. Ketata, Laboratory of Electronic Microtechnology and Instrumentation (LEMI), University of Rouen, 76821 Mont Saint Aignan, France
- D/PII.37** ANALYTIC MODEL FOR ION CHANNELING IN SUCCESSIVE IMPLANTATIONS IN CRYSTALLINE SILICON
S. Strauss, C. Zechner, A. Terterian, R. Gautschi, A. Erlebach and A. Scholze
- D/PII.38** LOCAL VIBRATIONS ON HYDROGEN DIMERS IN DILUTE SIGE CRYSTALLINE SOLUTIONS
J. Coutinho and V.J.B. Torres, Department of Physics, University of Aveiro, Campus Santiago, 3810-193 Aveiro, Portugal, R.N. Pereira, Institut for Fysik og Astronomi, Århus Universitet, 8000 Århus, Denmark, S. Öberg, Department of Mathematics, Luleå University of Technology, Luleå 97187, Sweden and P.R. Briddon, School of Natural Sciences, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU, U.K.
- D/PII.39** AB-INITIO STUDY OF THE INTERFACE BETWEEN Si(100) AND CRYSTALLINE LANTHANUM ALUMINIUM OXIDE
Dipanjan Sen and Wolfgang Windl, Dept. of Materials Science and Engineering, The Ohio State University, Columbus OH, USA
- D/PII.40** TIGHT-BINDING MOLECULAR DYNAMICS SIMULATION OF BORON DIFFUSION IN SILICON
V. Cuny and E. Lampin, IEMN, Avenue Poincaré, 59654 Villeneuve d'Ascq Cedex, France
- D/PII.41** DYNAMICS AND ENERGETICS OF SI(100) SURFACE RECONSTRUCTION
C.S. Guo, R.Q. Zhang, Center of Super-Diamond and Advanced Films & Department of Physics and Materials Science, City University Hong Kong, Hong Kong SAR
- D/PII.42** SIMULATIONS OF ARSENIC AND BORON CO-IMPLANTED IN SILICON DURING R.T.A. FOR ULTRA-SHALLOW JUNCTIONS REALIZATION
A. Merabet, Laboratoire Physique et Mécanique des Matériaux Métalliques, O.M.P., Faculté des Sciences de l'Ingénieur, Université de Sétif, Sétif 19000, Algérie
- D/PII.43** CONTROL OF SI NANOCRYSTALS FABRICATED BY ULTRA-LOW ENERGY ION IMPLANTATION FOR NON VOLATILE MEMORIES
H. Coffin, C. Bonafos, S. Schamm, N. Cherkashin, M. Carrada, G. Ben Assayag, A. Claverie, CEMES-CNRS, 29 rue J. Marvig, 31055 Toulouse, France, P. Dimitrakis, P. Normand, IMEL, 'Demokritos', 15310 Aghia Praskevi, Greece, M. Perego, M. Fanciulli, MDM-INFM, Via Olivetti 2, Agrate Brianza, Italy
- D/PII.44** STUDY OF THE UNIPOLAR BIAS RECHARGING PHENOMENON IN THE NONVOLATILE MEMORY CELLS CONTAINING SILICON NANODOTS
V. Turchanikov, A. Nazarov, V. Lysenko, Lashkarev Inst. of Semiconductor Physics, NANU, Kyiv, Ukraine, O. Winkler, B. Spangenberg, H. Kurz, Inst. of Semiconductor Electronics, Aachen University, Aachen, Germany
- D/PII.45** CHARACTERIZATION OF PROGRAM AND ERASE PROPERTIES USING FOWLER-NORDHEIM TUNNELING IN THE 30NM SILICON-OXIDE-NITRIDE-OXIDE-SILICON NON-VOLATILE MEMORIES
Ho chan Ham(a), Jin hee Heo(a), Chung woo Kim(b), Ilsub Chung(a) (a)SungKyunKwan University, (b)Samsung Advanced Institute of Technology
- D/PII.46** DETERMINATIONS AND CONTROLS OF THE MEMORY TRAP IN OXIDE-NITRIDE-OXIDE (ONO) STRUCTURES
C.J. Park(a), J.S. Oh(a), Y.H. Lee(a), W.C. Yang(a), H.Y. Cho(a), J.H. Han(b) and J.W. Kim(b), (a)Quantum-functional Semiconductor Research Center and Dept. of Physics, Dongguk University, Seoul 100-715, Korea, (b)Devices Lab, Samsung Advanced Institute of Technology, Kiheung-eup Yongin-city Kyunggi-do 449-701, Korea

- D/PII.47** SILICON NANOPARTICLES IN THERMALLY ANNEALED THIN SILICON MONOXIDE FILMS
A. Szekeres(a), A. Paneva(b), T. Nikolova(a), A. Cziraki(c), Gy. Kovacs(d), I. Lisovskyy(e), D. Mazunov(e), I. Indutnyy(e), P. Shepeliavyi(e), (a)Institute of Solid State Physics, Bulgarian Academy of Sciences, Tzarigradsko Chaussee 72, Sofia 1784, Bulgaria, (b)Sofia University, Faculty of Physics, Blvd. Bouchier 5, Sofia 1126, Bulgaria, (c)Eotvos Lorand University, Solid State Physics, Pazmany P. s. 1, 1117 Budapest, Hungary, (d)Res. Institute for Techn. Phys.&Mat. Sci., Konkoly T. 29, Budapest 1121, Hungary, (e)Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Prospekt Nauki 45, Kiev 252028, Ukraine
- D/PII.48** EFFECTS OF ELECTROSTATIC COUPLING BETWEEN NANOCRYSTALS OF MEMORY STRUCTURES
A.S. Cordan, Y. Leroy and B. Leriche, PHASE-ENSPS, Pôle API, BP 10412, 67413 Illkirch, France
- D/PII.49** NONVOLATILE MEMORY CHARACTERISTICS OF SINGLE- AND MULTI- LAYERED Si NANOCRYSTALS PREPARED BY ION BEAM SPUTTERING AND ANNEALING
Suk-Ho Choi, Yong Min Park, and Sung Kim, College of Electronics and Information and Institute of Natural Sciences, Kyung Hee University, Suwon 449-701, Korea, Kyung Joong Kim and Dae Won Moon, Nano Surface Group, Korea Research Institute of Standards and Science, P.O.Box 102, Yusong, Taejeon 305-600, Korea
- D/PII.50** PHOTOLUMINESCENCE OF SILICON NANOCRYSTALS: TIME DEPENDENT BEHAVIOUR
S. Godefroy, M. Hayne, J. Maes and V.V. Moshchalkov, Pulsed Field Group, Laboratory of Solid State Physics and Magnetism, K.U. Leuven, Celestijnenlaan 200 D, 3001 Leuven, Belgium; M. Zacharias, Max-Planck Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany
- D/PII.51** ELECTRICAL AND STRUCTURAL CONDITIONS FOR BETTER MEMORY EFFECTS OF Ge NANOCRYSTALS IN A METAL-OXIDE-SEMICONDUCTOR
S. Kim(a), S.-H. Choi(a), K.H. Cho(b), C.J. Park(b), D.Y. Kim(b), W.C. Yang(b), H.Y. Cho(b), and R.G. Elliman(c), (a)College of Electronics and Information and Institute of Natural Sciences, Kyung Hee University, Suwon 449-701, Korea, (b)Quantum-functional Semiconductor Research Center and Dept. of Physics, Dongguk University, Seoul 100-715, Korea, (c)Electronic Materials Engineering Department, Research School of Physical Sciences and Engineering, Australian National University, Canberra ACT 0200, Australia
- D/PII.52** POST-ANNEALING SILICON NANOCRYSTAL FORMATION ON SiO_x(x<2) LAYERS DEPOSITED FROM SiH₄-N₂O RF DISCHARGES
M. Bedjaoui, B. Despax, LGE, Toulouse France, M. Caumont, LPS, Toulouse France and C. Bonafos, CEMES, Toulouse France
- D/PII.53** FORMATION OF BURIED INSULATING ISLAND-LIKE SILICON OXIDE LAYER IN SILICON
A.V. Frantskevich, N.V. Frantskevich, Belarusian National Technical University, 220063 Minsk, Belarus, A.K. Fedotov, A.V. Mazanik, Belarusian State University, 220050 Minsk, Belarus, E.I. Rau and V.S. Kulinkayskas, Moscow State University, 119899 Moscow, Russia

Friday, June 3, 2005
Vendredi 3 juin 2005

Morning
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Session XI : Novel concepts

Session chair: **R. Gwilliam**

- D-XI.01** 9:00 -Invited- RECENT ADVANCES IN NANOPARTICLE MEMORIES
D. Tsoukalas, P. Dimitrakis, S. Kolliopoulou, P. Normand, Inst. of Microelectronics, NCSR Demokritos, 15310 Aghia Paraskevi, Greece, and School of Applied Sciences, NTUA, 15780 Zografou, Greece
- D-XI.02** 9:30 STRUCTURAL PROPERTIES OF GE-IMPLANTED SiO₂ LAYERS AND RELATED MOS MEMORY EFFECTS
S. Duguay, J.J. Grob, A. Slaoui, Laboratoire PHASE, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex 2, France
- D-XI.03** 9:45 EFFECTS OF OXIDIZING ANNEALING CONDITIONS ON PHOTOLUMINESCENCE OF Si NANOCRYSTALS OBTAINED BY LOW-ENERGY ION BEAM SYNTHESIS IN THIN SiO₂
M. Carrada and V. Paillard, Laboratoire de Physique des Solides (LPST), Paul Sabatier University, 118 route de Narbonne, 31062 Toulouse, France; C. Bonafos and H. Coffin, nMat Group, CEMES-CNRS, 29 rue J. Marvig, 31055 Toulouse, France
- D-XI.04** 10:00 THE EFFECTS OF OXIDATION CONDITIONS ON STRUCTURAL AND ELECTRICAL PROPERTIES OF SILICON NANOPARTICLES OBTAINED BY ULTRA-LOW ENERGY ION IMPLANTATION
J. Grisolia(a), M. Shalchian(b,c), G. BenAssayag(b), H. Coffin(b), C. Bonafos(b), S. M. Atarodi(c), and A. Claverie(b), (a)LNMO-INSA, 31077 Toulouse, France, (b)CEMES-CNRS, 31055 Toulouse, France, (c)Sharif University of Technology, Tehran, Iran
- D-XI.05** 10:15 FABRICATION OF 100NM GATE LENGTH MOSFET'S USING A NOVEL CARBON-NANOTUBE-BASED NANO-LITHOGRAPHY
J. Derakhshandeh(a), Y. Abdi(a), S. Mohajerzadeh(a), J. Koohsorkhi(a) and M.D. Robertson(b), (a)Thin Film Lab, University of Tehran, Tehran, Iran, (b)Department of Physics, Acadia University, Nova-Scotia, Canada
- 10:30 **BREAK**

Session XII : Defect/impurity engineering

Session chair: **L.A. Marques**

- D-XII.01** 10:50 -Invited- BORON DIFFUSION, CLUSTERING AND INTERACTION WITH POINT DEFECTS AND IMPURITIES IN SILICON
D. De Salvador, E. Napolitani, G. Bisognin, A. Carnera, MATIS - INFIM and Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, Italy, E. Bruno, S. Mirabella, G. Impellizzeri, F. Priolo, MATIS - INFIM and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy
- D-XII.02** 11:20 B IMPLANTED AT ROOM TEMPERATURE IN CRYSTALLINE Si: B DEFECT FORMATION AND DISSOLUTION
L. Romano, A.M. Piro, M.G. Grimaldi, MATIS - INFIM and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy
- D-XII.03** 11:35 SUPPRESSION OF BORON INTERSTITIAL CLUSTERS IN SOI USING VACANCY ENGINEERING
A.J. Smith(a), B. Colombeau(a), R. Gwilliam(a), N.E.B. Cowern(a), B.J. Sealy(a), E. Collart(b), S. Gennaro(c), M. Bersani(c), M. Barozzi(c), (a)Advanced Technology Institute, University of Surrey, Guildford GU2 7XH, U.K., (b)Applied Materials UK Ltd, Horsham RH13 5PX, U.K., (c)ITC-irst, Via Sommarive 18, 38050, Povo (Trento), Italy
- D-XII.04** 11:50 EFFECT OF FLUORINE ON BORON THERMAL DIFFUSION IN THE PRESENCE OF POINT DEFECTS
M.N. Kham, H.A.W. El Mubarek, P. Ashburn, School of Electronics & Computer Science, University of Southampton, Southampton SO17 1BJ, U.K. and J.M. Bonar, Innos Ltd, Mountbatten Building, Highfield, Southampton SO17 1BJ, U.K.
- D-XII.05** 12:05 STUDY OF FLUORINE SEGREGATION AND INCORPORATION DURING SOLID PHASE EPITAXY OF Si
G. Impellizzeri, S. Mirabella, E. Bruno, F. Priolo, MATIS-INFIM and Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy, E. Napolitani, A. Carnera, INFIM and Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, Italy
- 12:20 **CLOSING**
- 12:30 **LUNCH**