



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

SYMPOSIUM D

Second International Conference on
Silicon Epitaxy and Heterostructures

Symposium Organizers:

E. Kasper, University of Stuttgart, Germany

I. Eisele, Universität der Bundeswehr München, Germany

E.H.C. Parker, University of Warwick, UK

Papers will be published in Materials Science B

E-MRS 2001 SPRING MEETING

SYMPOSIUM D

Tuesday, June 5, 2001

Mardi 5 juin 2001

Session I: Silicon Based Optoelectronics for Communications

Chairpersons: H. v. Kaenel, K. Brunner

- D-I.1** 9.00 Invited Si BASED OPTOELECTRONICS FOR COMMUNICATIONS, **G. Masini**, L. Colace and G. Assanto, Department of Electronic Engineering & National Institute for the Physics of Matter, University Roma Tre, Via della Vasca Navale 84, 00146 Roma, Italy
- D-I.2** 9.40 SILICON BASED QUANTUM CONFINED STRUCTURES AND HETEROSTRUCTURES FOR LIGHT EMISSION AND DETECTION, **S. Coffa**, S. Libertino, A. La Magna, M. Castagna and A. Sciuto, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy, S. Lorenti, M. Camalleri and F. Frisina, STMicroelectronics, Stradale Primosole 50, 95121 Catania, Italy
- D-I.3** 10.00 Si-BASED ELECTROLUMINESCENCE AT THz FREQUENCIES, **S.A. Lynch**(a), S.S. Dhillon(a), R. Bates(a), D.J. Paul(a), D.D. Arnone(b), D.J. Robbins(c), Z. Ikonc(d), R.W. Kelsall(d), P. Harrison(d), D.J. Norris(e) and A.G. Cullis(e), (a) University of Cambridge, Cavendish Laboratory, Madingley Road, Cambridge, UK, (b) Toshiba Research Europe Ltd., 260 Science Park, Cambridge, UK, (c)DERA, Great Malvern, UK, (d)Institute of Microwaves and Photonics, University of Leeds, UK, (e)Dept. Electronic & Electrical Engineering, University of Sheffield, UK
- 10.20 **BREAK**

Session II: SiGe HBT Technology for Wireless Communications

Chairpersons: W. Hansch, D.J. Paul

- D-II.1** 10.50 Invited SiGe TECHNOLOGY BEARS FRUITS, **A. Schüppen**, ATMEL-wm, 74072 Heilbronn, Germany
- D-II.2** 11.30 A 70-GHz-FT DOUBLE-POLYSILICON SiGe HBT USING A NON SELECTIVE EPITAXIAL GROWTH, **H. Baudry**, C. Fellous, B. Martinet, F. Romagna, D. Dutartre, A. Chantre, STMicroelectronics, 850 rue Jean Monnet, 38926 Crolles, France

Session III: Quantum Effect Devices

Chairpersons: T. Pearsall, E.H.C. Parker

- D-III.1** 11.50 Si/SiGe RESONANT TUNNELLING DIODES, **D.J. Paul**(a), P. See(a), I.V. Zozoulenko(b), K.F. Berggren(b), B. Holländer(c), S. Mantl(c), N. Griffin(d), B.P. Coonan(d), G. Redmond(d) and G.M. Crean(d), (a)University of Cambridge, Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE, UK, (b)Dept. of Physics and Measurement Technology, University of Linköping, Sweden, (c)Institut für Schicht und Ionentechnik, Forschungszentrum Jülich, Germany, (d)National Microelectronics Research Centre (NMRC), Cork, Ireland
- 12.10 **LUNCH**

- D-III.2** 14.00 Si/SiGe QUANTUM CASCADE STRUCTURES EMITTING IN THE 10 μ m RANGE, G. Dehlinger, L. Diehl, U. Gennser, H. Sigg, E. Müller, S. Stutz, D. Grützmacher, Laboratory for Micro- and Nanotechnology, Paul-Scherrer-Institute, Switzerland, J. Faist, Institute of Physics, University of Neuchâtel, Switzerland, J. Stangl, G. Bauer, Institute for semiconductor Physics, University of Linz, Austria
- D-III.3** 14.20 CONDUCTION ELECTRON SPIN RESONANCE IN Si/SiGe QUANTUM WELLS: A POTENTIAL WAY TO QUANTUM COMPUTING, N. Sandersfeld(a), W. Jantsch(a), Z. Wilamowski(a,b), F. Schäffler(a), (a)Institut für Halbleiter- und Festkörperphysik, Johannes-Kepler-Universität Linz, 4040 Linz, Austria, (b)Institute of Physics, Polish Academy of Sciences, Al Lotnikow 32/64, 0668 Warsaw, Poland

Session IV: Selforganized Structures
Chairpersons: F. Schäffler, P.E. Thompson

- D-IV.1 14.40 Invited VERTICAL ORDERING OF Ge/Si SELF-ASSEMBLED QUANTUM DOTS, **P. Boucaud**, V. Le Thanh, V. Yam, S. Sauvage, N. Meneceur, D. Débarre, and D. Bouchier, Institut d'Electronique Fondamentale, UMR CNRS 8622, Bâtiment 220, Université Paris-Sud, 91405 Orsay, France
- 15.20 **BREAK**
- 15.50 – 16. 50 **Poster Session (Session V)**
- D-IV.2** 16.50 NUCLEATIONLESS THREE-DIMENSIONAL ISLAND FORMATION IN LOW-MISFIT HETEROEPITAXY, P. Sutter, E. Sutter, Colorado School of Mines, Golden CO 80401, USA, M.G. Lagally, University of Wisconsin-Madison, Madison WI 53706, USA
- D-IV.3** 17.10 LATERAL ORDERING OF Ge ISLANDS ON Si MESAS MADE BY SELECTIVE EPITAXIAL GROWTH, L. Vescan, ISG, Forschungszentrum Jülich, 52425 Jülich, Germany and T. Stoica, Institutul National de Fizica Materialelor, Bucharest, Romania
- D-IV.4** 17.30 STRUCTURAL AND OPTICAL PROPERTIES OF VERTICAL CORRELATED Ge ISLAND LAYERS GROWN AT LOW TEMPERATURES, M. Herbst, C. Schramm, K. Brunner, and G. Abstreiter, Walter Schottky Institute, Technical University Munich, Am Coulombwall, 85748 Garching, Germany
- D-IV.5** 17.50 SIZE REDUCTION OF THE Ge ISLANDS BY UTILIZING THE STRAIN FIELDS FROM THE LOWER-TEMPERATURE-GROWN HUT-CLUSTERS BURIED IN THE Si MATRIX, H. Takamiya(a), M. Miura(b), J. Mitsui(a), S. Koh(b), T. Hattori(a), and Y. Shiraki(b), (a)Department of Electrical and Electrical Engineering Musashi Institute of Technology, (b)Research Center for Advanced Science and Technology, The University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan
- D-IV.6** 18.10 STRAIN-DRIVEN ALLOYING: EFFECT ON SIZES, SHAPE AND PHOTOLUMINESCENCE OF GeSi/Si(001) SELF-ASSEMBLED ISLANDS, B.A. Andreev, N.V. Vostokov, S.A. Gusev, Yu.N. Drozdov, Z.F. Krasilnik, D.N. Lobanov, L.D. Moldavskaya, A.V. Novikov, V.V. Postnikov, M.V. Stepikhova, Institute for Physics of Microstructures RAS, 603600, Nizhny Novgorod, GSP-105, Russia, M. Miura, N. Usami, Y. Shiraki, RCAST, The University of Tokyo, Tokyo, 153-8904, Japan, M.Ya. Valakh, V.A. Yuhymchuk, Institute of Semiconductor Physics, NASU, 03028 Kiev, Ukraine

Session V: Epitaxy and Measurement of Device Structures (posters)

- D-V/P1** DIFFERENTIAL MBE GROWTH OF Si/SiGe/Si:Er:O LIGHT EMITTING TRANSISTORS, W.-X. Ni, C.-X. Du, A. Elfving, and G.V. Hansson, Dept. of Physics, Linköping University, 581 83 Linköping Sweden
- D-V/P2** ABNORMAL TEMPERATURE DEPENDENCE OF ELECTROLUMINESCENCE FROM Er/O-DOPED Si-DIODES, G.V. Hansson, W.-X. Ni, C.-X. Du, A. Elfving, and F. Duteil. Department of Physics, Linköping University, 581 83 Linköping, Sweden
- D-V/P3** SiGe/Si QUANTUM WELL STRUCTURE FOR LIGHT MODULATION, A. Cordat, S. Lardenois, V. Le Thanh, A. Koster, Institut d'Electronique Fondamentale, CNRS-Paris XI UMR 8622, 91405 Orsay, France
- D-V/P4** AN INDIRECT INTERBAND RECOMBINATION MODEL FOR ANALYSIS OF ELECTROLUMINESCENCE SPECTRA OF SILICON P-N JUNCTIONS IN AVALANCHE BREAKDOWN, M. Lahbabi(a), A. Ahaitouf(a), M. Fliyaou(b), M. Jorio(a), E. Abarkan(a), A. Hoffmann(c), J.-P. Charles(c), (a)UFR S.S.C, Faculté des Sciences et Techniques, Fes Saiss, BP 2202 Fes, Morocco, (b)E.N.S. Ben Souda, BP 5206 Fes, Morocco, (c)C.L.O.E.S., Supelec, 2 rue E. Belin, 57070 Metz, France
- D-V/P5** OPTICAL PROPERTIES OF THE LUMINESCENT THIN SILICON FILMS, A.V. Vasin, R.Yu Holiney, L.A. Matveeva, E.F. Venger, V.O. Yukhymchuk, ISP NASU, prospect Nauki 45, 252028 Kyiv, Ukraine
- D-V/P6** LASER WAVELENGTH EFFECT ON THE LIGHT EMISSION PROPERTIES OF NANOCRYSTALLINE Si ON Si SUBSTRATE FABRICATED BY PULSED LASER DEPOSITION, Jong Hoon Kim, Kyung Ah Jeon, Eun Sub Shim, Sang Yeol Lee, Department of Electrical and Electronic Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul 120-749, Korea
- D-V/P7** MBE GROWN Si/Si_{0.5}Ge_{0.5} SUPERLATTICES FOR INFRARED LIGHT DETECTION, S. Winnerl, D. Buca, S. Lenk, Ch. Buchal and S. Mantl, Institut für Schichten und Grenzflächen ISG-IT, Forschungszentrum Jülich, 52425 Jülich, Germany
- D-V/P8** HIGH Ge CONTENT PHOTODETECTORS ON THIN SiGe BUFFERS, M. Bauer, C. Schöllhorn, K. Lyutovich, E. Kasper, Institut für Halbleitertechnik, Universität Stuttgart, Germany, M. Jutzi, M. Berroth, Institut für Elektrische und Optische Nachrichtentechnik, Universität Stuttgart, Germany, M. Klose, Institut für Technische Physik, DLR Stuttgart, Germany
- D-V/P9** ALLOY AND PHONON-SCATTERING LIMITED HOLE LIFETIMES IN Si/SiGe HETEROSTRUCTURES, Z. Ikonic, P. Harrison and R.W. Kelsall, Institute of Microwaves and Photonics, School of Electronic and Electrical Engineering, The University of Leeds, Leeds LS2 9JT, UK
- D-V/P10** FEASIBILITY STUDY OF 25 V SiGe RF-POWER TRANSISTORS FOR CELLULAR BASE STATION OUTPUT AMPLIFIERS, W.-X. Ni, Dept. of Physics, Linköping University, 581 83 Linköping, Sweden, and T. Johansson, Ericsson Microelectronics AB, 164 81 Kista, Sweden
- D-V/P11** BANDGAP NARROWING IN STRAINED SiGe ON THE BASIS OF ELECTRICAL MEASUREMENTS ON Si/SiGe/Si HBT's, J. Eberhardt, E. Kasper, Institut für Halbleitertechnik, Universität Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- D-V/P12** FTIR AND SIMS INVESTIGATIONS ON SiGe:C:B HBT STRUCTURES, D. Gruber, M. Mühlberger, F. Schäffler, Institut für Halbleiterphysik, Universität Linz, 4040 Linz, Austria, M. Schatzmayr, Austria Mikrosysteme, 8141 Unterpremstätten, Austria
- D-V/P13** LATERALLY ORDERED Ge/Si ISLANDS: A NEW CONCEPT FOR FASTER FIELD EFFECT TRANSISTORS, O.G. Schmidt and K. Eberl, Max-Planck-Institut für Festkörperforschung, Heisenbergstr.1, 70569 Stuttgart, Germany, S. Christiansen, IBM T.J. Watson Research Center, Yorktown Heights, NY 10598, USA
- D-V/P14** LOW TEMPERATURE EPITAXIAL GROWTH OF GERMANIUM ISLANDS IN ACTIVE REGIONS OF SILICON INTERBAND TUNNELING DIODES, M.W. Dashiell, U. Denker, C. Müller, O.G.

Schmidt and K. Eberl, Max-Planck-Institut für Festkörperforschung, Heisenbergstrasse 1, 70569 Stuttgart, Germany

- D-V/P15** HIGH MOBILITY PURE-Ge CHANNEL MODULATION DOPED FIELD EFFECT TRANSISTORS, S. Tokumitsu(a), H. Miura, T. Irisawa, A. Miura, S. Koh, K. Nakagawa(b), T. Hattori(a), and Y. Shiraki, Research Center for Advanced Science and Technology, The University of Tokyo, 4-6-1 Komaba, Meguro-ku Tokyo, Japan, (a)Musashi Institute of Technology, (b)Yamanashi University, Japan
- D-V/P16** TRANSPORT AND STRUCTURAL CHARACTERIZATION OF EX-SITU ANNEALED MBE GROWN P-TYPE $\text{Si}_{0.2}\text{Ge}_{0.8}/\text{Si}_{0.7}\text{Ge}_{0.3}/\text{Si}(001)$ HETEROSTRUCTURES, M. Myronov, O.A. Mironov, P.J. Phillips, T.E. Whall, E.H.C. Parker, Department of Physics, University of Warwick, Coventry CV4 7AL, UK, N.P. Barradas, A.D. Sequeira, N. Franco, E. Alves, Instituto Tecnológico e Nuclear, Estrada Nacional 10, 2686-953 Sacavém, Portugal
- D-V/P17** ENHANCED VELOCITY OVERSHOOT EFFECTS IN $\text{Si}/\text{Si}_{0.64}\text{Ge}_{0.36}/\text{Si}$ pMOSFETS, M.J. Palmer, G. Braithwaite, E.H.C. Parker, T.E. Whall, Y.P. Zhao(a), S. Kaya(a), J. Watling(a), A. Asenov(a), J.R. Barker(a), A. Waite(b) and A.G.R. Evans(b), Department of Physics, University of Warwick, Coventry CV4 7AL, UK, (a)Device Modelling Group, Department of Electrical and Electronic Engineering, University of Glasgow, G12 8LA, Scotland, (b)Department of Electronic and Computer Science, University of Southampton, SO17 1BJ, UK
- D-V/P18** LOW-DIMENSIONAL INVERTED Si/SiGe MODULATION-DOPED ELECTRON GASES USING SELECTIVE EX-SITU ION IMPLANTATION, D.J. Paul(a), A. Ahmed(a), A.C. Churchill(b), D.J. Robbins(b) and W.Y. Leong(b), (a)University of Cambridge, Cavendish Laboratory, Madingley Road, Cambridge CB3 0HE, UK, (b)Defence Evaluation Research Agency (DERA), St Andrews Road, Great Malvern WR14 3PS, UK
- D-V/P19** PHONON ASSISTED TUNNELING IN MOS-GATED PIN-DIODES, S. Sedlmaier, J. Schulze, T. Sulima, C. Fink, I. Eisele, Universitaet der Bundeswehr Muenchen, Institute of Physics, 85577 Neubiberg, Germany, W. Hansch, K. Hilsenbeck, Technische Universitaet Muenchen, 80333 Muenchen, Germany
- D-V/P20** SUPER SELF-ALIGNED TECHNOLOGY OF ULTRA-SHALLOW JUNCTION IN MOSFETS USING SELECTIVE $\text{Si}_{1-x}\text{Ge}_x$ CVD, T. Yamashiro, M. Sakuraba, T. Matsuura, J. Murota and T. Tsuchiya*, Laboratory for Electronic Intelligent Systems, Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan, *Faculty of Science and Engineering, Shimane University, 1060 Nishikawatsu, Matsue, Shimane 690-8504, Japan
- D-V/P21** SELECTIVE SiGe EPITAXY BY RTCVD FOR NEW DEVICE ARCHITECTURES, P. Ribot, D. Dutartre, S. Monfray and T. Skotnicki, ST Microelectronics, 850 Rue Jean Monnet, 38926 Crolles, France
- D-V/P22** THERMAL STABILITY OF B IN POLY-SiGe ON SiON, T. Sadoh(a), F. Fitrianto(a), M. Kunigami(a), A. Kenjo(a), A. Miyauchi(b), H. Inoue(b) and M. Miyao(a), (a)Dept. of Electronics, Kyushu University, 6-10-1 Hakozaki, Fukuoka 812-8581, Japan, (b)Hitachi Research Laboratory, Hitachi, 7-1-1 Omika, Hitachi 319-1292, Japan

Wednesday, June 6, 2001
Mercredi 6 juin 2001

Session VI: In Situ Monitoring and Characterization
Chairpersons: H.J. Herzog, D. Gruetzmacher

- D-VI1** 14.00 Invited SCANNING TUNNELING MICROSCOPY ANALYSIS OF GROWTH ON 75mm Si (100) WAFERS BY MOLECULAR BEAM EPITAXY, **G.G. Jernigan** and P.E. Thompson, Electronics Science and Technology Division, Code 6812 Naval Research Laboratory, Washington DC 20375, USA
- D-VI2** 14.40 STM STUDY ON THE INITIAL GROWTH PROCESS OF SiGeC FILMS ON Si(100) SURFACES, Y. Torige, M. Okada, H. Ikeda, A. Sakai, Y. Yasuda, Department of Crystalline Materials Science, Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan and S. Zaima, Center for Cooperative Research in Advanced Science and Technology, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan
- D-VI3** 15.00 PHOTOLUMINESCENCE OF BORON-DOPED Si_{1-x}Ge_x EPILAYERS GROWN BY UHV-CVD, N.L. Rowell, National Research Council, 1200 Montreal Road, Ottawa, Canada K1A 0R6, H. Lafontaine and M. Dion, SiGe Microsystems Inc., 2680 Queensview Drive, Ottawa K2B 8J9, Canada
- 15.20 **BREAK**
- 15.50 – 17.10 **Poster Session (Session VII and VIII)**
- D-VI4** 17.10 NON-DESTRUCTIVE CHARACTERISATION OF DOPED Si AND SiGe EPILAYERS USING FTIR SPECTROSCOPIC ELLIPSOMETRY (FTIR-SE), C. Pickering, W.Y. Leong, J. Glasper, DERA, St Andrews Road, Malvern, WR14 3PS, U.K. and P. Boher, C. Defranoux, J.-P. Piel, SOPRA S.A., 26 rue Pierre Joigneaux, 92270 Bois-Colombes, France
- D-VI5** 17.30 CHALLENGES IN ACCURATE DETERMINATION OF Ge FRACTION IN SILICON GERMANIUM, H.Kheyrandish, S. Romani, G. Cooke and R.Valizadeh, MATS (UK) Ltd, Innovation House, Daten Park, Warrington WA3 6UT, UK

Session VII: Selfassembled Ge/Si:C Islands (posters)

- D-VII/P1** SURFACE DIFFUSION LIMITED NUCLEATION OF Ge DOTS ON THE Si(001) SURFACE, Y.-H. Wu, C.-Y. Wang, A. Elfving, G.V. Hansson, and W.-X. Ni, Dept. of Physics, Linköping University, 581 83 Linköping, Sweden
- D-VII/P2** TWO DIMENSIONAL VS. THREE DIMENSIONAL COMPETITION AT THE EARLY STAGES OF GROWTH FOR Ge ON Si(001) BY REALISTIC MOLECULAR DYNAMICS SIMULATIONS, P. Raiteri, M. Celino, F. Valentinotti and L. Miglio, INFN and Department of Materials Science, University of Milano-Bicocca, Milano Italy, ENEA, HPCN Project, La Casaccia, Roma, Italy
- D-VII/P3** GROWTH STUDIES OF Ge-ISLANDS FOR ENHANCED PERFORMANCE OF Si THIN FILM SOLAR CELLS, J. Konle, H. Presting, H. Kibbel, DaimlerChrysler Research Center, 89013 Ulm, Germany, K. Thonke and R. Sauer, University of Ulm, 89069 Ulm, Germany
- D-VII/P4** TRENCHES AROUND AND BETWEEN SELF ASSEMBLED SILICON/GERMANIUM ISLANDS GROWN ON SILICON SUBSTRATES INVESTIGATED BY ATOMIC FORCE MICROSCOPY, U. Denker, O.G. Schmidt, N.-Y. Jin-Phillipp and K. Eberl, Max Planck Institut für Festkörperforschung Heisenbergstrasse 1, 70569 Stuttgart, Germany

- D-VII/P5** GROWTH AND CHARACTERIZATION OF Ge ISLANDS ON Si(110), P. Ferrandis, Laboratoire de Physique de la Matière, UMR CNRS 5511, INSA de Lyon, Bât. 502, 20 avenue Albert Einstein, 69621 Villeurbanne Cedex, France and L. Vescan, Forschungszentrum Juelich GmbH, Institut fuer Schicht und Ionentechnik, 52425 Juelich, Germany
- D-VII/P6** INFLUENCE OF TEMPERATURE DURING Ge GROWTH ON C INDUCED Si(001)-c(4x4) SURFACES, M. Stoffel, J.L. Bischoff, L. Simon, D. Aubel, L. Kubler and G. Castelein*, Laboratoire de Physique et de Spectroscopie Electronique, UPRES-A CNRS 7014, 4 rue des Frères Lumière, 68093 Mulhouse, France, *Institut de Chimie des Surfaces et Interfaces UPR CNRS 9069, 15 rue Jean Starcky, BP 2488, 68057 Mulhouse, France
- D-VII/P7** NEW APPROACH TO THE MODIFIED 2D-3D TRANSITION PROCESS IN MULTI-STACKED SELF-ORGANIZED QUANTUM DOTS, C. Priester, IEMN/Dept ISEN BP 69, 59652 Villeneuve d'Ascq Cedex, France
- D-VII/P8** ELECTRONIC STRUCTURE OF Ge/Si SELF-ASSEMBLED QUANTUM DOTS WITH DIFFERENT SHAPES, J.Y. Kim and J.H. Seok, Semiconductor Physics Research Center (SPRC) & Dept. of Semiconductor Science and Technology, Jeonbuk National University, Jeonju 561-756, Korea
- D-VII/P9** OSCILLATION OF IN PLANE LATTICE CONSTANTS OF Ge ISLANDS DURING MBE GROWTH ON Si(100), A.I. Nikiforov, V.A. Cherepanov, O.P. Pchelyakov, Institute of Semiconductor Physics, Novosibirsk, Russia
- D-VII/P10** INFLUENCE OF THE GROWTH PARAMETERS ON SELF-ASSEMBLED Ge ISLANDS ON Si (100), G. Capellini, M. De Seta, and F. Evangelisti, Dipartimento di Fisica e Unita INFM, Universita di Roma Tre, Roma, Italy
- D-VII/P11** FORMATION OF Ge QDs ON B-RECONSTRUCTED SURFACE OF Si(111) H. Mori, H. Nagai, T. Yanagawa and S. Matsumoto, Keio University, Yokohama, Japan
- D-VII/P12** SHELL FILLING EFFECTS IN PHOTOCONDUCTIVITY OF Ge/Si TYPE-II QUANTUM DOTS, A.I. Yakimov, A.V. Dvurechenskii, A.V. Nenashev and A.I. Nikiforov, Institute of Semiconductor Physics, 630090 Novosibirsk, Russia
- D-VII/P13** EPITAXIAL GROWTH OF GERMANIUM DOTS ON SILICON (001) SURFACE COVERED BY A VERY THIN DIELECTRIC LAYER, M. Derivaz, A. Barski, P. Noe, J.L. Rouvière, D. Buttard, D. Sotta, Département de Recherche Fondamentale sur la Matière Condensée, CEA/Grenoble, SP2M 38054 Grenoble Cedex 9, France
- D-VII/P14** ORGANIZATION OF SELF-ASSEMBLED QUANTUM DOTS IN SiGe/Si MULTILAYERS: EFFECTS OF STRAIN AND SUBSTRATE CURVATURE, P. Sutter, E. Sutter, Colorado School of Mines, Golden CO 80401, USA, L. Vescan, Institut für Schicht und Ionentechnik Forschungszentrum Jülich, Jülich, Germany
- D-VII/P15** CRITICAL ISLAND SIZE OF THE SiC FORMATION ON Si(100) AND Si(111), F. Scharmann, J. Pezoldt, TU Ilmenau, Institut fuer Festkoerperelektronik, Postfach 100565, 98684 Ilmenau, Germany
- D-VII/P16** FORMATION OF Ge DOTS USING SB-SURFACTANT EFFECT, A. Portavoce, F. Volpi, A. Ronda, I. Berbezier, CNRS, CRMC2, Campus de Luminy, Marseille, France

Session VIII: Doping and Layer Structure (posters)

- D-VIII/P1** THERMAL STABILITY OF ULTRA-SHALLOW JUNCTIONS IN SILICON FORMED BY MOLECULAR-BEAM EPITAXY USING BORON DELTA DOPING, P.E. Thompson, Code 6812, Naval Research Laboratory, Washington DC 20375-5347, USA, J. Bennett, Sematech, Austin TX 78741, USA
- D-VIII/P2** STRUCTURAL CHARACTERISATION OF HIGHLY BORON DOPED SiGe/Si HETEROSTRUCTURES, J.F. Woitok, Philips Analytical, P.O. Box 13, 7600 AA Almelo, The Netherlands, C.C.G. Visser and T.L.M. Scholtes, DIMES, Delft University of Technology, P.O. Box 5053, 2600 GB, The Netherlands
- D-VIII/P3** GROWTH AND ELECTRICAL CHARACTERISATION OF HIGHLY DOPED SiGe/Si HETEROSTRUCTURES, D. Tsamakidis (a), Ch. Sargentis(a), G. Apostolopoulos(b), N. Boukos(b), (a)Department of Electrical and Computer Engineering National Technical University of Athens, Iroon Polytechniou 9, 157 73 Zografou, Athens, Greece, (b)Institute of Materials Science, NCSR "Demokritos", 153 10 Ag.Paraskevi, Greece
- D-VIII/P4** DOPANT DIFFUSION IN SiGe: MODELING STRESS AND Ge CHEMICAL EFFECT, A. Pakfar, LPM-INSA de Lyon, 69621 Villeurbanne cedex, France and ST Microelectronics, 850 rue Jean Monnet, 38926 Crolles cedex, France
- D-VIII/P5** EFFECT OF ANNEALING ENVIRONMENT ON ANTIMONY REDISTRIBUTION IN PSEUDOMORPHIC Si/SiGe/Si<Sb> HETEROSTRUCTURES, V.S. Avrutin, M.Yu. Barabanenkoy, N.F. Izyumskaya, A.N. Pustovit, A.F. Vyatkin, Institute of Microelectronics Technology, RAS, Chernogolovka, 142432 Russia, N.N. Loiko, Lebedev Physical Institute, Moscow, Russia
- D-VIII/P6** ELECTRONIC TRANSPORT PROPERTIES OF SiGe ALLOYS AND HETEROSTRUCTURES GROWN BY Sb ASSISTED MBE, N. Pinto, R. Murri, C. Pasquali, INFN, Dipartimento di Matematica e Fisica, Universita di Camerino, Via Madonna delle Carceri, 62032 Camerino, Italy, G. Barucca, G. Majni, INFN, Dipartimento di Scienza dei Materiali e della Terra, Universita di Ancona, Via Breccie Bianche, 60131 Ancona, Italy and G. Leggieri, INFN, Universita di Lecce, Dipartimento di Fisica, 73100 Lecce, Italy
- D-VIII/P7** REVERSE TEMPERATURE DEPENDENCE OF Sb STICKING ON Si(100) SURFACES, K. Nakagawa, S. Yamaguchi, N. Sugii and Y. Shiraki, Institute of Inorganic Synthesis, Yamanashi University, 7 Miyamae-cho, Koufu, Yamanashi 400-8511, Japan
- D-VIII/P8** INVESTIGATION OF THE SILICON ION DENSITY DURING MBE GROWTH, G. Eifler, E. Kasper, Institut für Halbleitertechnik, Pfaffenwaldring 47, 70569 Stuttgart, Germany and Kh. Ashurov, S. Morozov, Arifov Institute of Science, Akademgorodok, 700143 Tashkent, Uzbekistan
- D-VIII/P9** INFLUENCE OF CARBON ON THERMAL STABILITY OF SILICON ATOMIC LAYER FORMED ON Ge(100), M. Fujii, M. Sakuraba, T. Matsuura and J. Murota, Laboratory for Electronic Intelligent Systems, Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan
- D-VIII/P10** EPITAXY OF SILICON WITH HIGH CARBON CONCENTRATION WITH MBE, P. Lavéant, G. Gerth, P. Werner, S. Senz and U. Gösele, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany
- D-VIII/P11** IN SITU RHEED MONITORING OF THE CARBON INCORPORATION DURING SiGeC/Si(001) GROWTH IN AN UHV-CVD SYSTEM, V. Le Thanh(a), Y. Zheng(b), V. Fortuna(a), D. Bouchier(a) and J.-C. Dupuy(c), (a)Institut d'Electronique Fondamentale, UMR-CNRS 8622, Université Paris-Sud, Orsay, France, (b)Lab. Minéralogie-Cristallographie, UMR-CNRS 7590, Université Paris VI, Jussieu, Paris, France, (c)Lab. Phys. de la Matière, UMR-CNRS 5511, INSA de Lyon, France
- D-VIII/P12** MBE GROWTH AND THERMAL STABILITY OF GeNSiM STRAINED-MONOLAYER SUPERLATTICES, V.A. Markov, Institute of Semiconductor Physics, Novosibirsk 630090, Russia

- D-VIII/P13** MBE GROWN SHORT-PERIOD (Si_m/Ge_n)_N SUPERLATTICES (SSLs) AND ITS EFFECTS ON THE GROWTH OF UNIFORM $\text{Si}_{0.75}\text{Ge}_{0.25}/(\text{SSLs})\text{Si}(001)$ SYSTEMS, M.M. Rahman, H. Matada, T. Tambo, and C. Tatsuyama, Dept. of Electrical and Electronic Engineering, Faculty of Engineering, Toyama University, 3190-Gofuku, Toyama 930-8555, Japan
- D-VIII/P14** STEP BUNCHING AND STRAIN-EFFECTS IN $\text{Si}(1-x)\text{Ge}(x)$ LAYERS GROWN ON VICINAL $\text{Si}(001)$, C. Schelling, M. Mühlberger, G. Springholz and F. Schäffler, Institut für Halbleiterphysik, Johannes-Kepler-Universität Linz, 4040 Linz, Austria
- D-VIII/P15** CRYSTALLINE TO AMORPHOUS PHASE TRANSITION IN VERY LOW TEMPERATURE MOLECULAR BEAM EPITAXY, M. Bauer, M. Oehme, E. Kasper, Institut für Halbleitertechnik, Universität Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- D-VIII/P16** THERMAL OXIDATION OF EPITAXIAL SiGe THIN FILMS, A. Terrasi, S. Scalse, M. Re, F. Priolo, E. Rimini, INFN & Dipartimento di Fisica, Università di Catania, Corso Italia 57, 95129 Catania, Italy, C. Spinella, CNR-IMETEM, Stradale Primosole 50, 95100 Catania, Italy
- D-VIII/P17** INITIAL GROWTH STAGES OF Si ON $\text{H}/\text{Si}(001)-(2\times 1)$ SURFACE, J. Nara, T. Ohno, National Institute for Materials Science, 1-2-1 Sengen, Tsukuba 305-0047, Japan, H. Kajiyama, and T. Hashizume, Adv. Res. Lab. Hitachi, Ltd, Hatoyama, Saitama 350-0395, Japan

Thursday, June 7, 2001
Jeudi 7 juin 2001

Session IX: Epitaxial Insulators and Silicides
Chairpersons: J. Murota, W.X. Ni

- D-IX.1** 9.00 Invited PHYSICAL AND ELECTRICAL CHARACTERISTICS OF HIGH-K GATE DIELECTRICS FOR SCALED CMOS, **G. Wilk**, Electronic Device Research Lab, Agere Systems, Murray Hill NJ 07974, USA
- D-IX.2** 9.40 THIN Si/SiO_x HETEROSTRUCTURES GROWN BY MOLECULAR BEAM EPITAXY, **A. Sticht**, M. Markmann, K. Brunner and G. Abstreiter, Walter Schottky Institut, TU München, Am Coulombwall 3, 85748 Garching, Germany
- D-IX.3** 10.00 STRUCTURAL AND ELECTRICAL CHARACTERISTICS OF CVD-CoSi₂/Si_{0.83}Ge_{0.17}/Si(001) AND CVD-WSi_x/Si_{0.83}Ge_{0.17}/Si(001), **D.O. Shin**, Y.C. Jang, S.H. Ban, N.-E. Lee, B.T. Ahn(a), K.-H. Shim(b), Department of Materials Engineering, Sungkyunkwan University, Suwon, Kyunggi-do, 440-746, Korea, (a)Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, 373-1 Koosungdong, Yusong-gu, Taejon 305-701, Korea, (b)Semiconductor Division, Electronics and Telecommunications Research Institute, Taejon 305-600, Korea
- 10.20 **BREAK**
- D-IX.4** 10.50 ELECTRONIC PROPERTIES OF METAL SILICIDES THIN FILMS, **D.A. Tashmukhamedova**, B.E. Umirzakov, A.K. Tashatov, F.N. Beknazarov, M.T. Normuradov, Tashkent State Technical University, Tashkent 700095, Uzbekistan
- D-IX.5** 11.10 SCHOTTKY BARRIER INHOMOGENEITIES AT W-CONTACTS TO CARBON-CONTAINING SILICON/GERMANIUM ALLOY, A. Hattab, J.L. Perrossier, **F. Meyer**, IEF, UMR-CNRS 8622, Université Paris Sud, 91405 Orsay, France, H.J. Osten, J. Griesche, IHP, Frankfurt/Oder, Germany

Session X: Equipment and Growth Techniques
Chairpersons: S. Chiussi, V. Le Thanh

- D-X.1** 11.30 Invited LOW ENERGY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION, **M. Kummer** and H. v. Känel, Institute For Solid State Physics, ETH Hönggerberg, 8093 Zürich, Switzerland, C. Rosenblad, Unaxis Semiconductors, 9496 Balzers, Liechtenstein, A. Dommann, Interstate University for Applied Sciences NTB, 9471 Buchs, Switzerland
- 12.10 **LUNCH**
- D-X.2** 14.00 Si-1-x-yGexCy ALLOY GROWTH BY ELECTRON CYCLOTRON RESONANCE PLASMA-ASSISTED Si MOLECULAR BEAM EPITAXY, **J. -M. Baribeau**, D.J. Lockwood, J. Balle*, S.J. Rolfe, I. Sproule Institute for Microstructural Sciences, National Research Council Canada, Ottawa, K1A 0R6, Canada, *Institute of Physics and Astronomy (IFA), University of Aarhus, 8000 Aarhus C, Denmark
- D-X.3** 14.20 DOPING AND ELECTRICAL CHARACTERISTICS OF Si FILMS EPITAXIALLY GROWN AT 450°C BY ALTERNATELY SUPPLIED pH₃ AND SiH₄, **Y. Shimamune**, M. Sakuraba, T. Matsuura and J. Murota, Laboratory for Electronic Intelligent Systems, Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan

D-X.4 14.40 GROWTH AND CHARACTERIZATION OF PHOSPHORUS DOPED Si_{1-y}Cy ALLOY GROWN BY PHOTO- AND PLASMA-CVD AT VERY LOW TEMPERATURE, K. Abe, S. Yagi, T. Okabayashi, A. Yamada and M. Konagai
Department of Physical Electronics, Tokyo Institute of Technology, Japan

15.00 **BREAK**

15.30 – 16.30 **Poster Session (session XI, XII and XIII)**

Session XIV: Growth Mechanisms

Chairpersons: P. Sutter, I. Eisele

D-XIV.1 16.30 Invited GROWTH MECHANISMS IN THIN FILM EPITAXY OF Si/SiGe FROM HYDRIDES, **J. Zhang**, N.J. Woods, G. Breton, Dept of Physics, Imperial College, London SW7 2BW, UK and E.S. Tok, Dept. of Materials Sciences, National University of Singapore, Lower Kent Ridge, 119260 Singapore

D-XIV.2 17.10 SURFACE SMOOTHING OF SiGe STRAIN-RELAXED BUFFER LAYERS BY CHEMICAL MECHANICAL POLISHING, K. Sawano, K. Kawaguchi, (a)T. Ueno, S. Koh, (b)K. Nakagawa, and Y. Shiraki, Research Center for Advanced Science and Technology, The University of Tokyo, 4-6-1 Komaba, Meguro-ku Tokyo, Japan (a)Fujitsu Laboratories Ltd. (b)Yamanashi University, Japan

D-XIV.3 17.30 ON THE MICROSCOPIC ORIGIN OF KINETIC GROWTH INSTABILITIES IN Si(001) HOMOEPITAXY, J. Myslivecek, C. Schelling, F. Schäffler, Institut für Halbleiterphysik, Johannes-Kepler-Universität Linz, Altenbergerstraße 69, 4040 Linz, Austria, P. Smilauer, Academy of Sciences of the Czech Republic, Cukrovarnicka 10, 162 53 Praha 6, Czech Republic

D-XIV.4 17.50 ORIGIN OF THE GROWTH INSTABILITIES / COMPARISON BETWEEN Si/Si AND SiGe/Si, I. Berbezier, A. Pascale, A. Portavoce, A. Ronda, CNRS, CRMC2, Campus de Luminy, Marseille, France

Session XI: Methods and Components for Low Temperature Deposition (posters)

D-XI/P1 LOW TEMPERATURE SELECTIVE EPITAXY OF SILICON WITH CHLORINATED CHEMISTRY BY RTCVD, P. Ribot and D. Dutartre, ST Microelectronics, 850 Rue Jean Monnet, 38926 Crolles, France

D-XI/P2 LPCVD GROWTH OF SILICON EPITAXY SELECTIVE TO SILICON NITRIDE, N.S. Lloyd, J.M. Bonar, Department of Electronics and Computer Science, University of Southampton, Highfield, Southampton SO17 1BJ, UK

D-XI/P3 PHOSPHORUS PROFILE CONTROL IN LOW-TEMPERATURE Si EPITAXY BY REDUCED PRESSURE CHEMICAL VAPOR DEPOSITION, E. Suvar, H. Radamson and J.V. Grahn, Royal Institute of Technology (KTH), Department of Electronics, P.O. Box Electrum 229, 164 40 Kista, Sweden

D-XI/P4 LOW TEMPERATURE EPITAXIAL SILICON FILMS DEPOSITED BY ION-ASSISTED DEPOSITION, T.A. Wagner, L. Oberbeck and R.B. Bergmann, Institut für Physikalische Elektronik, Universität Stuttgart, Germany

D-XI/P5 MODELING OF EPILAYER THICKNESS UNIFORMITY AND PARASITIC DEPOSIT GROWTH DURING Si EPITAXY ON THE 300 mm WAFER, A.S. Segal, S.Yu. Karpov, A.V. Kondratyev, A.P. Sidako, E.V. Yakovlev, Soft-Impact Ltd, St.Petersburg, Russia, Yu.N. Makarov, STR Inc, Richmond, VA, USA, W. Siebert, P. Storck, Wacker Siltronic AG, Burghausen, Germany, S. Lowry, CFD Research Corporation, Huntsville, AL, USA

- D-XI/P6** GROWTH BY REDUCED PRESSURE CHEMICAL VAPOR DEPOSITION OF Si/SiGe HETEROSTRUCTURES, J.M. Hartmann, V. Loup, G. Rolland, F. Laugier, P. Holliger, C. Vannuffel and M.N. Semeria, LETI (CEA-Grenoble), 17 Av. des Martyrs, 38054 Grenoble Cedex 9, France
- D-XI/P7** THERMAL AND CHEMICAL EFFECTS OF THE SUBSTRATE IN NON-SELECTIVE Si / SiGe EPITAXY, C. Fellous, D. Dutartre, F. Romagna, STMicroelectronics, 850 rue Jean Monnet, 38926 Crolles, France
- D-XI/P8** A POWERFUL COMBINATION OF UHV-CVD AND LEPECVD FOR ADVANCED SiGe DEVICE STRUCTURE SYNTHESIS, C. Rosenblad, T. Buschbaum, H.M. Buschbeck, J. Ramm, Unaxis Semiconductors, 9496 Balzers, Liechtenstein, A. Dommann, M. Kummer, Interstate University of Applied Science, 9471 Buchs, Switzerland, H. von Kaenel, Swiss Federal Institute of Technology Zuerich, 8093 Zuerich, Switzerland
- D-XI/P9** CHARACTERIZATION OF LOW TEMPERATURE EPITAXIAL Si AND Si_{1-y}C_y FILMS GROWN BY HOT WIRE CELL METHOD, T. Watahiki, K. Abe, H. Tamura, S. Miyajima, A. Yamada and M. Konagai, Department of Physical Electronics, Tokyo Institute of Technology, Japan
- D-XI/P10** MBE SOURCE FOR GERMANIUM – CARBON CO-EVAPORATION, M. Oehme, M. Bauer, G. Eifler and E. Kasper, Institut f. Halbleitertechnik, University of Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany
- D-XI/P11** LOW-TEMPERATURE SOLID-PHASE CRYSTALIZATION OF a-Si_{1-x}Ge_x ON SiO₂ BY ION-BEAM STIMULATION, I. Tsunoda, T. Nagata, A. Kenjo, T. Sadoh and M. Miyao, Depart. of Electronics, Kyushu University, 6-10-1 Hakozaki, Fukuoka 812-8581, Japan

Session XII: Virtual Substrates for Strain Adjustment (posters)

- D-XII/P1** THIN SiGe BUFFERS WITH HIGH Ge CONTENT FOR n-MOSFETs, K. Lyutovich, M. Bauer, E. Kasper, Institut für Halb- leitertechnik, Universität Stuttgart, Germany, H.-J. Herzog, DaimlerChrysler AG, Research Center Ulm, Germany, T. Perova and R. Maurice, University of Dublin, Trinity college, Dublin 2, Ireland, C. Hofer and C. Teichert, Dept. of Physics, Montanuniversität Leoben, Austria
- D-XII/P2** Si/SiGe MODULATION-DOPED HETEROSTRUCTURES GROWN ON SILICON-ON-INSULATOR SUBSTRATES FOR HIGH MOBILITY TWO DIMENSIONAL GASES, L. Di Gaspare, K. Alfaramawi, G. Scappucci, and F.Evangelisti Unita INFN and Dipartimento di Fisica, Università degli Studi di Roma TRE, Via della Vasca Navale 84, 00146 Roma, Italy, E. Palange, Unita INFN and Dipartimento di Energetica, Università degli Studi de L'Aquila, 67040 Monteluco di Roio (L'Aquila), Italy, G. Barucca and G. Majni, Unita INFN and Dipartimento di Scienze dei Materiali e della Terra, Università degli Studi di Ancona, Via Brece Bianche, Ancona, Italy
- D-XII/P3** LOW-TEMPERATURE STRAIN RELAXATION IN ION-IRRADIATED PSEUDOMORPHIC SiGe/Si STRUCTURES, V.S. Avrutin, N.F. Izyumskaya, A.F. Vyatkin, V.I. Zinenko, Institute of Microelectronics Technology, RAS, Chernogolovka, 142432 Russia I.A. Smirnova, Institute of Solid State Physics, RAS, Chernogolovka, 142432 Russia, V.I. Vdovin, Institute for Chemical Problems of Microelectronics, Moscow, Russia, and T.G. Yugova Institute of Rare Metals, Moscow, Russia
- D-XII/P4** FORMATION OF STRAIN-RELAXED SiGe FILMS ON Si SUBSTRATES WITH CAP LAYERS, K. Sugimoto, T. Yamamoto, M. Okada, H. Ikeda, A. Sakai, Y. Yasuda, Department of Crystalline Materials Science, Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan and S. Zaima, Center for Cooperative Research in Advanced Science and Technology, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan
- D-XII/P5** Ge EPILAYERS ON Si WITH SMOOTH SURFACES AND LOW DISLOCATION DENSITIES, J. Lundsgaard Hansen and A. Nylandsted Larsen, Institute of Physics and Astronomy, University of Aarhus, Denmark
- D-XII/P6** GROWTH OF RELAXED SiGe LAYERS USING AN OXYGEN-DOPED Si(O) COMPLIANT LAYER, E. Haq, W.-X. Ni, and G.V. Hansson, Department of Physics, Linköping University, 581 83 Linköping, Sweden

- D-XII/P7** STRAIN RELAXATION OF PSEUDOMORPHIC $\text{Si}_{1-x}\text{Ge}_x$ LAYERS ON Si(100) AFTER HELIUM ION IMPLANTATION, S. Mantl(a), B. Holländer(a), St. Lenk(a), D. Kirch(b), M. Luysberg(b), H. Trinkaus(b), Th. Hackbarth(c), H.-J. Herzog(c) and P.F.P. Fichtner(d), (a)Forschungszentrum Jülich GmbH, ISG, 52425 Jülich, Germany, (b)Forschungszentrum Jülich GmbH, IFF, 52425 Jülich, Germany, (c)DaimlerChrysler Forschungszentrum Ulm, 89081 Ulm, Germany, (d)Dept. de Metalurgia, UFRGS, Porto Alegre, Brazil
- D-XII/P8** FABRICATION OF STRAINED Si ON SUB-10-nm-THICK SiGe-ON-INSULATOR VIRTUAL SUBSTRATE, T. Tezuka, N. Sugiyama and S. Takagi, Advanced LSI Technology Laboratory, Corporate Research & Development Center, Toshiba Corporation, 1Komukai Toshiba-cho, Saiwai-ku, Kawasaki 210-8582, Japan
- D-XII/P9** FABRICATION OF SiGe BULK CRYSTALS WITH UNIFORM COMPOSITION AS SUBSTRATES FOR Si-BASED HETEROSTRUCTURES, N. Usami, Y. Azuma, T. Ujihara, G. Sazaki, K. Fujiwara, Y. Murakami, and K. Nakajima, Institute for Materials Research (IMR), Tohoku University, Sendai, Japan
- D-XII/P10** Si/SiGe FETS GROWN BY MBE ON A LEPECVD GROWN VIRTUAL SUBSTRATE, T. Mack, T. Hackbarth and H.J. Herzog, DaimlerChrysler AG, Research and Technology, 89081 Ulm, Germany, H. von Känel and M. Kummer, ETH Zürich, 8093 Zürich, Switzerland, J. Ramm, Unaxis, Balzers, Liechtenstein, R. Sauer, University of Ulm, Dept. for Halbleiterphysik, 89081 Ulm, Germany

Session XIII: Silicide Contacts and Ferroelectric Layers on Si and SiGe (posters)

- D-XIII/P1** STUDY ON SOLID PHASE REACTION IN Ti/p+-Si_{1-x-y}Ge_xCy/Si CONTACTS, A. Tobioka, Y. Tsuchiya, H. Ikeda, A. Sakai, and Y. Yasuda, Department of Crystalline Materials Science, Graduate School of Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan; S. Zaima, Center for Cooperative Research in Advanced Science and Technology, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan and J. Murota, Research Institute of Electrical Communication, Tohoku University, 2-2-1 Katahira, Aoba-ku, Sendai 980-8577, Japan
- D-XIII/P2** USE OF ErSi₂ IN SOURCE/DRAIN CONTACTS OF ULTRA-THIN SOI MOSFETS, M.O. Huda, K. Sakamoto, Electrotechnical Laboratory, 1-1-4 Umezono, Tsukuba 305-8568, Japan
- D-XIII/P3** EPITAXIAL ErSi₂ FILMS ON STRAINED AND RELAXED SiGe, A. Travlos, G. Apostolopoulos, N. Boukos, Institute of Materials Science, NCSR "Demokritos", 153 10 Ag. Paraskevi, Greece, Ch. Katiniotis, D. Tsamakis, Department of Electrical and Computer Engineering, National Technical University of Athens, Iroon Polytechniou 9, 157 73 Zografou, Athens, Greece
- D-XIII/P4** STABILIZATION OF EPITAXIAL Fe-SILICIDES USING PULSED LASER ANNEALING, A. Falepin, A. Vantomme, S. Cottenier, I.K.S. Leuven University, Celestijnenlaan 200D, 3001 Leuven, Belgium, C.M. Comrie, University of Cape Town, Rondebosch, South Africa
- D-XIII/P5** FORMATION OF EPITAXIAL CoSi₂ FILM ON Si_{1-x}Ge_x(100) BY REACTIVE DEPOSITION EPITAXY OF Co_{1-x}Ti_x LAYER, G. Peto, G. Molnar, MTA Research Institute for Technical Physics and Materials Science, 1525 Budapest, PO. Box 49, Hungary, E. Kotai, I. Dezsai, KFKI Research Institute for Particle and Nuclear Physics, 1525 Budapest, PO. Box 49, Hungary, M. Karlsteen, U. Södervall, M. Willander, Chalmers University, 41296 Göteborg, Sweden, M. Caymax, R. Loo, IMEC Leuven Kapeldreef 75, 3001 Belgium
- D-XIII/P6** DAFS STUDY OF TERNARY COBALT AND IRON SILICIDES EPITAXIED ON Si(111), O. Ersen, C. Ulhaq-Bouillet, V. Pierron-Bohnes, IPCMS-GEMM, 23 rue du Loess, 67037 Strasbourg, France, C. Pirri, M.-H. Tuilier, D. Berling, P. Bertoncini, LPSE, 4 rue des frères Lumière, 68093 Mulhouse, France, M. Gailhanou, LURE Univ. Paris Sud , bât. 209D, 91405 Orsay, France
- D-XIII/P7** ELECTRIC PROPERTIES OF Pt/PbZr_{0.53}Ti_{0.47}O₃/LaAlO₃/Si STRUCTURE, Y.P. Wang, X.B. Lu, H.Q. Lin and Z.G. Liu, National Laboratory of Solid State Microstructures, Nanjing University, Hankou Road 22, Nanjing 210093, China

- D-XIII/P8** PULSED EXCIMER (KRF) LASER ANNEALING INDUCED CRYSTALLIZATION OF AMORPHOUS SBT FILMS, T. Zhu, Y.P. Wang, L. Zhou and Z.G. Liu, National Laboratory of Solid State Microstructures, Nanjing University, Hankou Road 22, Nanjing 210093, People's Republic of China
- D-XIII/P9** STM STUDIES OF FULLERENE C60 ON A Si(111):B SURPHASE PHASE, T. Stimpel, H.E. Hoster, J. Schulze, H. Baumgaertner, I. Eisele, Universitaet der Bundeswehr Muenchen, Institute of Physics, Faculty of Electrical Engineering, 85577 Neubiberg, Germany

Friday, June 8, 2001
Vendredi 8 juin 2001

Session XV: Surface Phenomena
Chairpersons: I. Berbezier, A. Vyatkin

- D-XV.1** 9.00 Invited ARTIFICIAL ATOMIC-SCALE STRUCTURES ON SEMICONDUCTORS STUDIED WITH THE STM, **G. Dujardin**, Laboratoire de Photophysique Moléculaire, Orsay, France
- D-XV.2** 9.40 SURFACE STRUCTURE OF Si(100) WITH SUBMONOLAYER COVERAGES OF C, S.T. Jemander, H.M. Zhang, R.I.G. Uhrberg, and G.V. Hansson, Department of Physics, Linköping University, 581 83 Linköping, Sweden
- D-XV.3** 10.00 EPITAXIAL GROWTH KINETICS IN THE PRESENCE OF AN EHRlich-SCHWOEBEL BARRIER: COMPARATIVE ANALYSIS OF DIFFERENT MODELS, V.I. Trofimov, V.G. Mokerov, Inst. of Radioengr. & Elec. of RAS, 11 Mokhovaya Str., 103907 Moscow, Russia
- 10.20 **BREAK**

Session XVI: Field Effect Transistors and Integration Aspects
Chairpersons: A. Nikiforov, S. Zaima

- D-XVI.1** 10.50 Invited DEVICE STRUCTURE AND ELECTRICAL CHARACTERISTICS OF STRAINED-Si-ON-INSULATOR (STRAINED-SOI) MOSFETS, **S. Takagi**, N. Sugiyama, T. Mizuno, T. Tezuka and A. Kurobe, Advanced LSI Technology Laboratory, Toshiba Corporation, 1 Komukai Toshiba-cho, Saiwai-ku, Kawasaki, Japan
- D-XVI.2** 11.30 ULTRA-SHALLOW JUNCTION OF SOI MOSFET WITH IN-SITU ELEVATED SiGe SOURCE/ DRAIN, K.W. Koh, H.J. Oh, M.G. Lee, J.C. Bea, H. Choi, T. Tanabe, T. Hirose, K.T. Park, H. Kurino, and M. Koyanagi, Dept. of Machine Intelligence and Systems Engineering, Tohoku University, 01 Azaaoba, Aramaki, Aoba-ku, Sendai 980-8579, Japan
- D-XVI.3** 11.50 THE VERTICAL CONCEPT OF POWER MOSFETS, C. Tolksdorf, C. Fink, J. Schulze, S. Sedlmaier, I. Eisele, Universitaet der Bundeswehr Muenchen, Institute of Physics, Faculty of Electrical Engineering, 85577 Neubiberg, Germany and W. Hansch, Technical University of Munich, Lehrstuhl fuer Technische Elektronik, 80333 Muenchen, Germany
- 12.10 **LUNCH**
- D-XVI.4** 14.00 REDUCED LOW FREQUENCY NOISE IN Si/Si_{0.68}Ge_{0.32}/Si P-CHANNEL MOSFETS, M.J. Prest, G. Braithwaite, O.A. Mironov, T. Grasby, P. Phillips, B.K. Jones*, E.H.C. Parker and T.E. Whall, Department of Physics, University of Warwick, Coventry CV4 7AL, UK, *Department of Physics, University of Lancaster, UK
- D-XVI.5** 14.20 Invited A REVIEW OF SiGe HETERO FIELD EFFECT TRANSISTORS, **U. Koenig**, DaimlerChrysler AG, Research Center, PO Box 2360, 89013 Ulm, Germany
- 15.00 **CLOSING REMARKS**
E. Kasper, E.H.C. Parker, I. Eisele