



E-MRS – IUMRS – ICEM 2000



SYMPOSIUM G

Optoelectronics I:

Materials and Technologies for Optoelectronic Devices

May 30 – June 2, 2000

Symposium Organizers:

C. Sirtori, LCR Thomson-CSF, France

Y. Amitai, ELOP - Electro-Optics Industries Ltd., Rehovot, Israel

L. Pavesi, INFM, Universita' di Trento, Italy

V. Weiss, ELOP - Electro-Optics Industries Ltd., Rehovot, Israel

K.J. Ebeling, University of Ulm, Germany

Papers will be published in *Optical Materials*

E-MRS 2000 SPRING MEETING

SYMPOSIUM G

Tuesday May 30, 2000

Mardi 30 mai 2000

Morning

Matin

Session I - Photonic Band Gap

- G-I.1** 9:00 **Invited** GUIDES DEFINED IN PHOTONIC CRYSTAL : THEORY AND EXPERIMENT, **H. Benisty**, Ecole Polytechnique, France
- G-I.2** 9:30 **Invited** SELF-ASSEMBLED HETEROSTRUCTURES BASED ON MAGNETIC PARTICLES AND CONJUGATED POLYMERS FOR PHOTONIC STRUCTURES AND ELECTROLUMINESCENCE, **D. Davidov**, T. Chi, H. Nassar, M. Golosovsky and Y. Saado, Racah Institute of Physics, Hebrew University of Jerusalem, Israel
- G-I.3** 10:00 TRANSMISSION OF 2D MACRO-POROUS-SILICON PHOTONIC CRYSTALS WITH BANDGAPS AT 3-5 AND 1.5 μm , **J. Schilling**, A. Birner, F. Mueller, R.B. Wehrspohn, U. Goesele, Max-Planck-Institute for Microstructure Physics, Weinberg 2, 06120 Halle, Germany, K. Busch, Institute for theory of condensed matter, University of Karlsruhe, 76128 Karlsruhe, Germany, S.W. Leonard, S. John and H.M. van Driel, University of Toronto, 60th George Street, Toronto, Ontario M5S 1A7, Canada
- G-I.4** 10:15 TITANIA INVERSE OPALS FOR IR OPTICAL APPLICATIONS, M. Lanata, M. Cherchi, **A. Zappettini**, S. M. Pietralunga, M. Martinelli, CORECOM, Via Ampère 30, 20131 Milano, Italy
- 10:30 **BREAK**

Session II - Microcavity

- G-II.1** 11:00 **Invited** LATERAL COUPLING: A MATERIAL – INDEPENDENT WAY TO COMPLEX COUPLED DFB LASERS, **M. Kamp**, Wuerzburg, Germany
- G-II.2** 11:30 **Invited** MICROCAVITY PHYSICS AND APPLICATIONS, **R. Houdre**, EPFL, Lausanne, Switzerland
- G-II.3** 12:00 $(\text{Si}/\text{SiO}_2)_n$ MULTILAYERS AND MICROCAVITIES FOR LED APPLICATIONS, **G. Pucker**⁽¹⁾, **P. Bellutti**⁽²⁾, **M. Cazzanelli**⁽¹⁾, **Z. Gaburro**⁽¹⁾, **L. Pavesi**⁽¹⁾, ⁽¹⁾INFM and Department of Physics, via Sommarive 14, 38050 Povo-Trento, Italy, ⁽²⁾ITC-IRST, Microsystem Division, 38050 Povo-Trento, Italy
- G-II.4** 12:15 SILICON BASED MICROCAVITIES FOR OPTICAL DEVICES, **E. Hadji**⁽¹⁾, **V. Calvo**⁽¹⁾, **T. Charvolin**⁽¹⁾, **H. Ulmer**⁽¹⁾, **D. Sotta**⁽¹⁾, **N. Magnea**⁽¹⁾, **F. Baleras**⁽²⁾, **O. Constantin**⁽²⁾, **H. Moriceau**⁽²⁾, **P. Besson**⁽³⁾, **M. Heitzmann**⁽³⁾, **F. Martin**⁽³⁾, **M. N. Semeria**⁽³⁾, DRFMC/SP2M/SiNaPS, ⁽²⁾LETI/DMITEC, ⁽³⁾LETI/DMEL, CEA-Grenoble, 17 rue des Martyrs, 38054 Grenoble cedex 9, France
- G-II.5** 12:30 SILICON MICROCAVITY LIGHT EMITTING DEVICES, S. Chan and **P.M. Fauchet**, University of Rochester, Rochester NY 14627, USA
- 12:45 **LUNCH**

Tuesday May 30, 2000

Mardi 30 mai 2000

Afternoon

Après-midi

Session III - Si Optoelectronics 1

- G-III.1** 14:00 **Invited** OPTICAL PROPERTIES OF SILICON NANOCRYSTALS, **D. Kovalev**, H. Heckler, G. Polisski, F. Koch, Technische Universitaet Muenchen, Physik-Department E16, 85747 Garching, Germany
- G-III.2** 14:30 **Invited** SILICON-BASED OPTICAL WAVEGUIDES, **T.M. Benson**, P. Sewell, H.F. Arrand, S.C. Greedy, School of Electrical and Electronic Engineering, University of Nottingham, University Park, Nottingham NG7 2RD, UK
- G-III.3** 15:00 OPTICAL GAIN MEASUREMENTS IN SILICON NANOCRYSTALS, **L. Dal Negro**⁽¹⁾, C. Mazzoleni⁽¹⁾, L. Pavesi⁽¹⁾, G. Franzo⁽²⁾, F. Priolo⁽²⁾, ⁽¹⁾INFM & Dipartimento di Fisica, Universita di Trento, Via Sommarive 14, 38050 Povo, Trento, Italy, ⁽²⁾INFM & Dipartimento di Fisica, Universita di Catania, Corso Italia 57, 95129 Catania, Italy
- G-III.4** 15:15 ELECTROLUMINESCENCE MICROSCOPY AND SPECTROSCOPY OF SILICON NANOCRYSTALS IN THIN SiO₂ LAYERS, **J. Valenta***, N. Lalic and J. Linnros, Department of Electronics, Royal Institute of Technology, Electrum 229, 164 40 Kista - Stockholm, Sweden, *Permanent address: Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic
- G-III.5** 15:30 QUANTUM CONFINEMENT AND RECOMBINATION DYNAMICS IN SILICON NANOCRYSTALS EMBEDDED IN Si/SiO₂ SUPERLATTICES, **F. Iacona**, CNR-IMETEM, Stradale Primosole 50, 95121 Catania, Italy, G. Franzo', V. Vinciguerra and F. Priolo, INFM and Dipartimento di Fisica dell'Universita, Corso Italia 57, 95127 Catania, Italy
- G-III.6** 15:45 PHOTO- AND ELECTROLUMINESCENCE FROM Si/SiO₂ SUPERLATTICES, P. Photopoulos, **A.G. Nassiopoulou** and D. Kouvatso, IMEL/NCSR Demokritos, P.O.Box 60228, 153 10 Aghia Paraskevi, Athens, Greece

16:00 **BREAK**

Session IV - Si Optoelectronics 2

- G-IV.1** 16:30 **Invited** SILICON MICROPHOTONICS, **A. Polman** and P.G. Kik, FOM-Institute AMOLF, Amsterdam, The Netherlands, S. Coffa, CNR-IMETEM, Catania, Italy
- G-IV.2** 17:00 1.54 μm LIGHT EMITTING DEVICES BASED ON Er/O-DOPED Si LAYERED STRUCTURES GROWN BY MOLECULAR BEAM EPITAXY, **W.-X. Ni**, C.-X. Du, F. Duteil and G.V. Hansson, Dept of Physics, Linkoeping University, 581 83 Linkoeping, Sweden
- G-IV.3** 17:15 HIGH EFFICIENCY PHOTODETECTORS BASED ON HIGH QUALITY EPITAXIAL GERMANIUM GROWN ON SILICON SUBSTRATES, **H.-C. Luan**, K. Wada and L. C. Kimerling, Department of Materials Science & Engineering Massachusetts Institute of Technology, Cambridge MA 02139, USA, G. Masini, L. Colace and G. Assanto, Dipartimento di Ingegneria Elettronica and INFM-RM3, Universita 'Roma Tre', Via Vasca Navale 84, 00146 Roma, Italy
- G-IV.4** 17:30 OPTICAL, ELECTRICAL AND MORPHOLOGICAL CHARACTERIZATION OF POROUS SILICON COATINGS FOR SOLAR CELLS, **R.J. Martin-Palma**^(1,2), L. Vazquez⁽²⁾, P. Herrero⁽²⁾, J.M. Martinez-Duart^(1,2), M. Schnell⁽³⁾, S. Schaefer⁽³⁾, ⁽¹⁾Departamento de Fisica Aplicada, C-12, Universidad Autonoma de Madrid, 28049 Cantoblanco, Madrid, Spain, ⁽²⁾Instituto de Ciencia de Materiales de Madrid (CSIC), 28049 Cantoblanco, Madrid, Spain, ⁽³⁾Fraunhofer Institute for Solar Energy Systems, Oltmannsstr. 5, 79100 Freiburg, Germany

- G-IV.5** 17:45 PHOTOVOLTAIC PROPERTIES OF A NOVEL STAIN ETCHED POROUS SILICON AND ITS APPLICATION IN PHOTSENSITIVE DEVICES, B. Unal, A.N. Parbukov, G. Kartopu and S.C. Bayliss, Solid State Research Centre, Faculty of Applied Sciences, De Montfort University, The Gateway, Leicester, LE1 9BH, UK
- G-IV.6** 18:00 DISCRETE AND INTEGRATED Si-BASED OPTOELECTRONIC DEVICES: STATE-OF-THE-ART AND APPLICATIONS, S. Coffa, S. Libertino, CNR-IMETEM, Stradale Primosole 50, I95121 Catania, Italy, M. Saggio and F. Frisina, STMicroelectronics, Stradale Primosole 50, I95121 Catania, Italy
- G-IV.7** 18:15 VISIBLE LIGHT EMISSION FROM Si-NANOCRYSTALLITE COMPOSITES VIA REACTIVE EVAPORATION OF SiO, U. Kahler and H. Hofmeister, Max-Planck Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany

Wednesday May 31, 2000

Mercredi 31 mai 2000

Afternoon

Après-midi

Session V - Organic

- G-V.1** 14:00 **Invited** HYBRID SEMICONDUCTOR POLYMER RESONANT GRATING WAVEGUIDE STRUCTURES, **A. A. Friesem** and G. Levy-Yurista, Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot 76100, Israel, E. Pawlowski, L. Kuller, R. Ludwig and H. G. Weber, Heinrich-Hertz-Institut für Nachrichtentechnik Berlin GmbH, Einsteinufer 37, 10587 Berlin, Germany, A. Donval, E. Toussaere and J. Zyss, Laboratoire de Photonique Quantique et Moléculaire, (UMR CNRS # 8537), Ecole Normale Supérieure de Cachan, 61 av. du président Wilson, 94235 Cachan, France
- G-V.2** 14:30 **Invited** OPTOELECTRONIC DEVICES BASED ON HYBRID ORGANIC-INORGANIC STRUCTURES, **N. Tessler**, Electrical Engineering Dept., Technion, Haifa 3200, Israel
- G-V.3** 15:00 1.5µm ELECTROLUMINESCENCE FROM ORGANIC LIGHT EMITTING DIODES INTEGRATED ON SILICON SUBSTRATES, R.J. Curry and W.P. Gillin, Dept. of Physics, Queen Mary and Westfield College, University of London, London E1 4NS, U.K. and A.P. Knights and R. Gwilliam, SCRIBA, University of Surrey, Guildford, Surrey GU2 5XH, UK
- G-V.4** 15:15 HYBRID POLYMER-ON-GLASS INTEGRATED OPTICAL DIFFRACTIVE STRUCTURES FOR WAVELENGTH DISCRIMINATION, R. Shechter, E. Millul and A. A. Friesem, Weizmann Institute of Science and V. Weiss and Y. Amitai, ELOP Electrooptics Industries, POB 1165, Rehovot 76111, Israel
- G-V.5** 15:30 HYPERBRANCHED POLYMERS FOR PHOTONIC APPLICATION, C. Pitois, A. Hult, Department of Polymer Technology, Royal Institute of Technology, 100 44 Stockholm, Sweden, D. Wiesmann, IBM Zurich Research Laboratory, 8803 Rüschlikon, Switzerland, M. Lindgren, Division of Laser Systems, Defence Research Establishment (FOA32), P.O. Box 1165, 581 11 Linköping, Sweden
- G-V.6** 15:45 CARBAZOLE- AND TRIPHENYLAMINE-CONTAINING HIGH-TG POLYMERS FOR PHOTOREFRACTIVE APPLICATIONS, E. Hattemer, R. Zentel, Department of Chemistry and Institute of Materials Science, University of Wuppertal, Gauss-Str. 20, 42097 Wuppertal, Germany, E. Mecher, K. Meerholz, Department of Physical Chemistry, LMU Munich, Butenandtstr. 5-13 (Haus E), 81377 Munich, Germany
- G-V.7** 16:00 EXAMINATION OF THE STRUCTURE OF SOL-GEL DERIVED MATRICES FOR OPTOELECTRONIC SENSORS, A. Ulatowska and H. Podbielska, Bio-Optics Group, Institute of Physics Wrocław University of Technology, Wrocław, Poland
- 16:15 **BREAK**
- 16:45 **POSTER SESSION I**

Silicon

- G/PI.1** TRANSIENT ELECTROLUMINESCENCE OF AVALANCHE POROUS SILICON LIGHT EMITTING DIODES, S. Lazarouk, P. Jaguiro, S. Katsouba, Belarusian State University Informatics and Radioelectronics, P. Browka 6, 220027, Minsk, Belarus and F. Ermolitski, S. Melnikov, A. Prohorenko, Institute of Applied Physic Problems, Kurchatova 7, 220064 Minsk, Belarus
- G/PI.2** LUMINESCENCE PROPERTY OF Si NANOCRYSTALLITES ON Si SUBSTRATE FABRICATED BY PULSED LASER DEPOSITION, Sang Hyuck Bae⁽¹⁾, Sang Yeol Lee⁽¹⁾, Won Seok Lee⁽²⁾, Seongil Im⁽³⁾, ⁽¹⁾Department of Electrical and Computer Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea, ⁽²⁾Institute of Physics and Applied Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul 120-749, Korea, ⁽³⁾Department of Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul 120-749, Korea
- G/PI.3** STUDY OF THE TRANSITION PROCESSES IN POROUS SILICON USING TIME-RESOLVED PHOTOLUMINESCENCE MEASUREMENTS COMBINED WITH CONTINUOUS IRRADIATION OF SAMPLE, Bui Huy, Phi Hoa Binh, Pham Van Hoi, Dao Tran Cao, Vu Duc Thinh, Institute of Materials Science, NCST of Vietnam, Hoang Quoc Viet Road, Cau Giay Dist, Hanoi, Vietnam, Vinh Le Thanh, Institut d'Electronique Fondamentale, UMR-CNRS 8622, Bâtiment 220, Université Paris-Sud, 91405 Orsay Cedex, France
- G/PI.4** SILICON INTEGRATED OPTRONIC INTERCONNECTS WITH INCREASED EFFICIENCY ALUMINA WAVEGUIDE, S. Lazarouk, P. Jaguiro, A. Leshok, V.E. Borisenko, Belarusian State University Informatics and Radioelectronics, P. Browka 6, 220027, Minsk, Belarus and S. Shvedov, V. Stanovski, V. Vysotzki, Research and Design Company Belmicrosystems, Minsk, 220600, Belarus
- G/PI.5** A POROUS SILICON LED BASED ON A STANDARD BCD TECHNOLOGY, G. Barillaro, F. Pieri, Dipartimento di Ingegneria dell' Informazione: Elettronica, Informatica, Telecomunicazioni, Università di Pisa, Via Diotisalvi 2, 56126 Pisa, Italy, U. Mastromatteo, STMicroelectronics, Via Tolomeo 1, 20010 Cornaredo (MI), Italy
- G/PI.6** PHOTODETECTORS METAL/PS/C-SI BASED OF OXIDIZED AND NON OXIDIZED POROUS SILICON, L.A. Balagurov, A.F. Orlov, E.A. Petrova, D.G. Yarkin, S.Ya. Andrushin, Institute of Rare Metals, B. Tolmachevsky per. 5, Moscow, 109017, Russia
- G/PI.7** LUMINESCENCE OF SILICON NANOSTRUCTURED BY IRRADIATION WITH HEAVY IONS, D.I. Tetelbaum, S.A. Trushin, Physico-Technical Research Institute of Nizhnii Novgorod State University, Gagarin prospect 23/3, 603600 Nizhnii Novgorod, Russia; Z.F. Krasil'nik and D.M. Gaponova, Institute of Physics for Microstructures, GSP – 105, 603600 Nizhnii Novgorod, Russia
- G/PI.8** PHOTOELECTRICAL PROPERTIES OF GaSe/porSi/Si DOUBLE HETEROSTRUCTURES, V.P. Savchyn, L.S. Monastyrskii, V.B. Kytsai, P.P. Parandii Physical Department, Lviv National University, 50 Dragomanov str., 79005 Lviv, Ukraine
- G/PI.9** STARK EFFECT STUDIED IN STRAINED Si/SiGe HETEROSTRUCTURES, F. Ben Zid, A. Bhourri and M. Said, Laboratoire de Physique Quantique, Département de Physique, Faculté des Sciences, Monastir 5000, Tunisia, H. Mejri, Laboratoire de Physique des Semiconducteurs, Département de Physique, Faculté des Sciences, Monastir 5000, Tunisia, J.L. Lazzari, CRMC2-CNRS, Campus de Luminy, Case 913, 13288 Marseille Cedex 9, France
- G/PI.10** NANOSCALE WHITE LIGHT EMITTING STRUCTURES BY FOCUSED ION IMPLANTATION IN c-Si, H. R. oken, H.H. Bukow, J. Meijer, A. Stephan, U. Weidenmüller, C. Rolfs, Institut für Physik mit Ionenstrahlen, Ruhr-Universität Bochum, 44780 Bochum, Germany
- G/PI.11** VISIBLE LUMINESCENCE IN Si/SiO₂ SUPERLATTICES: ROLE OF CONFINED AND DEFECT STATES, E. Degoli and S. Ossicini, Istituto Nazionale per la Fisica della Materia (INFN) and Dipartimento di Fisica, Università di Modena e Reggio Emilia, Via Campi 213/A, 41100 Modena, Italy
- G/PI.12** OPTICAL PROPERTIES OF ISOSTRUCTURAL b-FeSi₂ AND OsSi₂, D. Migas and Leo Miglio, INFN and Dipartimento di Scienza dei Materiali, Università degli studi di Milano-Bicocca, Via Cozzi 53, 20125 Milano, Italy, W. Henrion, M. Rebien and H. Lange, Hahn-Meitner-Institute Berlin GmbH, Abteilung Photovoltaik, Rudower Chaussee 5, 12489 Berlin, Germany, V.L. Shaposhnikov, A.B. Filonov and V.E. Borisenko, Belarusian State University of Informatics and Radioelectronics, P. Browka 6, Minsk 220027, Belarus

- G/PI.13** ENHANCEMENT OF THE INTENSITY OF VIOLET AND GREEN PHOTOLUMINESCENCE FROM Ge⁺-ION IMPLANTED SiO_xN_y FILMS CAUSED BY HYDROSTATIC PRESSURE DURING ANNEALING, I.E.Tyschenko, K.S.Zhuravlev, E.N.Vandyshv, Institute of Semiconductor Physics, Novosibirsk, 630090, Russia, A.Misiuk, Institute of Electron Technology, Al.Lotnikow 46, Warsaw, Poland, L.Rehohle, W.Skorupa, Institute of Ion Beam Physics and Materials Research, Research Center Rossendorf, Inc. POB 510119, 01314 Dresden, Germany
- G/PI.14** PHOTO- AND ELECTROLUMINESCENCE FROM a-Si/SiO_xN_y MULTILAYERS, A.Malinin, V.Ovchinnikov, S.Novikov, O.Kilpelo and J.Sinkkonen, Electron Physics Laboratory, Department of Electrical and Communications Engineering, Helsinki University of Technology, P.O. Box 3000, 02015 HUT, Finland
- G/PI.15** OPTICAL PROPERTIES OF SEMICONDUCTING Ru₂Si₃, V.L. Shaposhnikov, L.I. Ivanenko, V.E. Borisenko, Belarusian State University of Informatics and Radioelectronics, P. Browka 6, 220027 Minsk, Belarus
- G/PI.16** APPEARANCE OF DIRECT BAND GAP IN SILICON AND GERMANIUM NANOSIZE SLABS, A.N. Kholod, V.E. Borisenko, Belarusian State University of Informatics and Radioelectronics, 220027 Minsk, Belarus, A. Saul, F. Arnaud d'Avitaya, Centre de Recherche sur les Mécanismes de la Croissance Cristalline, 13288 Marseille, France, J. Fuhr, Centro Atomico Bariloche and Instituto Balseiro, 8400 Bariloche, Argentina
- G/PI.17** NOVEL APPLICATION OF a-Si:H/c-Si THIN FILM STRUCTURES, Yu.A. Nikolaev, Yu.V. Rud', E.I. Terukov, A.F. Ioffe Physicotechnical Institute, Russian Academy of Sciences, 194021 St.Petersburg, Russia and V.Yu. Rud', St.Petersburg State Technical University, 195251 St.Petersburg, Russia
- G/PI.18** THE WHITE ELECTROLUMINESCENCE FROM a-SiN_x: THIN FILM DEVICE, Zingway Pei, Y.R. Chang, H.L. Hsiao and H.L. Hwang, Dept. of Electrical Engineering, Tsing Hua University, Sec 2, Kuang Fu Rd 101, Hsin-Chu 30043, Taiwan R.O.C.
- G/PI.19** LUMINESCENCE OF SILICON THIN FILM AND SiGe MULTIPLE QUANTUM WELLS REALISED ON SOI, V. Calvo, D. Sotta, H. Ulmer, E. Hadji, N. Magnea, DRFMC/SP2M/SINAPS CEA Grenoble, 17 rue des Martyrs, 38054 Grenoble France, F. Dumont, H. Moriceau, LETI, DMITEC, CEA Grenoble, 17 rue des Martyrs, 38054 Grenoble France. C. Hernandez, Y. Campidelli, France Telecom-CNET, B.P. 98, 38243 Meylan Cedex France
- G/PI.20** PHOTOLUMINESCENCE PROPERTIES OF SILICON IMPLANTED WITH HYDROGEN IONS, K.S.Zhuravlev, I.E.Tyschenko, V.P.Popov, Institute of Semiconductor Physics, Novosibirsk, 630090, Russia, I.I.Morosov, Institute of Nuclear Physics, Novosibirsk, 630090, Russia, A.Misiuk, Institute of Electron Technology, Al.Lotnikow 46, Warsaw, Poland
- G/PI.21** SPECTROSCOPIC ELLIPSOMETRY OF NANOCOMPOSITE Si:H LAYERS FORMED BY HIGH-DOSE IMPLANTATION OF SILICON, E.V.Spesivtsev, S.V.Rykhlytsky, L.N.Safronov, V.P.Popov, V.I.Obodnikov, I.V.Antonova, Institute of Semiconductor Physics, RAS, 630090, Lavrentieva 13, Novosibirsk, Russia, I.I.Morosov, Institute of Nuclear Physics, 630090 Novosibirsk, Russia
- G/PI.22** VISIBLE LUMINESCENCE IN SiO_x LAYERS PREPARED BY THERMAL EVAPORARION, W.S. Lee, M.S. Oh, S. Im, Institute of Physics and Applied Physics, Yonsei University, Seoul 120-749, Korea, S.H. Bae, S.Y. Lee, Department of Electrical Engineering, Yonsei University, Seoul 120-749, Korea and J.H. song, Advanced Analysis Center, Korea Institute of Science and Technology, Seoul 130-650, Korea
- G/PI.23** LOW-LOSS OXIDIZED POROUS SILICON WAVEGUIDES, G. Lamedica, M. Balucani, V. Bondarenko and A. Ferrari, Unit of Research E6 INFM, University of Rome 'La Sapienza', Via Eudossiana 18, 00184 Roma, H.F. Bulhuis, F.M. van der Vliet and H. van Weerden, BBV Software BV, Hengelosestraat 705, 7521PA Enschede, The Netherlands, J.E. Broquin and G. Vitrant, Institut National Polytechnique de Grenoble, Avenue Felix Viallet 46, 38031 Grenoble, France, L. Dolgyi, N. Vorozov and V. Yakovtseva, Belarussian State University of Informatics and Radioelectronics, P.Brovka 6, 220027 Minsk, Belarus
- G/PI.24** Er-DOPED OXIDIZED POROUS SILICON WAVEGUIDES, L. Dolgyi, N. Vorozov and V. Yakovtseva, Belarussian State University of Informatics and Radioelectronics, P.Brovka 6, 220027 Minsk, Belarus, N.Kazuchits, S. Volchek, Belarussian State University, Skorina Ave. 4, 220050 Minsk, Belarus, M. Balucani, V. Bondarenko, G. Lamedica and A. Ferrari, Unit of Research E6 INFM, University of Rome "La Sapienza", Via Eudossiana 18, 00184 Roma, Italy

- G/PI.25** PHOTOLUMINESCENT PROPERTIES OF POROUS SILICON PREPARED ON ION-IMPLANTED SI WAFERS, A. G. Rozhin, N. I. Klyui, V. G. Litovchenko, V. P. Melnik, B. N. Romanyuk Institute of Semiconductor Physics, 45 prospect Nauki, 252028, Kiev, Ukraine, Y. P. Piryatinskii, Institute of Physics, 46 prospect Nauki, 252022, Kiev, Ukraine
- G/PI.26** POROUS Si LEDS - MECHANISMS IN THE OPERATION, I. Barsony, T. Mohacsy, P. Varga and K. Molnar, Res.Inst.Tech. Phys. & Mat. Sci. - MFA, P.O.Box 49, 1525 Budapest, Hungary
- G/PI.27** TWO-PHOTON EXCITATION OF SILICON NANOCRYSTALS, J. Diener, D. Kovalev, G. Polisski and F. Koch, Technische Universitaet Muenchen, Physik-Department E16, 85747 Garching, Germany
- G/PI.28** OPTICAL PROPERTIES OF BETA IRON DISILICIDE PRECIPITATE LAYERS IN SILICON, B. Schuller, R. Carius, S. Lenk, S. Mantl, Institut fuer Schicht- und Ionentechnik, Forschungszentrum Juelich, 52425 Juelich, Germany
- G/PI.29** THE PROPERTIES OF AMORPHOUS SILICON THIN FILMS PRODUCED IN NON-STEADY-STATE PLASMA, Yu.A. Nikolaev, O.I. Konkov, E.I. Terukov, M.M.Kazanin, I.N.Trapeznikova, A.F. Ioffe Physico-Technical Institute, 194021 S. Petersburg, Politechnicheskaya 26, Russia, K.V. Koughia, Pediatric Medical Academy, 194100 S. Petersburg, Litovskaya 2, Russia
- G/PI.30** NANO-Si BASED COMPOSITES WITH DIFFERENT MATRICES: DETECTION OF THE ROLE OF NANO-Si /MATRIX INTERFACES IN PHOTO/ELECTROLUMINESCENCE SPECTRA, P.Zolotareenko, S.Zankovich, S.Putselyk, A.Gorchinskiy, G.Popova, Yu.Boyko, A.Yurachkovkiy, E.Buzaneva, Kyiv Taras Shevchenko University, 64 Volodimirskaya str., Kyiv, Ukraine, A.Zhugaevich, Institute of Physics, 45, Nauki Prosp. 01028 Kyiv, Ukraine, S.Bayliss Solid State Research Center, De Montfort University, LE1 9BH Leicester, UK, S.Lazarouk BSUIR, Brovki Str. 6, 220600 Minsk, Belarus, I.Kleps National Institute for Research and Development in Microtechnologies (IMT) P.O. Box 38-160, Bucharest, Romania, V.Pokalyakin, G.Stepanov, Institute of Radio Engineering and Electronics of RAS, Mohovaja 11, Moscow, Russia
- G/PI.31** SILICON SOLAR CELLS WITH POROUS LAYER BY STAIN ETCHING, M. Lipinski, P. Panek, Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 25 Reymonta Str., 30-059 Cracow, Poland, Z. Swiatek, E. Beltowska, R. Ciach, Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 25 Reymonta Str., 30-059 Cracow, Poland, H. Czternastek, University of Mining and Metallurgy, Faculty of Electronics, 78 Czarnowiejska Str., 30-054 Cracow, Poland
- G/PI.32** POROUS SILICON AND BURIED AMORPHISED LAYERS IN SILICON SOLAR CELLS - STRUCTURAL ASPECTS, Z. Swiatek, R. Ciach, Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 25 Reymonta Str., 30-059 Cracow, Poland, I. Fodchuk, Y. Fedkovych Chernivtsi State University, Department of Solid State Physics, 274012 Chernivtsi, 2 Kotsyubynsky Str., Ukraine, M. Lipinski, J. Bonarski, E. Beltowska-Lehman, Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 25 Reymonta Str., 30-059 Cracow, Poland
- G/PI.33** BLUE LUMINESCENCE FROM Si ION IRRADIATED SiO₂/Si/SiO₂ LAYERS, K.H. Chae, H.B. Kim, J.H. Son, W.S. Lee, S. Im and C.N. Whang, Atomic-scale Surface Science Research Center and Department of Physics, Yonsei University, Seoul 120-759, Korea, J.H. Song, Advanced Analysis Center, Korea Institute of Science and Technology, Seoul 130-650, Korea
- G/PI.34** Er/O DOPED SiGe ALLOY LAYERS GROWN BY MBE, F. Duteil, C.-X. Du, K. Jaerrendahl, W.-X. Ni and G.V. Hansson, Department of Physics and Measurement Technology, Linkoeping University, 581 83 Linkoeping, Sweden
- G/PI.35** TIME-RESOLVED PHOTOLUMINESCENCE FROM SILICON NANOCRYSTALS: DISPERSIVE VS. SINGLE EXPONENTIAL DECAY, J. Valenta* and J. Linnros, Department of Electronics, Royal Institute of Technology, Electrum 229, S-164 40 Kista - Stockholm, Sweden, *Permanent address: Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic
- G/PI.36** PHOTOLUMINESCENCE UPCONVERSION IN POROUS SILICON, J. Diener, D. Kovalev, H. Heckler, G. Polisski, N. Kuenzner and F. Koch, Technische Universitaet Muenchen, Physik-Department E16, 85747 Garching, Germany, Al. L. Efros and M. Rosen, Nanostructure Optics Section, Naval Research Laboratory, Washington DC 20375, USA

G/PI.37 NANO-Si BASED COMPOSITES WITH DIFFERENT MATRICES: DETECTION OF THE ROLE OF NANO-Si /MATRIX INTERFACES IN PHOTO/ELECTROLUMINESCENCE, P.Zolotareno, S.Zankovich, S.Putselyk, O.Doroshenko, A.Gorchinskiy, G.Popova, Yu.Boyko, A.Yurachkovkiy, E.Buzaneva, Kyiv Taras Shevchenko University, 64 Volodimirskaya str., Kyiv, Ukraine, I.Belousov, Institute of Metal Physics UNAS, 36, Vernadskii ave., 252680 Kiev, Ukraine, A.Zhugaevich, Institute of Physics, 45, Nauki Prosp. 01028 Kyiv, Ukraine, S.Bayliss Solid State Research Center, De Montfort University, LE1 9BH Leicester, UK, S.Lazarouk BSUIR, Brovki Str. 6, 220600 Minsk, Belarus, I.Kleps National Institute for Research and Development in Microtechnologies (IMT) P.O. Box 38-160, Bucharest, Romania, V.Pokalyakin, G.Stepanov, Institute of Radio Engineering and Electronics of RAS, Mohovaja 11, Moscow, Russia

Organics

G/PI.38 PHOTOINDUCED BIREFRINGENCE AND HOLOGRAPHIC GRATINGS IN DYE-DOPED ORMOSILS THIN FILMS, I. Marino, D. Bersani, P.P. Lottici, INFN and Physics Department, University, Parco Area delle Scienze 7/a, 43100 PARMA, Italy, A. Montenero, Chemistry Department, University, Parco Area delle Scienze 7/a, 43100 PARMA, Italy

G/PI.39 THE ROLE OF ORGANIC SYSTEMS IN ELECTRODEPOSITE FILMS, V.P. Kisel, Inst. of Solid State Physics, RAS, 142432 Chernogolovka, Moscow distr., Russia

G/PI.40 SPECTROSCOPIC INVESTIGATION ON CDS: Mn NANOCRYSTALS IN CONJUGATED POLYMER MATRIX, C. Dridi, M. Haouari, M. Ajroud, H. Ben Ouada and H. Mâaref, Département de Physique, Faculté des sciences de Monastir, 5000 Monastir, Tunisia, L. Saviot, G. Panzer and B. Champagnon, LPCML, Université Claude Bernard-Lyon1, Bd du 11 Novembre 1918, 69622 Villeurbanne Cedex, France

G/PI.41 ABSORPTION EXAMINATION IN SOL-GEL DERIVED MATRICES FOR OPTOELECTRONIC APPLICATIONS, A. Ulatowska⁽¹⁾, R. Kudrawiec⁽²⁾, H. Podbielska⁽¹⁾, L. Bryja⁽²⁾, J. Misiewicz⁽²⁾, ⁽¹⁾Bio-Optics Group and ⁽²⁾Group of Physics of Semiconductors, Institute of Physics Wrocław University of Technology, Wrocław, Poland

G/PI.42 POLY(P PHENYLENE VINYLENE) / POROUS GaP COMPOSITE MATERIAL, P. Le Rencu, T.P. Nguyen, M. Lekehal, J. Ip, IMN, Université de Nantes, 44322 Nantes Cedex 3, France, I.M. Tiginyanu, Technical University of Moldova, 2004 Chisinau, Moldova, A. Sarua and G. Irmer, Technische Universität, Bergakademie Freiberg, 09596 Freiberg, Germany

G/PI.43 COMPOSITIONALLY GRADED PV – STRUCTURES GROWTH BY A NEW LIQUID – SOURCES VERSION OF LIQUID PHASE ELECTROEPITAXY, V.A. Gevorkyan, Department of Radiophysics, Yerevan State University, 1 A. Manoukian str., Yerevan 375049, Republic of Armenia

Thursday June 1, 2000

Jeudi 1^{er} juin 2000

Morning

Matin

Session VI - New IR Lasers Sources (Material and Devices)

- G-VI.1** 8:30 **Invited** TOWARDS AN OPTICAL PARAMETRIC OSCILLATOR IN A GaAs-BASED WAVEGUIDE, **V. Berger**, A. De Rossi*, M. Calligaro, G. Leo*, X. Marcadet, J. Nagle, Laboratoire Central de Recherches Thomson CSF, Domaine de Corbeville, 91400 Orsay, France, *Permanent address: Terza University of Rome, Via della Vasca Navale 84, 00146 Rome, Italy
- G-VI.2** 9:00 **Invited** Sb BASED MID-INFRARED LASERS, **M.J. Yang**, J.R. Meyer, W.W. Bewley, C.L. Felix, I. Vurgaftman, R.E. Bartolo, and D.W. Stokes, Naval Research Laboratory, Washington, DC 20375, USA, H. Lee and R.U. Martinelli, Sarnoff Corporation, CN 5300, Princeton, NJ 08543-5300, USA
- G-VI.3** 9:30 (InGa)(NAs) STRUCTURES EMITTING IN 1 - 1.6 μm WAVELENGTH RANGE, **A. Mereuta**⁽¹⁾, S. Bouchoule⁽²⁾, I. Sagnes⁽¹⁾, F. Alexandre⁽²⁾, G. Le Roux⁽¹⁾ and A. Ougazzaden⁽³⁾, ⁽¹⁾Laboratoire Concepts et Dispositifs pour la Photonique, URA250 CENT/SNRS, 196 av. H.Ravera, BP 107, 92225 Bagneux Cedex, France, ⁽²⁾OPTO+, Groupement d'Intérêt Economique, Route de Nozay, 91460 Marcoussis, France, ⁽³⁾Now with Lucent Technologies, 9999 Hamilton Blvd, Brienigsville, PA 18103, USA
- G-VI.4** 9:45 OPTICAL CHARACTERIZATION OF LOW-ENERGY NITROGEN MOLECULAR-ION DOPED InGaAs, Y. Fukuzawa^(1,2), T. Shima⁽¹⁾, **Y. Makita**⁽¹⁾, S. Kimura⁽¹⁾, S. Tanoue⁽¹⁾ and Y. Nakamura⁽²⁾, ⁽¹⁾Electrotechnical Laboratory, 1-1-4 Umezono, Tsukuba 305-8568, Japan, ⁽²⁾Nippon Institute of Technology, 4-1 Gakuendai, Miyashiro, Minamisaitama 345-8501, Japan
- G-VI.5** 10:00 Mid-Ir (3.5 μm) ELECTROLUMINESCENCE FROM HEAVILY Fe²⁺ ION IMPLANTED SEMI-INSULATING InP, **A. Mazzone**, M. Troccoli, G. Scamarcio, INFN e Dipartimento di Fisica, Università di Bari, Bari, Italy, B. Fraboni, INFN e Università di Bologna, Bologna, Italy, F. Priolo, INFN e Università di Catania, Catania, Italy, A. Gasparotto, INFN e Università di Padova, Padova, Italy
- G-VI.6** 10:15 OPTICAL AND STRUCTURAL INVESTIGATION OF InAs/AlSb/GaSb HETEROSTRUCTURES FOR QUANTUM CASCADE LASER APPLICATION, **I. Prévot**, X. Marcadet, O. Durand, R. Bisaro, Laboratoire Central de Recherches Thomson-CSF, 91404 Orsay Cedex, France, F. Julien, Institut d'Electronique Fondamental, URA 22 CNRS, University Paris XI, 91405 Orsay, France
- 10:30 **BREAK**

Session VII - Quantum Cascade

- G-VII.1** 11:00 **Invited** NOVEL OPTOELECTRONIC DEVICES FOR FAR IR EMISSIONS, **A. Tredicucci**, Bell Laboratories, Lucent Technologies, 600 Mountain Avenue, Murray Hill, NJ 07974, USA
- G-VII.2** 11:30 **Invited** GaAs BASED QUANTUM CASCADE MICROCAVITIES, **G. Strasser**, S. Gianordoli, W. Schrenk, E. Gornik, Solid State Electronics Institute, Technical University Vienna, Floragasse 7, 1040 Vienna, Austria
- G-VII.3** 12:00 LOW WAVEGUIDE LOSSES (Al)GaAs QUANTUM CASCADE LASERS, **C. Becker**, H. Page, G. Glastre, M. Stellmacher, J. Nagle, C. Sirtori, Thomson-CSF, Laboratoire Central de Recherches, 91404 Orsay, France
- G-VII.4** 12:15 FACET TEMPERATURE MAPPING OF GaAs/AlGaAs QUANTUM CASCADE LASERS BY PHOTOLUMINESCENCE MICROPROBE, **V. Spagnolo**, M. Troccoli, G. Scamarcio, INFN, Physics Department, University of Bari, 70126 Bari, Italy, C. Becker, G. Glastre, C. Sirtori, Thomson-CSF, Laboratoire Central de Recherches, 91404 Orsay, France

G-VII.4 12:30

HOT ELECTRON DISTRIBUTION IN QUANTUM CASCADE AND SINGLE-STAGE GaAs/AlGaAs PERIODIC SUPERLATTICE STRUCTURES, M. Troccoli, G. Scamarcio, A. Valentini, G. Casamassima, INFN, Physics Dept. University of Bari, 70126 Bari, Italy, M. Striccoli, Centro laser, 70010 Valenzano (BA), Italy

12:45

LUNCH

Thursday June 1, 2000

Jeudi 1^{er} juin 2000

Afternoon

Après-midi

Session VIII - Devices

- G-VIII.1** 14:00 **Invited** 2D INTER-CHIP OPTICAL INTERCONNECT, **R. Baets**, L. Vanwassenhove, University of Gent - IMEC, Department of Information Technology (INTEC), Sint-Pietersnieuwstraat 41, 9000 Gent, Belgium
- G-VIII.2** 14:30 **Invited** OPTICALLY WRITTEN POLYMERS USED AS OPTICAL INTERCONNECTS AND FOR HYBRIDIZATION, **F. Tooley**, N. Suyal, J. Gourlay, A. Fritze, A. Walker and F. Breson, Department of Physics and CEE, Herriot-Watt University, Edinburgh EH14 4AS, UK
- G-VIII.3** 15:00 ELECTRIC-FIELD-POLED NONLINEAR WAVEGUIDES IN KTiOPO_4 , **D. Eger**, M.B. Oron, A. Raizman and M. Katz, SSP Group, Soreq NRC, Yavne 81800, Israel
- G-VIII.4** 15:15 OPTOELECTRONIC DEVICES FABRICATED FROM CVD DIAMOND FILMS, S.P. Lansley, H.J. Looi, O. Gaudin, M.D. Whitfield and **R.B. Jackman**, Electronic and Electrical Engineering, University College London, Torrington Place, London, WC1E 7JE, UK
- G-VIII.5** 15:30 NEAR INFRARED WAVEGUIDE PHOTODETECTORS BASED ON POLYCRYSTALLINE Ge ON SOI SUBSTRATES, G. Masini, **L. Colace** and G. Assanto, Dipartimento di Ingegneria Elettronica and INFM-RM3, Universita 'Roma Tre', Via Vasca Navale 84, 00146 Roma, Italy
- G-VIII.6** 15:45 SURFACE-BARRIER ITO/ SiO_x /Si OPTICAL SENSOR WITH INTERNAL GAIN, **M. Fernandes**, A. Fantoni, Yu. Vygranenko, R.Schwarz, M.Vieira Electronics and Communications Dept., ISEL, Lisboa, Portugal and C. Nunes Carvalho, CFM/UTL, Lisboa, Portugal
- 16:00 **BREAK**
- 16:30 **POSTER SESSION II**

Semiconductor Compounds

- G/PII.1** withdraw
- G/PII.2** PHOTORESPONSE SPECTRAL INVESTIGATIONS FOR ANISOTROPIC SEMICONDUCTOR InSe, Z.D.Kovalyuk, V.N.Katerinchuk and T.V.Betsa, Chernivtsi Department of the Institute of Materials Science Problems, National Academy of Sciences of Ukraine, Iryna Vilde St. 5, Chernivtsi 58001, Ukraine
- G/PII.3** OPTICAL PROPERTIES OF GaAs/GaAs_{1-x}P_x SUPERLATTICES, N.L. Dmitruk, T.A. Mikhailik, Institute of Semiconductor Physics, National Academy of Science of Ukraine, 41 Prospect Nauki, 03028 Kyiv, Ukraine, O.S. Gorea, State University of Moldova, A.Mateevich str. 60, Chisinau, 277009 Moldova and T.Wagner, LOT-Oriel GmbH, J.A.Woollam Co.Inc., Darmstadt, Germany
- G/PII.4** DLTS STUDY OF DEEP LEVELS IN GRIN-SCH-SQW GaAs/AlGaAs LASER DIODE STRUCTURES GROWN BY MBE, M.Kaniewska, D.Krynska, M.Wesolowski, Institute of Electron Technology, Al. Lotnikow 32/46, 02-668 Warsaw, Poland
- G/PII.5** EFFECT OF THE COOLING VELOCITY ON THE TRANSPORT PROPERTIES OF Al_xGa_{1-x}As:Si, A.Triki, F. Rzigua Ouaja and A.Selmi, Laboratoire de Pysique des Semiconducteurs, Département de Physique, Faculté des Sciences de Monastir, 5000 Monastir, Tunisia
- G/PII.6** ERBIUM-DOPED CRYSTALLINE YAG PLANAR AND RIDGE WAVEGUIDES ON QUARTZ AND SAPPHIRE SUBSTRATES: DEPOSITION AND MATERIAL CHARACTERIZATION, G. Facchini, A. Zappettini, A. Canali, M. Martinelli, CORECOM, Via Ampère 30, 20131 Milano, Italy and G. Gabetta, ENEL-SRI via Reggio Emilia, 39 20090 Segrate, Italy, G. Tallarida, Lab. MDM-INFM, Via C. Olivetti 2, 20041 Agrate Brianza, Italy
- G/PII.7** HETEROSTRUCTURES BASED ON GaAsP<Bi> SOLID SOLUTIONS L.S. Lunin, V.N. Lozovskii, A.V. Blagyn, D.L. Alfimova, South-Russian State Technical University, 132 Prosveshchenya Street, 346400 Novochoerkassk, Russia
- G/PII.8** SEMICONDUCTOR ELECTROLUMINESCENT STRUCTURES BY MEANS OF GRADED-BAND-GAP ENGINEERING, B.S. Sokolovskii, V.K. Pysarevskii and O.V. Nemolovskii, Institute of Applied Physics of Ivan Franko National University, 49 Gen. Chuprynka Str., 79044 Lviv, Ukraine
- G/PII.9** ITO THIN FILMS DEPOSITED BY RTE ON FLEXIBLE TRANSPARENT SUBSTRATES, C. Nunes Carvalho^(1,2), A Luis⁽²⁾, H. Godinho⁽²⁾, A. Amaral^(1,3) and G. Lavareda^(1,2), ⁽¹⁾CFM, Complexo I, IST-UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, ⁽²⁾Departamento de Ciencia dos Materiais, FCT-UNL, 2825 Monte de Caparica, Portugal, ⁽³⁾Departamento de F'sica, IST, Av. Rovisco Pais, 1049-001 Lisboa, Portugal
- G/PII.10** ALUMINIUM OXIDE FILM FOR 2D PHOTONIC STRUCTURE FORMATION, I. Mikulskas, S. Juodkazis, R. Tomasiunas, Institute of Material Science and Applied Research, Vilnius University, Sauletekio 10, 2040 Vilnius, Lithuania, A. Jagminas, Institute of Chemistry, Gostauto 9, Vilnius, Lithuania, S. Meskinis, Institute of Physical Electronics, University of Technology, Savanoriu 31, Kaunas, Lithuania and H. Misawa, Nitride Photonic Semiconductor laboratory, S-VBL and Graduate School of Emgineering, Tokushima University, 2-1 Minanijyosanjima, Tokushima 770-8506, Japan
- G/PII.11** ELECTRICAL PROPERTIES OF n-ZnSe SINGLE CRYSTALS DOPED WITH TRANSITION METALS, D. Nedeoglo, V. Kasiyan, N. Nedeoglo, Department of Semiconductor Physics, State University of Moldova, 60, A.Mateevich str., 2009 Kishinau, Moldova
- G/PII.12** IMPROVEMENT OF THE MACROSCOPIC PROPERTIES OF ITO DEPOSITED BY REACTIVE THERMAL EVAPORATION CONTROLLING THE EARLY STAGE GROWTH STRUCTURE, A. Amaral^(1,2), P. Brogueira⁽²⁾, C. Nunes Carvalho^(1,3) and G. Lavareda^(1,3), ⁽¹⁾Centro de F'sica Molecular, Complexo I, IST-UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, ⁽²⁾Departamento de Fisica, IST-UTL, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, ⁽³⁾Departamento de Ciencia dos Materiais, FCT-UNL, Quinta da Torre, 2825-114 Caparica, Portugal

- G/PII.13** FABRICATION AND CHARACTERIZATION OF $\text{Ga}_x\text{In}_{1-x}\text{N}$ NANOCCLUSERS IN 3D REGULAR OPAL MATRIX (PHOTONIC CRYSTAL), A.B. Pevtsov, V.Yu. Davydov, V.G. Golubev, N.A. Kartenko, D.A. Kurdyukov, N.V. Sharenkova, Ioffe Physico-Technical Institute, 194021 St.Petersburg, Russia, S.M. Samoilovich, Almaztechnocrystal company, 601600 Aleksandrov, Russia
- G/PII.14** LIQUID PHASE EPITAXY AND SOME PROPERTIES OF $(\text{Ge}_2)_{1-x}(\text{InP})_x$, $(\text{Ge}_2)_{1-x}(\text{ZnSe})_x$, $(\text{Ge}_2)_{1-x}(\text{CdTe})_x$ AND $(\text{GaAs})_{1-x-y}(\text{Ge}_2)_x(\text{ZnSe})_y$ THIN FILMS OF SOLID SOLUTIONS FOR OPTOELECTRONIC DEVICES, A.S.Saidov⁽¹⁾, A.Sh. Razzakov⁽¹⁾, A.A.Paiziev⁽²⁾, ⁽¹⁾Physical Technical Institute Uzbek Academy of Sciences, Mavlanov str.2 B, Tashkent 700084, Uzbekistan, ⁽²⁾Institute of Electronic Uzbek Academy of Sciences, F. Khodgaeva str.33, Academgorodok Tashkent 700143, Uzbekistan
- G/PII.15** INVESTIGATIONS ON SnS FILMS DEPOSITED BY SPRAY PYROLYSIS, P.Purandar Reddy⁽¹⁾, K.T.R. Reddy⁽¹⁾, R.W.Miles⁽²⁾ and P.K.Datta⁽²⁾, ⁽¹⁾Department of Physics, Sri Venkateswara University, Tirupati-517 502, INDIA, ⁽²⁾School of Engineering, University of Northumbria, Newcastle upon Tyne NE1 8ST, UK
- G/PII.16** REPLICATION TECHNOLOGY FOR PHOTONIC BANDGAP APPLICATIONS, V. Kopustinskas, V. Grigaliunas, S. Meskinis, Institute of Physical Electronics, Kaunas University of Technology, Savanoriu 271, 3009 Kaunas, Lithuania and I.Mikulskas, R. Tomasiunas, Institute of Materials and Applied Sciences, Vilnius University, Sauletekio 10, 2040 Vilnius, Lithuania
- G/PII.17** THERMALLY DETECTED OPTICAL ABSORPTION, REFLECTANCE AND PHOTO-REFLECTANCE STUDIES OF InAsP/InP QUANTUM WELLS GROWN BY GAS SOURCE MOLECULAR BEAM EPITAXY, P. Disseix⁽¹⁾, C. Payen⁽¹⁾, J. Leymarie⁽¹⁾, A. Vasson⁽¹⁾ and F. Mollet⁽²⁾, LASMEA, UMR CNRS 6602, 24 av. des Landais, 63177 Aubière Cedex, France, ⁽²⁾IEMN, UMR CNRS 9929, Av. Poincaré, BP 69, 59652 Villeneuve d'Ascq Cedex, France
- G/PII.18** PHOTOLUMINESCENT CHARACTERISTICS OF HETEROSTRUCTURES BASED ON PbS THIN FILMS, G. Khlyap, State Pedagogical University, 24 Franko str., Drogobych 82100, Ukraine
- G/PII.19** ANNEALING EFFECT ON THE PROPERTIES OF HEAVILY CARBON DOPED GaAs, A. Rebey, I. Moussa, L. Béji and B. El Jani, Laboratoire de Physique des Matériaux, 5000 Monastir, Tunisia, S. Laugt, CHREA-CNRS, 06560 Valbonne, France
- G/PII.20** PHOTOLUMINESCENCE STUDY OF VANADIUM DOPED GaAs GROWN BY MOVPE, A. Bchetnia, A. Rebey and B. El Jani, LMP, Faculté des Sciences, 5000 Monastir, Tunisia, J.L. Fave, J. Gernogora, GPS, 75251 Paris Cedex 05, France
- G/PII.21** THE $\text{InAs}_{1-x}\text{Px}(\text{Bi})/\text{InAs}$ THERMO – PV AND $\text{InSb}_{1-x}\text{As}_x(\text{Bi})/\text{InSb}$ PV STRUCTURES GROWTH BY LIQUID – PHASE ELECTROEPITAXY, K.M. Gambaryan, V.A. Gevorkyan, Department of Radiophysics, Yerevan State University, 1 A. Manoukian str., Yerevan 375049, Republic of Armenia
- G/PII.22** PREPARATION OF LEAD TELLURIDE THIN FILMS ON Si SUBSTRATES DOPED WITH Ga DURING THE FORMATION PROCESS, Y. A. Ugai, A. M. Samoylov, Yuri V. Synorov, M. K. Sharov, Voronezh State University, Universitetskaya Sq. 1, 394693 Voronezh, Russia
- G/PII.23** ELECTRICAL PARAMETERS AND IR SENSITIVITY OF DOPED WITH Ga BY TWO DIFFERENT METHODS LEAD TELLURIDE THIN FILMS ON Si SUBSTRATES, A. M. Khoviy, A. M. Samoylov, A. V. Arsenov, M. K. Sharov, Voronezh State University, Universitetskaya Sq. 1, 394693 Voronezh, Russia
- G/PII.24** REFRACTIVE INDEX MODIFICATION FROM COLOUR CENTRES IN DIELECTRIC CONFINING STRUCTURES, M. Montecchi⁽¹⁾, R.M. Montereali⁽²⁾, E. Nichelatti⁽¹⁾, ⁽¹⁾ENEA C.R. Casaccia, V. Anguillarese 301, 00060 Rome, Italy, ⁽²⁾ENEA C.R. Frascati, P.O.Box 65, 00044 Frascati (RM), Italy
- G/PII.25** METAL-INSULATOR TRANSITION IN TRANSPARENT TIN DIOXIDE THIN FILMS, B.N.Mukashev, S.M.Kikkarin, A.M.Mukhitdinov, M.F.Tamendarov, Institute of Physics and Technology, Ministry of Education and Science, Kazakstan
- G/PII.26** A NOVEL SELECTIVELY-DOPED $\text{AlGaAs}/\text{InGaAs}/\text{GaAs}$ PSEUDOMORPHIC HETEROSTRUCTURE, L. Bouzauene, L. Sfaxi and H. Mâaref, Laboratoire de Physique des Semiconducteurs, Faculté des Sciences de Monastir, Avenue de l'Environnement, 5000 Monastir, Tunisia

- G/PII.27** CARRIER DYNAMICS IN GaAs/Al_{0.46}Ga_{0.54}As QUANTUM WELL STRUCTURES GROWN BY MOLECULAR BEAM EPITAXY, S. Krauem, F. Hassen and H. Mâaref, Laboratoire de Physique des Semiconducteurs, Département de Physique, Faculté des Sciences de Monastir, Monastir 5000, Tunisia, X. Marie and E. Vanelle, Departement de Genie Physique, INSA, Avenue de Rangueil, 31077 Toulouse, France
- G/PII.28** UPCONVERTING PROPERTIES OF SiO₂ CERAMICS CONTAINING NANOCRYSTALS OF TiO₂ PHASES, J. Silver, A. Newport, G. Fern, A. Vecht, R. Withnall, University of Greenwich, School of Chemical and Life Sciences, Wellington St., London, SE18 6PF, UK
- G/PII.29** DEVELOPMENT OF CaF₂ CRYSTAL AND APPLICATION, Yasunao Oyama, Optron Inc., 5-16 Hakusan 7-chome, Toride-shi, Ibaraki, Japan
- G/PII.30** OPTICAL STUDY OF INTERSUBBAND TRANSITIONS IN GaSb/AlGaSb SYSTEMS FOR QWIPS, R. Ferrini, G. Guizzetti, M. Patrini, INFN - Dip. di Fisica "A. Volta", Univ. di Pavia, Via Bassi 6, 27100 Pavia, Italy and S. Franchi, CNR-MASPEC Institute, Parco delle Scienze, 43010 Fontanini (PR), Italy
- G/PII.31** ION IMPLANTATION INDUCED PERSISTENT PHOTOCONDUCTIVITY IN CdS FILMS, K.L. Narayanan⁽¹⁾, R. Rajaraman⁽²⁾, M.C.Valsakumar⁽²⁾, K.G.M Nair⁽²⁾ and K.P. Vijayakumar⁽²⁾, ⁽¹⁾Nuclear Science Centre, New Delhi, Pin - 110 067, India, ⁽²⁾Cochin University, Cochin, 682 022, India, Materials Science Division, IGCAR, Kalpakkam, 638 102
- G/PII.32** COMPARATIVE MODELS FOR DIFFUSION OF Be IN InGaAs/InP EPITAXIAL HETEROSTRUCTURES, M. Ihaddadene⁽¹⁾, S. Koumetz⁽¹⁾, K. Ketata⁽¹⁾, M.Ketata⁽¹⁾ and C.Dubois⁽²⁾, LEMI-UPRES.EA.2654-IUT, Université de Rouen, 76821 Mont Saint Aignan, France, ⁽²⁾LPM-INSA de Lyon, France
- G/PII.33** SPECTROSCOPY AND LASER OPERATION OF Tm-DOPED MONOCLINIC CRYSTALS KY(WO₄)₂ AND KYb(WO₄)₂, S.N.Bagayev⁽¹⁾, S.M.Vatnik⁽¹⁾, A.P.Majorov⁽¹⁾, A.A.Pavlujk⁽²⁾, ⁽¹⁾Institute of Laser Physics SAB, Novosibirsk, Russia, ⁽²⁾Institute of Inorganic Chemistry SAB, Novosibirsk, Russia
- G/PII.34** STIMULATED EMISSION PROCESSES IN Zn_(1-x)CD(x)Se/ZnSe MULTI-QUANTUM WELLS, Chien-Chieh Lee, J.-Y.Yen, Department of Physics, Tamkang University, Tamsui, Taiwan R.O.C.
- G/PII.35** OPTIMUM OXYGEN CONCENTRATION FOR THE OPTOELECTRONIC PROPERTIES OF IR SENSITIVE VO_x FILMS, K.M.Park, S. Im, Institute of Physics and Applied Physics, Yonsei Univ., Seoul, 120-749, Korea, S. Yi, W.H. Ha, Department of Metallurgical Engineering, Yonsei Univ., Seoul 120-749, Korea, S.Moon, Korea Institute Science Technology, Seoul 130-650, Korea
- G/PII.36** PHOTONIC CIRCUITS INTEGRATED WITH CMOS COMPATIBLE PHOTODETECTORS, D. Cristea⁽¹⁾, M. Modreanu⁽¹⁾, F.Craciunoiu⁽¹⁾, I. Cernica⁽²⁾, ⁽¹⁾National Institute for R&D in Microtechnologies, PO Box 36-160, 72225 Bucharest, Romania, ⁽²⁾Microelectronica S.A., 72996 Bucharest, Romania
- G/PII.37** PHOTORESPONSE OF SI DETECTOR BASED ON N-ZnO/P-Si STRUCTURES, H.Y. Kim, K.H. Chae, C.N. Whang, J.H. Kim, Y.J. Kim, S. Im, Institute of Physics and Applied Physics, Yonsei Univ., Seoul 120-749, Korea
- G/PII.38** OPTICAL PROPERTIES OF CdTe NANOPARTICLE THIN FILMS, S. Tripura Sundari, Sharat Chandra and G. Raghavan, Materials Science Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, 603 102 Tamil Nadu, India
- G/PII.39** CONTROL OF THE GROWTH MORPHOLOGIES OF GaAs STRIPES GROWN ON PATTERNED SUBSTRATES BY HVPE, E. Gil-Lafon, J. Napierala, D. Castelluci, A. Pimpinelli, LASMEA UMR CNRS 6602, Université Blaise Pascal, Clermont-Ferrand, France , B. Gérard, THOMSON-CSF Laboratoire Central de Recherches, 91404 Orsay, France
- G/PII.40** OPTICAL AND ELECTROPHYSICAL PROPERTIES OF RAPIDLY GROWN KDP CRYSTALS FOR FREQUENCY CONVERSION APPLICATION, I. M.Pritula and Yu.N.Velikhov, Sci. Tech. Concern "Institute for Single Crystals", 60 Lenin Ave. 610001, Kharkov, Ukraine

G/PII.41 GAP EVOLUTION STUDY OF $\text{In}_{2x}\text{X}_{3-x}$ ($\text{X}=\text{O},\text{S},\text{Se},\text{Te}$) SEMICONDUCTORS, R. Robles and A. Vega, Departamento de Fisica Teorica, Atomica, Molecular y Nuclear, Universidad de Valladolid, Spain, A. Mokrani, Groupe de Physique des Solides pour l'Electronique, Universite de Nantes, France

- G/PII.42** MULTIFUNCTIONAL THERMOSTABLE OPTICAL ELEMENTS, O. Fedorenko, Y. Zagoruiko, N. Kovalenko
- G/PII.43** PHOTOLUMINESCENCE OF UNDOPED AND NEUTRON-TRANSMUTATION-DOPED InSe, A.A. Homs*, B. Mari, Department of Applied Physics, EUITI, Politechnic University of Valencia, Cami de Vera s/n, 46022 Valencia, Spain, *Permanent Address: Physics Faculty-IMRE, University of Havana, San Lazaro y L, Vedado 10400, Havana, Cuba
- G/PII.44** STRUCTURAL PROPERTIES OF MOVPE-GROWN ZnMgSe EPILAYERS ON (100)GaAs AND (100)InP, P. Prete, IME-CNR, Via Arnesano, 73100 Lecce, Italy, N. Lovergine, A.M. Mancini, INFN and Dipartimento di Ingegneria dell'Innovazione, Università di Lecce, Via Arnesano, 73100 Lecce, Italy and L. Tapfer, PASTIS-CNRSM, S.S. 7 "Appia", km 712, 72100 Brindisi, Italy
- G/PII.45** USING PARAMORPHIC GROWTH TO PRODUCE HIGH QUALITY FULLY RELAXED In_{0.65}Ga_{0.35}As ON InP, M. Boudaa, J.F. Damlencourt, J.L. Leclercq, P. Regreny, M. Gendry and G. Hollinger, Ecole Centrale de Lyon, LEOM, UMR CNRS 5512, 69131 Ecully, France
- G/PII.46** DEVELOPMENT OF LUMINESCENT MATERIALS BASED ON THE IODOCOPPER ANIONS AND THE BIG [METN(18-CROWN-6)M]^{N+} CATIONS (MET = RB, CS), S.G. Nedilko, O.V. Chukova, V.M. Kokozay, Yu.A. Rusanova, Taras Shevchenko Kyiv National University, Kyiv, Ukraine
- G/PII.47** ON THE DIFFUSION BEHAVIOR OF HYDROGEN IONS IN PROTON EXCHANGED LiNbO₃, M.K. Kuneva, S.H. Tonchev and Z.M. Levi, Bulgarian Academy of Sciences, Institute of Solid State Physics, 72 Tzarigradsko Chaussee Blvd, 1784 Sofia, Bulgaria
- G/PII.48** INVESTIGATION OF DIFFERENT MATERIALS AND TECHNOLOGICAL PROCESSES FOR AN INTEGRATED OPTO-MECHANICAL PRESSURE SENSOR, R. Muller⁽¹⁾, P. Obreja⁽¹⁾, V. Banu⁽²⁾, I. Pavelescu⁽¹⁾, D. Dascalu⁽¹⁾, ⁽¹⁾National Institute for Research and Development in Microtechnologies, PO Box. 38-160, 72225 Bucharest, Romania, ⁽²⁾Baneasa S.A., 32 Erou Iancu Nicolae Str. Bucharest, Romania
- G/PII.50** FABRICATION OF INTEGRATED OPTICAL WAVEGUIDES ON GaAsP/GaAs USING CHEMICAL BEAM EPITAXY AND ELECTRON CYCLOTRON RESONANCE PLASMA TECHNIQUE, P.L. Pernas, E. Ruiz, M.J. Hernandez, B.J. Garcia, J.L. Castado and J. Piqueras, Laboratorio de Microelectronica, Departamento de Fisica Aplicada CXII, Universidad Autonoma de Madrid, 28049 Madrid, Spain and J. Garrido, E.T.S. de Informatica, Universidad Autonoma de Madrid, 28049 Madrid, Spain

Friday June 2, 2000
Vendredi 2 juin 2000

Morning
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Session IX - Material (Growth)

- G-IX.1** 8:30 **Invited** NOVEL LOW-DIMENSIONAL OPTICAL DEVICES, **R. Cingolani**, University of Lecce, Italy
- G-IX.2** 9:00 INFLUENCE OF THE ANNEAL TEMPERATURE ON THE OPTICAL PROPERTIES OF 1.3 μM EMITTING QUANTUM DOTS, G. Saint-Girons, A. Mereuta, G. Patriarche, J.M. Gérard and I. Sagnes, Laboratoire Concepts et Dispositifs pour la Photonique, URA250 CNET/CNRS, 196 avenue Henri Ravéra, B.P. 107, 92225 Bagneux cedex, France
- G-IX.3** 9:15 IN-SITU CHEMICAL ETCHING AT GaInAs/GaAs QUANTUM WELL INTERFACES, E. Chirlas⁽¹⁾, X. Marcadet⁽¹⁾, J.-L. Guyaux⁽¹⁾, C. Grattepain⁽¹⁾, J. Massies⁽²⁾, Laboratoire Central de Recherches, THOMSON-CSF, 91404 Orsay Cedex, France, ⁽²⁾CRHEA/CNRS Sophia Antipolis, 06560 Valbonne, France
- G-IX.4** 9:30 HIGH QUALITY GaAs-RELATED LATERAL JUNCTIONS ON Si BY CONFORMAL GROWTH, E. Gil-Lafon, J. Napierala, D. Castelluci, A. Pimpinelli, LASMEA UMR CNRS 6602, Université Blaise Pascal, Clermont-Ferrand, France, B. Gérard, THOMSON-CSF Laboratoire Central de Recherches, 91 404 Orsay, France, J. Jimenez, Fisica de la Materia Condensada, ETSII, Universidad de Valladolid, Spain
- G-IX.5** 9:45 GROWTH OF GaInTlAs ALLOYS BY SSMBE, F. Sanchez-Almazan, M.Gendry, P.Regreny, E.Bergignat, G.Grenet, G.Hollinger. Ecole Centrale de Lyon-LEOM (UMR CNRS 5512), 69131 Ecully Cedex, France and J.Olivares, G.Bremond INSA de Lyon-LPM (UMR 5511), 69621 Villeurbanne Cedex, France and O.Marty, M.Pitaval. Université Lyon 1-LENAC, (UMR CNRS 5586) 69621 Villeurbanne Cedex, France
- G-IX.6** 10:00 CONTROLLING THE RESIDUAL STRESS AND DEFORMAION OF InP – BASED MICROMECHANICAL STRUCURES FOR OPTOELECTRONIC DEVICES, N. Chitica, B. Stalnacke, M. Strassner, Royal Institute of Technology, 164 40 Kista, Sweden and J. Daleiden, Institute of Microstructure Technology and Analytics, Kassel, Germany
- G-IX.7** 10:15 OPTIMIZATION OF SECOND-ORDER NONLINEARITY IN UV-POLED SILICA GLASS FILM, J. Khaled, T. Fujiwara and A.J. Ikushima, Toyota Technological Institute, Tempaku, Nagoya 468-8511, Japan
- 10:30 **BREAK**

Session X - Material (Characterisation)

- G-X.1** 11:00 **Invited** STRUCTURAL PECULIARITIES OF NITRIDES AND CONSEQUENCES ON THEIR OPTOELECTRONIC PROPERTIES, **N. Grandjean**, CRHEA, Valbonne, France
- G-X.2** 11:30 INVESTIGATION OF THE OPTICAL AND ELECTRO- OPTICAL (EO) PROPERTIES OF HEXAGONAL BORON NITRIDE THIN FILMS DEPOSITED BY PECVD TECHNIQUE, A. El-Yadouni⁽¹⁾, P. Thevenin⁽²⁾, A. Boudrioua⁽¹⁾, A. Bath⁽²⁾ and J.C. Loulergue⁽¹⁾, ⁽¹⁾Laboratoire Matériaux Optiques & Propriétés Spécifiques (MOPS), Centre Lorrain d'Optique et d'Electronique des Solides (CLOES), Université de Metz et Supélec, 2 rue E. Belin, 57070 Technopole 2000 Metz cedex 3, France, ⁽²⁾Laboratoire Interface et Composants Microélectronique (LICM), CLOES Université de Metz et Supélec, 2-rue E. Belin, 57070 Metz cedex 3, France
- G-X.3** 11:45 RAMAN STUDY OF $\text{Zn}_x\text{Be}_{1-x}\text{Se}$ SOLID SOLUTIONS, O. Pagès, M. Ajjoun, J.P. Laurenti, Institut de Physique, 1 Bd. Arago, 57078 Metz, France, D. Bormann, Equipe de Spectrométrie Raman, Laboratoire de Physico-Chimie des Interfaces et Applications, Université d'Artois, Rue Jean Souvraz, 62037 Lens, France, E. Tournié, C. Chauvet, Centre de Recherche sur l'Hétéroépitaxie et ses Applications (CRHEA-CNRS), Sophia Antipolis, Rue Bernard Gregory, 06560 Valbonne, France

- G-X.4** 12:00 EFFECT OF POST ANNEALING ON THE LIGHT EMISSION PROPERTY OF ZnO THIN FILMS ON Si, Sang Hyuck Bae⁽¹⁾, Sang Yeol Lee⁽¹⁾, Hyun Young Kim⁽²⁾, Seongil Im⁽³⁾, ⁽¹⁾Department of Electrical and Computer Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea, ⁽²⁾Institute of Physics and Applied Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea, ⁽³⁾Department of Physics, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea
- G-X.5** 12:15 GROWTH OF R.E. DOPED HIGH REFRACTIVE INDEX OXIDE FOR OPTICAL WAVEGUIDE APPLICATIONS, O. Pons-Y-Mol, E. Millon*, J. Perrière*, GPS Univ. Paris VII, Tour 23, 2 Place Jussieu, 75251 Paris, France, E. Antic, B. Viana, ENSCP, 11 rue P. et M. Curie, 75231 Paris, France, C. Belouet*, Alcatel CRC, route de Nozay, 91461 Marcoussis, France, *also in the “Groupement Université Paris VI – Alcatel”
- G-X.6** 12:30 STUDY OF PARAMETERS IMPORTANT FOR THE GROWTH OF SINGLE WALL CARBON NANOTUBES, E. Munoz⁽¹⁾, M.T. Martinez⁽¹⁾, W.K. Maser⁽¹⁾, A.M. Benito⁽¹⁾, G.F. de la Fuente⁽²⁾, J.L. Sauvajol⁽³⁾, A. Righi⁽³⁾, E. Anglaret⁽³⁾, ⁽¹⁾Instituto de Carboquímica, CSIC, Maria de Luna 12, 50015 Zaragoza, Spain, ⁽²⁾ICMA, CSIC-Univ. de Zaragoza, Maria de Luna 3, 50015 Zaragoza, Spain, ⁽³⁾GDPC, Université de Montpellier II, 34095 Montpellier, France

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