



Strasbourg (France)

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

SYMPOSIUM G

ZnO and related materials

Symposium Organizers :

Jürgen Christen, University Magdeburg, Germany

Bernard Gil, University Montpellier, France

Axel Hoffmann, Technical University Berlin, Germany

David C. Look, Wright State University, Dayton, USA

Takafumi Yao, Tohoku University, Sendai, Japan

Papers to be published in Superlattices and Microstructures

E-MRS 2005 Spring Meeting

SYMPOSIUM G

Tuesday, May 31, 2005
Mardi 31 mai 2005

Morning
Matin

Session I : Optical properties

Session chair : J. Christen

- G-I.01** 8:30 -Invited- ZnO – REDISCOVERED ONCE AGAIN
C. Klingshirn, H. Kalt, H. Priller, M. Decker, J. Brückner, J. Zeller, R. Hauschild, Institut für Angewandte Physik der Universität, D-76128 Karlsruhe, Germany
- G-I.02** 9:00 RESONANT COUPLING OF BOUND EXCITONS WITH LO PHONONS IN ZnO
S.J. Xu, S.L. Shi and S.-J. Xiong, Department of Physics and HKU-CAS Joint Laboratory on New Materials, The University of Hong Kong, Pokfulam Road, Hong Kong, China
- G-I.03** 9:15 IMPACT OF EXCESS EXCITATION ENERGY ON THE RECOMBINATION LIFETIMES OF BOUND EXCITONS IN ZnO EPILAYERS
F. Bertram, S. Giemsch, J. Christen A. Dadgar and A. Krost, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany
- G-I.04** 9:30 TIME RESOLVED PHOTOLUMINESCENCE OF ZnO / (Zn,Mg)O QUANTUM WELLS. INTERNAL ELECTRIC FIELD EFFECTS
T. Bretagnon, P. Valvin, P. Lefebvre, B. Gil, Groupe d'Etude des Semiconducteurs, CNRS, Université Montpellier II, Case Courrier 074, 34095 Montpellier Cedex 5, France and C. Morhain, Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, CNRS, Rue Bernard Grégory, 06560 Valbonne, France
- G-I.05** 9:45 CATHODOLUMINESCENCE CHARACTERIZATION OF HYDROTHERMAL ZNO CRYSTALS
J. Mass, M. Avella, J. Jiménez, Física de la Materia Condensada, ETSII, 47011 Valladolid, Spain; M. Callahan, E. Grant, K. Rakes, D. Bliss, Air Force Research Laboratory, Hanscom AFB, MA, USA; Buguo Wang, Solid State Scientific Corp., Nashua NH, USA
- G-I.06** 10:00 -Invited- OPTICAL PROPERTIES OF ZnO-BASED QUANTUM STRUCTURES
Takayuki Makino, Photodynamics Research Center, The Institute of Physical and Chemical Research (RIKEN), Aramaki aza Aoba 519-1399, Sendai 9800845, Japan
- 10:30 **BREAK**

Session II : Growth 1

Session chair : **B.K. Meyer**

- G-II.01** 11:00 -Invited- CURRENT STATUS OF ZnO MOVPE GROWTH
A. Dadgar, Otto-von-Guericke Universität Magdeburg, FNW-IEP, Postfach 4120, 39106 Magdeburg, Germany
- G-II.02** 11:30 GROWTH OF UNDOPED ZNO THIN FILMS ON R-SAPPHIRE SUBSTRATES USING PULSED LASER DEPOSITION
A. Meaney, J.-R. Duclere, E. McGlynn, J.-P. Mosnier, R. O'Haire, M.O. Henry, School of Physical Sciences, NCPST, Dublin City University, Glasnevin, Dublin 9, Ireland
- G-II.03** 11:45 HIGH-QUALITY ZnO LAYERS GROWN BY MBE ON SAPPHIRE
A. El-Shaer, A. Che Mofor, A. Bakin, M. Kreye, A. Waag Institute of Semiconductor Technology, Technical University Braunschweig, Germany
- G-II.04** 12:00 MOCVD OF PURE AND Ga-DOPED EPITAXIAL ZnO
A.R. Kaul, O.Yu. Gorbenko, A.N. Botev, V.S. Kalitka, Department of Chemistry, Lomonosov Moscow State University, 119992, Moscow, Russia
- G-II.05** 12:15 METAL ORGANIC CHEMICAL VAPOR DEPOSITION OF ZnO
Ming Pan(a), William Fenwick(a), Todd Steiner(a), Ali Asghar(a), Ian Ferguson(a,b), Rengarajan Varatharajan(c), Jeff Nause(c), Paul Fabiano(d) and Nada El-Zein(e), (a)School of ECE, Georgia Institute of Technology, Atlanta GA 30332, USA, (b)School of MSE, Georgia Institute of Technology, Atlanta GA 30332, USA, (c)Cermet Inc, 1019 Collier Rd, Atlanta GA 30318, USA, (d)VEECO, 394 Elizabeth Ave, Somerset NJ 08873, USA, (e)Akzo Nobel LLC, 1525 W. Van Buren St, Chicago IL 60607, USA
- G-II.06** 12:30 INFLUENCE OF PULSED LASER DEPOSITION (PLD) PARAMETERS ON THE H₂ SENSING PROPERTIES OF ZINC OXIDE THIN FILMS
N. Brilis(a), D. Tsamakis(a) and M. Kompitsas(b), (a)School of Electrical Engineering and Computer Science, National Technical University of Athens, Iroon Polytechniou 9 Zografou, 15773 Athens, Greece, (b)Theoretical and Phys./Chem. Institute, National Hellenic Research Foundation, Vas. Konstantinou Ave. 48, 116 35 Athens, Greece
- G-II.07** 12:45 REACTIVITY OF ZnO: IMPACT OF POLARITY AND NANOSTRUCTURE
Maria Losurdo, Maria M. Giangregorio, Pio Capezzuto, Giovanni Bruno, Institute of Inorganic Methodologies and of Plasmas, IMIP-CNR and INSTM UdR Bari, via Orabona, 4, 70126 Bari, Italy, Graziella Malandrino, Manuela Blandino, Ignazio L. Fragalà, Dipartimento di Scienze Chimiche, Università di Catania, and INSTM, UdR Catania, Viale A. Doria 6, 95125 Catania, Italy
- 13:00 **LUNCH**

Tuesday, May 31, 2005
Mardi 31 mai 2005

Afternoon
Après-midi

Session III : Nano Structures 1

Session chair : T. Makino

- G-III.01** 14:00 NEW NANOCRYSTALLINE COLORED OXYNITRIDES THIN FILMS FROM ZnO NANOCOLLOIDS
L. Spanhel, F. Grasset, Laboratoire "Verres et Céramiques" UMR UR1-CNRS 6512, Institut de Chimie Rennes, Université de Rennes 1, Campus de Beaulieu, CS74205, 35042 Rennes Cedex, France, S. Ababou-Girard, PALMS, UMR UR1-CNRS 6627, Université de Rennes 1, Campus Beaulieu, 35042 Rennes Cedex, France, D. Su, A. Klein, Department of Inorganic Chemistry, Fritz-Haber-Institut der MPG, Faradyweg 4-6, 14195 Berlin, Germany
- G-III.02** 14:15 PHOTOLUMINESCENCE AND EPR OF ZnO-LATEX COMPOSITES CRYSTALLIZED FROM AQUEOUS MEDIUM
R. Muñoz-Espí(a,b), G. Jeschke(a), I. Lieberwirth(a), C.M. Gómez(b), G. Wegner(a), (a)Max Planck Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany, (b)Institute of Materials Science, Univ. of Valencia, PO Box 22085, 46071 Valencia, Spain
- G-III.03** 14:30 SUBSTRATE INDEPENDENT HYDROTHERMAL GROWTH OF ZnO NANOWIRE
A. Sugunan, Department of Microelectronics, Asian Institute of Technology, Thailand, C. Warm Singh, National Electronics and Computer Technology Center, Thailand, M. Boman Angstrom laboratory, Department of Material Chemistry, Uppsala University, Sweden and J. Dutta, Department of Microelectronics, Asian Institute of Technology, Thailand
- G-III.04** 14:45 THE EPITAXIAL GROWTH OF ZNO FILM ON ZNO NANORODS
Soon-Hong Park(a), Sun-Hyo Kim(a), Sang-Wook Han(b), (a)Department of Material Science and Engineering, Pohang University of Science and Technology, Pohang 790-784, Korea, (b)Division of Science Education, Chonbuk National University, Jeonju 561-756, Korea
- G-III.05** 15:00 EPITAXIAL GROWTH, OPTICAL, AND ELECTRICAL PROPERTIES OF ZNO NANOWIRE ARRAYS
H. J. Fan(a), W. Lee(a), B. Fuhrmann(b), A. Dadgar(c), F. Bertram(c), K. Nielsch(a), A. Krost(c), J. Christen(c), M. Zacharias(a) (a) Max Planck Institute of Microstructure Physics, Halle, Germany, (b) The Interdisciplinary Center of Materials Science, Martin-Luther-Universität Halle, Germany (c) Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany
- G-III.06** 15:15 PHOTOPHYSICAL PROCESSES IN HYBRID BULK HETEROJUNCTIONS OF ZnO NANOPARTICLES AND CONJUGATED POLYMERS
Pieter A.C. Quist(a), Waldo J.E. Beek(b), Martijn M. Wienk(b), René A.J. Janssen(b), Tom J. Savenije(a) and Laurens D.A. Siebbeles(a), (a)Opto-Electronic Materials Section, DelftChemTech, Delft University of Technology, Mekelweg 15, 2629 JB Delft, The Netherlands, (b)Molecular Materials and Nanosystems, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
The work of P.A.C. Quist forms part of the research program of the Dutch Polymer Institute
- G-III.07** 15:30 COMPARISON OF TWO-STEP AND SINGLE-STEP GROWTH OF ZnO NANOWIRES USING THE VLS METHOD
Justyna Grabowska, Karuna Kar Nanda, Enda McGlynn, Martin O. Henry, Jean-Paul Mosnier, School of Physical Sciences / NCPST, Dublin City University, Glasnevin, Dublin 9, Ireland
- G-III.08** 15:45 SELF-ASSEMBLED GROWTH ZNO NANOSTRUCTURES FOR FUTURE ELECTRICAL AND OPTOELECTRONIC APPLICATION
G.W. Ho(a), A.S.W Wong(b), S.N. Cha(c), D.J. Kang(a), M.E.Welland(a), (a)Nanoscience Centre, University of Cambridge, 11 J.J. Thomson Ave, Cambridge CB3 0FF, U.K., (b)Department of Materials Science and Metallurgy, University of Cambridge, New Museum Site, Pembroke Street, Cambridge CB2 3QZ, U.K., (c)Department of Engineering, University of Cambridge, Trumpington Street, Cambridge CB2 1PZ, U.K.

16:00

BREAK

Session IV : Nano structures 2

Session chair : C. Klingshirn

- G-IV.1** 16:30 -Invited- ELECTRICAL PROPERTIES OF ZnO THIN FILMS AND OPTICAL PROPERTIES OF ZnO-BASED NANOSTRUCTURES
M. Grundmann, Universität Leipzig, Fakultät für Physik und Geowissenschaften, Institut für Experimentelle Physik II, Linnéstr. 5, 04103 Leipzig, Germany

17:00-19:00

POSTER SESSION 1

POSTER SESSION 1
Tuesday, May 31, 2005
17:00 – 19:00

- G/PI.01** ZnO Nanorods GROWN FROM NITROGEN-DOPED ZnO FILM ON (111) Si SUBSTRATE BY THERMAL ANNEALING IN N₂ AMBIENT
Y.F. Mei, G.G. Siu, Ricky K.Y. Fu, and Paul K. Chu, Dept. of Physics & Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, C.W. Lai, H.C. Ong, Department of Physics, The Chinese University of Hong Kong, Shatin, Hong Kong, China
- G/PI.02** CONTROL OF PROPERTIES AND STRUCTURE OF ZINC OXIDE THIN FILMS BY A WIDE VARIATION OF OXYGEN PRESSURE DURING REACTIVE MAGNETRON DEPOSITION AND BY POSTDEPOSITION ANNEALING
M. Vinnichenko(a,c), L. Poperenko(a), T. Lebyedeva(b), P. Shpylovyi(b), N. Shevchenko(c), A.Rogozin(c), V. Sudovtsova(a), A. Kolitsch(c), (a)Kyiv National Taras Shevchenko University, 01033 Kyiv, Ukraine, (b)Glushkov Institute of Cybernetics, National Academy of Sciences of Ukraine, 03680 Kyiv, Ukraine, (c)Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf, 01314 Dresden, Germany
- G/PI.03** ZnO TETRAPOD FORMATION IN Zn - O SYSTEM
A.Kh. Abduev, A.K. Akhmedov, A.Sh. Asvarov Institute of physics,DSC of RAS, Yaragscogo str.,94 Makhachkala, Dagestan 367003,Russia
- G/PI.04** GROWTH MECHANISMS FOR ZnO NANORODS FORMED BY PULSED LASER DEPOSITION
Ye Sun, Gareth M. Fuge and M.N.R. Ashfold, School of Chemistry, University of Bristol, Bristol BS8 1TS, U.K.
- G/PI.05** STRUCTURE AND FERROMAGNETISM OF Mn ION IMPLANTED ZnO THIN FILMS ON SAPPHIRE
G. Brauer, W. Anwand, and W. Skorupa, Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Rossendorf, Postfach 510119, 01314 Dresden, Germany, and H. Schmidt, M. Diaconu, M. Lorenz, and M. Grundmann, Institut für Experimentelle Physik II, Fakultät für Physik und Geowissenschaften, Universität Leipzig, Linnestr. 5, 04103 Leipzig, Germany
- G/PI.06** SYNTHESIS OF ZnO NANOPARTICLES FROM POLYMER PRECURSOR CONTAINING CARBOXYL GROUP
Guangqiang Lu, Ingo Lieberwirth, Gerhard Wegner, Max Planck Institute for Polymer Research, Ackermannweg 10, 55128, Mainz, Germany
- G/PI.07** CONTROL OF MORPHOLOGY OF ZnO NANORODS GROWN BY CHEMICAL VAPOR DEPOSITION WITH LASER ABLATION OF ZnO
Takashi Hirate, Takashi Kimpara and Tomomasa Satoh, Kanagawa University, Japan
- G/PI.08** NON-EQUILIBRIUM DEFECTS FORMED IN ZNO AND (ZN,MG)O FILMS STUDIED BY SOLID STATE DIFFUSION Naoki Ohashi(a), Haruki Ryoken(a,b), Isao Sakaguchi(a), Shunichi Hishita(a) and Hajime Haneda(a,b), (a)National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki, 305-0044 Japan, (b)Department of Applied Science for Electronics & Materials, Kyushu University, 6-1 Kasuga Koen, Kasuga, Fukuoka 816-8580, Japan
- G/PI.09** PIEZOELECTRIC CHARACTERISTICS OF ZnO FILMS GROWN BY PULSED LASER DEPOSITION FOR FILMS BULK ACOUSTIC
Gun Hee Kim, Hong Seong Kang, Sung Hoon Lim and Sang Yeol Lee, Department of Electrical and Electronic Engineering, Yonsei University, 134, Shinchon-dong, Seodaemooon-ku, 120-749, Seoul, Korea
- G/PI.10** ZnO NANOSTRUCTURES FORMED BY OFF-AXIS PULSED LASER DEPOSITION
Jong Hoon Kim, Hong Seong Kang, Kyung Ah Jeon, and Sang Yeol Lee, Department of Electrical and Electronic Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea
- G/PI.11** PROPERTIES OF ZnO FILMS GROWN BY CLOSE SPACED VAPOUR TRANSPORT (CSVT) ON SAPPHIRE SUBSTRATE
J.F. Rommeluère, M. Barbe, F. Jomard, A. Tromson-Carli, Y. Marfaing and P. Galtier, Laboratoire de Physique des Solides et de Cristallogénèse, CNRS, 1 Place Aristide Briand, 92195 Meudon Cedex, France and J. Mimila-Arroyo, Cinvestav-IPN, Mexico D.F., Mexico
- G/PI.12** OBTAINING OF P-TYPE ZNO SAMPLES IMPLANTED BY P+ IONS
L.T. Trapaidze, T.V. Butkhuzi, T.G. Khulordava, M.M. Sharvashidze, E.E. Kekelidze, L.G. Aptsiauri, D.N. Peikrisvili, G.G. Natsvlshvili, Dept. of Physics, Tbilisi State University, 3 Chavchavadze Avenue, 0128 Tbilisi, Georgia
- G/PI.13** EFFECTS OF LASER ABLATION IN FABRICATION OF ZNO NANORODS BY CHEMICAL VAPOR DEPOSITION
Hiroshi Miyashita, Tomomasa Satoh and Takashi Hirate, Kanagawa University, Japan
- G/PI.14** ELECTRONIC PROPERTIES OF ZNO SURFACES IN DEPENDENCE ON THE DEPOSITION PARAMETERS
Frank Säuberlich(a), Christoph Körber(a), Juan Angel Sans(b), Andreas Klein(1), (a)Surface Science Division, Institute of Materials Science, Darmstadt University of Technology, Petersenstr. 23, 64287 Darmstadt, Germany, (b)Institut de Ciència dels Materials, Departament de Física Aplicada, Universitat de València, Ed. Investigació, 46100 Burjassot, Spain

- G/PI.15** BRILLOUIN LIGHT SCATTERING CHARACTERIZATION OF THE ACOUSTIC WAVES VELOCITY IN ZNO/SI₃N₄/SI(100) SYSTEM
E. Céspedes, R. J. Jiménez-Riobóo, M. Vila and C. Prieto. Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas. Cantoblanco, 28049 Madrid, Spain
- G/PI.16** ZnO SINGLE CRYSTALS AND EPITAXIAL THIN FILMS STUDIED BY SECOND HARMONIC GENERATION AND PHOTOLUMINESCENCE
G. Buinitskaya, L. Kulyuk, V. Mirovitskiy, E. Rusu, Institute of Applied Physics, Academy str. 5, Kishinev, MD-2028, Moldova; E. Mishina, N. Sherstyuk, Moscow State Institute of Radioengineering, Electronics and Automation, prosp. Vernadskogo 78, Moscow 117454, Russia
- G/PI.17** k.P ENERGY-BAND PROPERTIES OF ZnO/Zn_{1-x}Mg_xO QUANTUM WELL HETEROSTRUCTURES
K. Zitouni and A. Kadri, Laboratoire d'Etude des Matériaux Optoélectronique & Polymères (L.E.M.O.P.), Department of Physics, University of Oran (Es-Senia), Oran 31100, Algeria, P. Lefebvre and B. Gil, Groupe d'Etudes des Semiconducteurs (G.E.S.) UMR-CNRS N°5650, Université de Montpellier II, 34095 Montpellier Cedex 5, France
- G/PI.18** MICROSCOPIC PHOTOLUMINESCENCE SPECTRA OF ZnO NANOCRYSTALS IN SiO₂ FILMS
A. Yamamoto, Y. Satake, Y. Taguchi, Graduate School of Materials Science, Nara Institute of Science and Technology, Takayama 8916-5, Ikoma, Nara 630-0192, Japan and Y. Kanemitsu, Institute for Chemical Research, Kyoto University, Uji, Kyoto 611-0011, Japan
- G/PI.19** EVALUATION OF THE FINE STRUCTURES OF ISOLATED ZNO NANOROD SINGLE-QUANTUM-WELL STRUCTURES USING NEAR-FIELD SPECTROSCOPY
T. Yatsui(a), M. Ohtsu(a,b), J. Yoo(c), S.J. An(c), and G.-C. Yi(c), (a)JST, Tokyo, 194-0004 Japan, (b)Univ. of Tokyo, Tokyo 113-8656, Japan, (c)National CRI Center for Semiconductor Nanorods and POSTECH, Gyeongbuk 790-784, Korea
- G/PI.20** INCORPORATION OF DOPANTS INTO THE LATTICE OF ZNO NANOPARTICLES TO CONTROL PHOTOACTIVITY
P. Casey, C.J. Rossouw, S. Boskovic, K. Lawrence and T.W. Turney, CSIRO Manufacturing and Infrastructure Technology, Private Bag 33, Clayton South, Victoria 3169, Australia
- G/PI.21** STRUCTURAL, OPTICAL, AND ELECTRICAL PROPERTIES OF HETEROSTRUCTURED n-ZnO/p-GaN THIN FILMS
Hye Sung Lee(a), Sejoon Lee(a), Sun Jae Hwang(a), Duck Nam Kim(a), Chang Seok Han(a), Deuk Young Kim(a), and Sung Jin Kim(b), (a)Department of Semiconductor Science, Dongguk University, Seoul 100-715, Korea, (b)ITSWELL Co. LTd., Chungbuk 368-880, Korea
- G/PI.22** EPITAXIAL GROWTH OF ZnO THIN FILMS BY MOCVD
Zhizhen Ye, Liping Zhu, Weizhong Xu, Yijia Zeng, Binghui Zhao, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, People's Republic of China
- G/PI.23** ATOMIC LAYER GROWTH OF ZnO THIN FILMS ON VARIOUS SUBSTRATES
K. Saito(a), A. Amano(a), E. Nakagomi(a), S. Yoshimura(a), K. Ishida(a), K. Takahashi(a), S. Kishimoto(b), T. Yamamoto(b), B. P. Zhang(c), (a)Teikyo Univ. Sci. Tech., 2525 Uenohara-cho, Yamanashi 409-0193, Japan, (b)Kochi Univ. Tech., 185 Tosayamada-cho, Kochi 782-8502, Japan, (c)Photodynamics Research Center, RIKEN, 519-1399 Aoba, Aramaki, Sendai 980-0845, Japan
- G/PI.24** IMPROVED ELECTRICAL PROPERTIES OF ZnO:Al TRANSPARENT CONDUCTING OXIDE FILMS USING A SUBSTRATE BIAS
D.G. Lim(a), D.H. Kim(a), J.K. Kim(a), O. Kwon(a), K.I. Park(b), B.S. Kim(b), S.W. Lee², M.W. Park(c) and D.J. Kwak(b), (a)Dept. of Electronic Engineering, Chungju National University, Chungbuk 380-702, Korea, (b)Dept. of Electrical Engineering, Kyungsoo University, Busan 608-736, Korea, (c)Dept. Advanced Materials Engineering, Kyungsoo University, Busan 608-736, Korea
- G/PI.25** ZINC OXIDE NANODOTS ON SILICON
K. Giannakopoulos, N. Boukos and A. Travlos, Institute of Materials Science, National Center for Scientific Research "Demokritos", 15310 Ag. Paraskevi, Athens, Greece
- G/PI.26** EFFECTS OF N DOPING ON MAGNETIC PROPERTIES OF (Zn,Mn)O THIN FILMS DEPOSITED BY RF MAGNETRON SPUTTERING
C. Liu, B. Xiao, F. Yun, H. Lee, Y.-T. Moon and H. Morkoç, Department of Electrical Engineering and Department of Physics, Virginia Commonwealth University, Richmond VA 23284, USA, M. Abouzaid and P. Ruterana, SIFCOM UMR 6176 CNRS-ENSICAEN 6, Boulevard du Marechal Juin, 14050 Caen Cedex, France
- G/PI.27** INFLUENCE OF GAS AMBIENT ON THE GROWTH AND ACTIVATION OF PHOSPHORUS DOPED P-TYPE ZNO
Dae-Kue Hwang, Jae-Hong Lim, Eun-Jeong Yang, Chang-Gu Kang and Seong-Ju Park, Department of Materials Science and Engineering & National Research Laboratory for Nanophotonic Semiconductor, Korea
- G/PI.28** TYPE CONVERSION OF ZNO THIN LAYERS GROWN BY PULSED LASER DEPOSITION
Min-Suk Oh, Sang-Ho Kim and Tae-Yeon Seong, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju 500-712, Korea

- G/PI.29** PREPARATION OF ZnO/ RARE EARTH HYDROXIDE COMPOSITE THIN FILMS BY AN ELECTROCHEMICAL METHOD
A. Goux, T. Pauporté, D. Lincot, Laboratoire d'Électrochimie et Chimie Analytique, UMR7575, École Nationale Supérieure de Chimie de Paris, 11 rue P. et M. Curie, 75231 Paris Cedex 05, France, J. Chivot, DPC/SCCME, Centre d'Etudes Nucléaires de Saclay, 91131 Gif-sur-Yvette cedex, France
- G/PI.30** IMPROVEMENT OF CRYSTALLINITY OF ZnO THIN FILM AND FREQUENCY CHARACTERISTICS OF FILM BULK ACOUSTIC WAVE RESONATOR BY DIFFERENT BUFFER LAYER THICKNESSES
Eung-Kwon Kim(a), Tae-Yong Lee(a), Hyun il Kang(a), Kyu-il Lee(a), Hyun-Suk Hwang(a), Young Park(b) and Joon-Tae Song(a), (a)School of Information and Communication Engineering, Sungkyunkwan University, 300 Chunchun-dong, Jangan-gu, Kyunggi-do, Suwon 440-746, Korea, (b)Signaling and Electrical Engineering Research Department, Korea Railroad Research Institute, 360-1 Woulam-Dong, Kyongi-do, Uiwang-city 437-050, Korea
- G/PI.31** NOVEL COMPOSITES OF POLYMER/OXIDES/CARBON-BLACK AS ROOM TEMPERATURE GAS SENSORS
K. Arshak and I. Gaidan, Microelectronic and semiconductor Research Group, ECE Department, University of Limerick, Plassey Technological Park, Limerick, Ireland
- G/PI.32** BULK $Zn_{1-x}Co_xO:Na$ MAGNETIC SEMI-CONDUCTORS SYNTHESIZED BY CO-PRECIPITATION PROCESS
M. Bouloudenine(a,b), N. Viart(a), S. Colis(a) and A. Dinia(a), (a)Institut de Physique et Chimie des Matériaux, IPCMS, Groupe des Matériaux Inorganiques, CNRS-UMR 7504, ULP-ECPM, 23 Rue du Loess, B.P. 43, 67037 Strasbourg, France, (b)Université de Annaba, Faculté des Sciences, Département de Physique, BP 12, Annaba 23000, Algérie
- G/PI.33** SEA-URCHIN LIKE ZnO NANOSTRUCTURES ON Si BY OXIDATION OF Zn METAL POWDERS
A. Sekar, S.H. Kim, A. Umar, and Y.B. Hahn, School of Chemical Engineering and Technology, Nanomaterials Processing Research Center, Chonbuk National University, Chonju 561-756, Korea
- G/PI.34** CHARACTERISATION OF PRECIPITATION SYNTHESIZED ZnO NANOSTRUCTURES
K.E. McBean, M.R. Phillips, Microstructural Analysis Unit, University of Technology, Sydney, PO Box 123, Broadway NSW 2007 Australia, and E.M. Goldys, Division of Information and Communication Sciences, Macquarie University, North Ryde NSW 2109 Australia
- G/PI.35** STUDY OF ELECTRICAL, STRUCTURAL AND LUMINESCENT PROPERTIES OF ZINC OXIDE THIN FILMS
A.B. Aimagambetov, S.Zh. Tokmoldin, N. Beisenkhanov, A.T. Issova, Kh.A. Abdullin, and B.N. Mukashev, Institute of Physics and Technology, Ibragimov Street 11, Almaty, 050032, Kazakhstan
- G/PI.36** ZnO NANOSTRUCTURES GROWN BY THE PULSED LASER DEPOSITION TECHNIQUE
R. O'Haire, A. Meaney, J.-R. Duclere, E. McGlynn, M.O. Henry, J.-P. Mosnier, National Centre for Plasma Science and Technology, School of Physical Sciences, Dublin City University, Glasnevin 9, Dublin, Ireland
- G/PI.37** INVESTIGATION OF ANNEALING-TREATMENT ON THE OPTICAL AND ELECTRICAL PROPERTIES OF SOL-GEL-DERIVED ZINC OXIDE THIN FILMS
Shou-Yi Kuo(a), Wei-Jium Chen(b), Chin-Pao Cheng(b), C. N. Hsiao(a), (a)Precision Instrument Development Center, National Science Council, Taiwan, (b)Department of Industrial Education, National Taiwan Normal University, Taiwan
- G/PI.38** CHARACTERIZATION OF THE HETEROJUNCTION ZnO(n)/ Si (p) FILMS GROWN BY MAGNETRON SPUTTERING
F. Chaabouni, M. Abaab, B. Rezig, Photovoltaic and semiconductor materials laboratory, National engineering school of Tunis, le belvedere, PO Box 37, 1002 Tunis, Tunisie.
- G/PI.39** ZINC OXIDE FILM GROWTH ON ZIRCONIUM BORIDE
Shunichi Hishita, Takashi Aizawa, Shigeki Otani, Shigeru Suehara, and Hajime Haneda Advance materials Laboratory, National Institute for Materials Science, Japan
- G/PI.40** ATOMIC ABSORPTION PHOTOMETRY OF ZnO
K. Lott, S. Shinkarenko, L. Türn, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia, E. Gorohova, S.I. Vavilov, State Optical Institute, St.Petersburg, Russia, A. Grebennik, S. Ashihmin, A. Vishnjakov, D.I. Mendelejev, University of Chemical Technology of Russia, Miusskaya sq.9, 125190 Moscow, Russia
- G/PI.41** Wet-Etching Characteristics of ZnO Using Acid Solutions
Ji-Myon Lee(a,b), Kyoung-Kook Kim(b), Hitoshi Tampo(b) and Shigeru Niki(b), (a)Dept. of Materials Science and Metallurgical Engineering, Suncheon National University, Suncheon, Chonnam 540-742, Korea, (b)Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki 305-8568, Japan
- G/PI.42** EFFECT OF ALUMINIUM DOPING ON ZINC OXIDE, AZO, THIN FILMS GROWN BY SPRAY PYROLYSIS
A. El Manouni, F.J. Manjón, M.A. Mollar, B. Marí, Dept. Física Aplicada, Universitat Politècnica de València, Camí de Vera s/n, 46022 València, Spain, R. Gómez, Dept. Química Física i IU d'Electroquímica, Universitat d'Alacant, Ap. 99, 0380 Alacant, Spain, M^cC. López, J.R. Ramos Barrado, Dept. Física Aplicada, Laboratorio de Materiales y Superficie, unidad asociada al CSIC. Universidad de Málaga, 29071 Málaga, Spain

- G/PI.43** MICROSCOPIC DISTRIBUTION OF BOUND EXCITONS IN SELF-ORGANIZED ZnO PYRAMIDS
F. Bertram, S. Giemsch and J. Christen, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany; A.-H. Elshaer, A. Bakin and A. Waag, Department of Semiconductor Technology, Braunschweig Technical University, Germany
- G/PI.44** SYNTHETIC AND PHOTOLUMINESCENCE STUDIES ON RE DOPED ZnO NANOSTRUCTURES
M. Peres, A. Neves, J. Soares, T. Monteiro, Department of Physics, University of Aveiro, 3810-193 Aveiro, Portugal; Angela Sofia Pereira, Ana Catarina Esteves, Tito Trindade, Department of Chemistry, University of Aveiro, CICECO, 3810-193 Aveiro, Portugal

Wednesday, June 1, 2005
Mercredi 1er juin 2005

Afternoon
Après-midi

Session V : Defects and impurities
Session chair : B. Gil

- G-V.1** 14:00 -Invited- EPR AND OPTICAL CHARACTERIZATION IN ZnO CRYSTALS
L. Halliburton, Physics Department, West Virginia University, P.O. Box 6315, Morgantown WV 26506, USA
- G-V.2** 14:30 OXYGEN-INTERSTITIAL DEFECTS IN ZINC OXIDE
Paul Erhart, Karsten Albe, Andreas Klein, TU Darmstadt, Institute for Materials Science, Germany
- G-V.3** 14:45 THE EFFECT OF TIME REVERSAL SYMMETRY ON THE VIBRATIONAL MODES IN ZnO/Al₂O₃ AND OTHER RELATED COMPOUNDS: GaN, CdS, BeO, ZnS, CdSe
H.W. Kunert(a) and J. Barnas(b), (a)Department of Physics, University of Pretoria, 0001 Pretoria, South Africa, (b)Department of Physics, Adam Mickiewicz University, ul.Umultowska 85, 61-614 Poznan, Poland
- G-V.4** 15:00 INVESTIGATION OF THE ELECTRICAL ACTIVITY OF DISLOCATIONS IN ZnO-EPI-LAYERS BY TRANSMISSION ELECTRON HOLOGRAPHY
E. Müller, P. Kruse and D. Gerthsen, Laboratorium für Elektronenmikroskopie, Universität Karlsruhe, 76128 Karlsruhe, Germany, R. Kling Abteilung Halbleiterphysik, Universität Ulm, 89069 Ulm, Germany, A. Waag, Institut für Halbleitertechnologie, Universität Braunschweig, 38106 Braunschweig, Germany
- G-V.5** 15:15 DEFECTS IN ELECTRON IRRADIATED ZnO SINGLE CRYSTALS
M.H. Fenollosa, L.C. Damonte and B. Marí, Dpt. Física Aplicada, Universitat Politècnica de València, Camí de Vera s/n, 46022-València, Spain
- G-V.6** 15:30 -Invited- ACCEPTORS IN ZnO
B.K. Meyer, I. Physics Institute, Justus Liebig University Giessen, Heinrich Buff Ring 16, 35392 Giessen, Germany
- 16:00 **BREAK**

Session VI : Growth 2

Session chair : A. Dagmar

- G-VI.1** 16:30 -Invited- ISSUES IN ZnO HOMOEPITAXY
M.W. Cho(a), H. Suzuki(a) T. Minegishi(a), T. Yao(a,b), K. Maeda(c) and I. Nikura(c), (a)Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan, (b)Center for Interdisciplinary Research, Tohoku University, Aramaki, Aoba-ku, Sendai, 980-8578, Japan, (c)Tokyo Denpa Company Ltd., 430 Hakoishi Tamamura-machi, Sawa-gun, Gunma 370-1113, Japan
- G-VI.2** 17:00 CARRIER CONCENTRATION AND SHALLOW ELECTRON STATES IN IN-DOPED HYDROTHERMALLY GROWN ZnO
Ulrike Grossner, Jens S. Christensen, Andrej Yu. Kuznetsov, and Bengt Gunnar Svensson, Department of Physics / SMN, University of Oslo, PO Box 1048 Blindern, 0316 Oslo, Norway
- G-VI.3** 17:15 Withdraw
- G-VI.4** 17:30 THE EFFECT OF DISLOCATIONS, HYDROGENATION AN ANNEALING ON THE ELECTRICAL PROPERTIES OF ZnO AND Au/ZnO CONTACTS
M.A. Lahmer and K. Guergouri, Laboratoire de physique-chimie des semiconducteurs, Département de Physique, Université Mentouri, Constantine 25000, Algérie
- G-VI.5** 17:45 THE EFFECTS OF OXYGEN PARTIAL PRESSURE ON LATTICE DYNAMICS AND MICROSTRUCTURES FOR GA-DOPED ZNO THIN FILMS PREPARED BY REACTIVE PLASMA DEPOSITION METHOD
T. Yamamoto(a), T. Mitsunaga(b), M. Osada(c), K. Ikeda(a), S. Kishimoto(a), K. Awai(a), T. Sakemi(d) and S. Shirakata(e), (a)Materials Design Center, Research Institute, Kochi University of Technology, 185 Miyanokuchi, Tosayamada-cho, Kouchi 782-8502, Japan, (b)Application Laboratory, Rigaku Corporation, 3-9-12 Matsubara-cho, Akishima-shi, Tokyo 196-8666, Japan, (c)Advanced Materials Laboratory, National Institute for Materials Science, Tsukuba, Ibaraki 305-0044, Japan, (d)Research & Development Center, Sumitomo Heavy Industries, Ltd., 5-2 Soubiraki-cho, Niihama, Ehime 792-8588, Japan, (e)Faculty of Engineering, Ehime University, 3 Bunkyo-cho, Matsuyama, Ehime 790-8577, Japan
- G-VI.6** 18:00 CL STUDIES OF TRANSITION METAL DOPED ZnO PRODUCED BY RF MAGNETRON SPUTTERING
M.R. Phillips, University of Technology, Sydney, PO Box 123, Broadway, NSW 2007, Australia and M. Wagner, E. Malguth and A. Hoffmann, Technische Universität Berlin, PN6-1, Hardenbergstr. 26, 10623 Berlin, Germany
- G-VI.7** 18:15 HIGH QUALITY NANOSTRUCTURED ZnO FILMS BY METAL-ORGANIC CHEMICAL VAPOR DEPOSITION
Graziella Malandrino, Manuela Blandino, Ignazio L. Fragalà Dipartimento di Scienze Chimiche, Università di Catania, and INSTM, UdR Catania, Viale A. Doria 6, 95125 Catania, Italy
- 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 : Doping
Session chair : T. Yao

- G-VII.1** 8:30 -Invited- p-TYPE ZnO AND LED APPLICATIONS
S. Park, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju 500-712, Republic of Korea
- G-VII.2** 9:00 THE CHARACTERIZATION OF PHOSPHORUS DOPED ZnO MULTI-LAYER THIN FILMS TO CONTROL CARRIER CONCENTRATION
Sung Hoon Lim, Jae Won Kim, Hong Seong Kang, Hyun Woo Chang and Sang Yeol Lee, Department of Electrical and Electronic Engineering, Yonsei University, 134, Shinchondong, Seodaemun-ku, 120-749, Seoul, Korea
- G-VII.3** 9:15 DOPING ENGINEERING OF P-TYPE ZnO
Y. Marfaing and A. Lusson, LPSC-CNRS, 92195 Meudon cedex, France
- G-VII.4** 9:30 NOVEL PREPARATION OF P-TYPE ZnO FILM USING P2O5 AS DOPING SOURCE
Liping Zhu, Zhizhen Ye, Fugang Chen, Weizhong Xu, Binghui Zhao, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, People's Republic of China
- G-VII.5** 9:45 DOPING OF PULSED LASER DEPOSITED ZnO THIN FILMS
M. Novotny, J.-R. Duclere, A. Meaney, R. O'Haire, E. McGlynn, M.O. Henry, J.-P. Mosnier, School of Physical Science, NCPST, Dublin City University, Glasnevin 9, Dublin, Ireland
- G-VII.6** 10:00 SUBSTITUTIONAL INCORPORATION OF IMPLANTED Fe IN ZnO
U. Wahl, E. Rita, J.G. Correia, E. Alves, Instituto Tecnológico e Nuclear, EN10, 2686-953 Sacavém, Portugal, J.C. Soares, Centro de Física Nuclear da Universidade de Lisboa, 1649-003 Lisboa, Portugal, The ISOLDE collaboration, CERN-PH, 1211 Geneva 23, Switzerland
- G-VII.7** 10:15 EFFECTS OF DONOR IMPURITY BANDS ON HALL-EFFECT ANALYSIS IN ZnO
David C. Look, Wright State University and Air Force Research Laboratory, USA
- 10:30 **BREAK**

Session VIII : Magnetic properties 1

Session chair : S. Pearton

- G-VIII.01** 11:00 -Invited- THEORY OF MAGNETIC ZnO: CHARGE AND SPIN CONTROL FOR THE SEMICONDUCTOR SPINTRONICS
H. Katayama-Yoshida(a,b), T. Fukushima(a,b) and K. Sato(b), Department of Condensed Matter Physics(a) & Department of Computational Nanomaterials Design(b), The Institute of Scientific and Industrial research (ISIR), Osaka University, Osaka 567-0047, Japan
- G-VIII.02** 11:30 EPR STUDY ON MAGNETIC Zn_{1-x}Mn_xO
Mariana Diaconu, Heidemarie Schmidt, Andreas Pöpl, Rolf Böttcher, Joachim Hoentsch, Andreas Rahm, Holger Hochmuth, Michael Lorenz and Marius Grundmann, Institut für Experimentelle Physik II, Fakultät für Physik und Geowissenschaften, Universität Leipzig, Linnéstrasse 3-5, 04103 Leipzig, Germany
- G-VIII.03** 11:45 GROWTH AND CHARACTERIZATION OF ZnMnO THIN FILMS
A.I. Savchuk, V.I. Fediv, S.A. Savchuk, Department of Physics of Semiconductors and Nanostructures, Chernivtsi National University, 2 Kotsubinsky Str., 58012 Chernivtsi, Ukraine, A. Perrone, University of Lecce, Physics Department and INFN, Via per Arnesano, 73100 Lecce, Italy
- G-VIII.04** 12:00 RAMAN SCATTERING STUDY OF ZnO:Ti AND ZNO:Mn BULK CRYSTALS
W. Gebicki(a), K. Osuch(a), C. Jastrzebski(a), M. Godlewski(b), Z. Golacki(b), (a)Faculty of Physics, Warsaw University of Technology, ul. Koszykowa 75, 00-661 Warsaw, Poland, (b)Institute of Physics, Polish Academy of Sciences, Al. Lotników 32/46, 02-668 Warszawa, Poland
- G-VIII.05** 12:15 EXCHANGE POLARISATION COUPLING IN WURTZITE-PEROVSKITE INTERFACES: ELECTRICAL AND OPTICAL PROPERTIES OF Pt/ZnO/BaTiO₃/Pt AND Pt/ZnO/BaTiO₃/ZnO/Pt HETEROSTRUCTURES
M. Schubert, N. Ashkenov, E. Twerdowski, H. v. Wenckstern, H. Hochmuth, M. Lorenz, G. Wagner, M. Grundmann, Fakultät für Physik und Geowissenschaften, Institut für Experimentelle Physik II, Universität Leipzig, Linnestrasse 5, 04103 Leipzig, Germany
- G-VIII.06** 12:30 LOCAL STRUCTURE AND MAGNETISM IN EPITAXIAL ZnCoO FILMS
K. Rode(a), M-A. Arrio(b), E. Fonda(c), P. Bencok(d), A. Anane(a), F. Petroff(a), V. Cros(a), J-P. Contour(a), A. Fert(a) and N.B. Brookes(d), (a)Unité Mixte de Physique CNRS/Thales, Domaine de Corbeville, 91404 Orsay Cedex, France and Université Paris-Sud, 91405 Orsay Cedex, France, (b)Laboratoire de Mineralogie-Cristallographie de Paris, UMR CNRS 7590 - Universités Paris 6 et Paris 7 – IPGP, Case 115, Campus Boucicaut, 140 rue Lourmel, 75015 Paris, France, (c)Synchrotron SOLEIL, L'Orme des Merisiers Saint-Aubin - BP 48, 91192 Gif-sur-Yvette Cedex, France, (d)European Synchrotron Radiation Facility, BP 220, 38043 Grenoble, France
- 12:45 **LUNCH**

Thursday, June 2, 2005
Jeudi 2 juin 2005

Afternoon
Après-midi

Session IX : Devices
Session chair : D. Look

- G-IX.01** 14:00 -Invited- ZnO DETECTORS AND OTHER DEVICES
Yicheng Lu, Department of Electrical and Computer Engineering, Rutgers University, 94 Brett Road, Piscataway NJ 08854-8058, USA
- G-IX.02** 14:30 OXIDE ENGINEERING OF ZnO THIN FILM TRANSISTORS
P.F. Carcia, R.S. McLean, and M.H. Reilly, DuPont Research and Development, Experimental Station, Wilmington DE 19880, USA
- G-IX.03** 14:45 EFFECTS OF ELECTRICAL BIAS STRESS ON ZnO THIN FILM TRANSISTORS
R. Navamathavan, Eun-Jeong Yang, Jae-Hong Lim, Dae-Kue Hwang, Jin-Yong Oh, Jin-Ho Yang and Seong-Ju Park, Nanophotonic Semiconductors Laboratory, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), 1 Oryong Dong, Buk-Ku, Gwangju 500-712, South Korea
- G-IX.04** 15:00 HIGH EFFICIENCY n-ZnO/p-SiC HETEROSTRUCTURE PHOTODIODES GROWN BY PLASMA-ASSISTED MOLECULAR-BEAM EPITAXY
Ya. I. Alivov, Ü. Özgür, S. Dogan, D. Johnstone, V. Avrutin, N. Onojima, C. Liu, J. Xie, Q. Fan and H. Morkoç, Virginia Commonwealth University, Department of Electrical Engineering, Richmond VA 23284, USA
- G-IX.05** 15:15 ZnO/SrTiO₃ TRANSPARENT FIELD EFFECT TRANSISTORS
E. Bellingeri, D. Marré, L. Pellegrino, G. Canu, I. Pallecchi and A.S. Siri, INFN-Lamia, Corso Perrone 24, 16152 Genova, Italy, Dipartimento di Fisica, Università di Genova, Via Dodecaneso 33, 16146 Genova, Italy
- G-IX.06** 15:30 NITROGEN-DOPED ZnO THIN FILM: COMPENSATION/PASSIVATION BY IMPURITIES
T.J. Coutts(a), X. Li, S. Limpijumng(b), B. Keyes(a), S. Asher(a), C.L. Perkins(a), H. Moutinho(a), S.B. Zhang(a), Su-Huai Wei(a), (a)National Renewable Energy Laboratory, 1617 Cole Boulevard, Golden CO 80401, USA, (b)School of Physics, Institute of Science, Suranaree University of Technology, Nakhon Ratchasima, Thailand
- G-IX.07** 15:45 IN-SITU MASS SPECTROMETRY OF VAPOUR PHASE DURING Au-CATALYSED SELF-ASSEMBLY OF ZnO NANORODS
P. Prete, Istituto per la Microelettronica e i Microsistemi (IMM) del CNR, Sez. di Lecce, Via Arnesano, 73100 Lecce, Italy, A. Quarta and N. Lovergine, Dipartimento di Ingegneria dell'Innovazione, Università di Lecce, Via Arnesano, 73100 Lecce, Italy

16:00 **BREAK**

Session X : Piezo-effects
Session chair : Y. Lu

- G-X.01** 16:30 -Invited- EXPERIMENTAL OBSERVATION OF PIEZOELECTRIC FIELDS IN ZnO-ZnMgO QUANTUM WELLS
C. Morhain, CNRS, Valbonne-Sophia-Antipolis, France
- 17:00-19:00 **POSTER SESSION 2**

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

- G/PII.01** INVESTIGATION ON THE VARIATION OF GREEN, YELLOW, AND ORANGE EMISSION PROPERTIES OF ZnO THIN FILM
Hong Seong Kang, Jae Won Kim, Sung Hoon Lim, Hyun Woo Chang and Sang Yeol Leea, Department of Electrical and Electronic Engineering, Yonsei University, 134 Shinchon-dong, Seodaemoon-ku, 120-749 Seoul, Korea
- G/PII.02** OPTICAL AND STRUCTURAL ANALYSIS OF UNDOPED AND RE DOPED BY ION IMPLANTATION BULK ZnO SAMPLES
T. Monteiro, A.J. Neves, M.C. Carmo, M.J. Soares, M. Peres, Departamento de Física, Universidade de Aveiro, Aveiro, Portugal; E. Alves, E. Rita, U. Wahl, Instituto Tecnológico e Nuclear, Sacavém, Lisboa, Portugal
- G/PII.03** EFFECTS OF RAPID THERMAL ANNEALING ON NATIVE DEFECT-RELATED EMISSIONS OF ZnO THIN FILMS
Sun Jae Hwang(a), Sejoon Lee(a), Hye Sung Lee(a), Duck Nam Kim(a), Chang Seok Han(a), Deuk Young Kim(a) and Youn Hwan Lee(b), (a)Department of semiconductor Science, Dongguk University, Seoul 100-715, Korea, (b)Department of Information and Communication Engineering, Dongguk University, Kyungju 780-714, Korea
- G/PII.04** BAND ALIGNMENTS AND VALENCE BAND MAXIMUM ENERGIES OF ZnO AND(ZnMg)O
G. Venkata Rao(a), F. Säuberlich(a), C. Körber(a), J.A. Sans(a,b), A. Klein(a), (a)Darmstadt University of Technology, Institute of Materials Science, Surface Science Division, Petersenstrasse 23, 64287 Darmstadt, Germany, (b)ICMUV-Departamento de Física Aplicada, Universidad de Valencia, Edificio de investigación, C/Dr. Moliner 50, 46100 Burjassot (Valencia), Spain
- G/PII.05** EFFECT OF HYDROGEN PEROXIDE TREATMENT ON THE CHARACTERISTICS OF PT SCHOTTKY CONTACT ON N-TYPE ZNO
Sang-Ho Kim(a), Han-Ki Kim(b), Tae-Yeon Seong(a), (a)Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju 500-712, Korea, (b)Core Technology Lab, Samsung SDI, 575 Shin-Dong, Youngtong-Gu, Suwon, Gyeonggi-Do, 442-391, Korea
- G/PII.06** ELECTRICAL AND OPTICAL PROPERTIES OF LARGE AREA Ga-DOPED ZnO THIN FILMS PREPARED BY REACTIVE PLASMA DEPOSITION
S. Shirakata(a), T. Sakemi(b), K. Awai(c) and T. Yamamoto(c), (a)Faculty of Engineering, Ehime University, 3 Bunkyo-cho, Matsuyama, Ehime 790-8577, Japan, (b)Research & Development Center, Sumitomo Heavy Industries, Ltd., 5-2 Soubiraki-cyo, Niihama, Ehime 792-8588, Japan, (c)Kochi University of Technology, Tosayamada, Kochi 782-8502, Japan
- G/PII.07** As-DOPED P-TYPE ZnO STUDIED BY POSITRON ANNIHILATION SPECTROSCOPY
F. Tuomisto, I. Makkonen, M.J. Puska, and K. Saarinen, Laboratory of Physics, Helsinki University of Technology, Espoo, Finland, D.C. Look, Semiconductor Research Center, Wright State University, Dayton, Ohio, USA, G.M. Renlund and R.H. Burgener II, ON International, 418 West Winchester Street, Salt Lake City Utah 84107, USA
- G/PII.08** LATTICE SITES OF IMPLANTED Cu AND Ag IN ZnO
U. Wahl, E. Rita, J.G. Correia, E. Alves, Instituto Tecnológico e Nuclear, EN10, 2686-953 Sacavém, Portugal, J.C. Soares, Centro de Física Nuclear da Universidade de Lisboa, 1649-003 Lisboa, Portugal, The ISOLDE collaboration, CERN-PH, 1211 Geneva 23, Switzerland
- G/PII.09** SYNTHESIS AND GROWTH MECHANISM OF ZnO MICRO SPHERES AND CAGES BY THERMAL EVAPORATION METHOD
A. Umar, S.-H. Kim, Y.-W. Im, and Y. B. Hahn, School of Chemical Engineering and Technology and Nanomaterials Research Centre, Chonbuk National University, Chonju 561-756, South Korea
- G/PII.10** MEASUREMENT OF THE MEAN INNER POTENTIAL OF ZNO NANORODS BY TRANSMISSION ELECTRON HOLOGRAPHY
E. Müller, P. Kruse and D. Gerthsen, Laboratorium für Elektronenmikroskopie, Universität Karlsruhe, 76128 Karlsruhe, Germany, A. Rosenauer, M. Schowalter, Institut für Festkörperphysik, Universität Bremen, Otto-Hahn-Allee 1, 28359 Bremen, Germany, D. Lamoen, Departement Fysica, Universiteit Antwerpen, 2020 Antwerpen, Belgium, R. Kling, Abteilung Halbleiterphysik, Universität Ulm, 89069 Ulm, Germany, A. Waag, Institut für Halbleitertechnologie, Universität Braunschweig, 38106 Braunschweig, Germany
- G/PII.11** OPTICAL AND MORPHOLOGICAL FEATURES OF BULK AND HOMOEPITAXIAL ZnO
R. Yakimova, R. Yazdi, N.T. Son, I. Ivanov, M. Syväjärvi, IFM, Linköping University, 58183 Linköping, Sweden; S. Sun, G. Tompa, Structured Materials Industries, Inc., Suite 102/103 Piscataway NJ 08854-3723, USA; A. Kuznetsov, B. Svensson, Physics Department/Physical Electronics, University of Oslo, P.O. Box 1048 Blindern, 0316 Oslo, Norway
- G/PII.12** CHARACTERIZATION OF ZNO THIN FILMS FOR SURFACE ACOUSTIC WAVE APPLICATIONS
F. Moreira, L. Le Brizoual, F. Sarry, O. Elmazria and P. Alnot, Laboratoire de Physique des Milieux Ionisés et Applications - UMR 7040, Bd des Aiguillettes, BP 239, 54506 Vandoeuvre les Nancy Cedex, France

- G/PII.13** PHOTOLUMINESCENCE PROPERTIES OF CO₂+ DOPED ZNO NANOCRYSTALS
Petra Lommens, Philippe F. Smet, Dirk Poelman, Zeger Hens, Department of Inorganic and Physical Chemistry, Faculty of Sciences, Krijgslaan 281, 9000 Gent, Belgium
- G/PII.14** INTRINSIC FERROMAGNETISM IN SPUTTERED (Zn,Co)O(0001) THIN FILMS
A. Dinia, G. Schmerber, J.-P. Kappler, C. Boeglin, V. Pierron-Bohnes, E. Beaupaire, IPCMS (CNRS-UMR 7504), 23 rue du Loess, BP 43 67034 Strasbourg Cedex2, France and D. Muller, J.J. Grob, CNRS-PHASE (UPR 292) 23 rue du Loess, BP 43, 67034 Strasbourg Cedex2, France
- G/PII.15** STRUCTURAL AND OPTICAL MICRO-CHARACTERIZATION OF ZnO GROWTH ON PATTERNED SUBSTRATE
W.C.T. Lee, E.D. Walsby, R.J. Blaikie and S.M. Durbin, Dept. of Electrical and Computer Engineering, University of Canterbury, Christchurch, New Zealand; F. Bertram, S. Giemsch and J. Christen, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany
- G/PII.16** IMPACT OF ELECTRON BEAM IRRADIATION ON THE OPTICAL PROPERTIES OF ZnO
S. Giemsch, F. Bertram, and J. Christen, Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany; Ch. Neumann and B.K. Meyer, I. Physics Institute, Justus Liebig University Giessen, Heinrich-Buff-Ring 16, 35392 Giessen, Germany
- G/PII.17** PREPARATION AND PROPERTIES OF LUMINESCENT ZNO NANOPARTICLES IN THE MESOPOROUS SILICA MATRICES
L.I. Burova, D.I. Petukhov, A.A. Eliseev, Yu.D. Tretyakov, A.V. Lukashin. Department of Materials Science, Moscow State University, 119992 Moscow, Russia
- G/PII.18** X-RAY STUDIES ON THE OPTICAL AND STRUCTURAL PROPERTIES OF ZnO NANOSTRUCTURED FILMS
S. Larcheri, C. Armellini and F. Rocca, IFN-CNR Sezione di Trento, 38050 Povo (Trento), Italy; A. Kuzmin, R. Kalendarev, ISSP, University of Latvia, Riga, Latvia; G. Dalba, R. Graziola and J. Purans, INFN and Department of Physics, 38050 Povo (Trento) Italy
- G/PII.19** PEMOCVD OF ZNO THIN FILMS, DOPED BY GALLIUM AND THEIR MAIN PROPERTIES
V. Khranovskyy, G. Lashkarev, V. Lazorenko, Department of Electronic Materials and Cryogenic Investigations Institute for Problems of Material Science National Academy of Sciences of Ukraine, 3 Krzhizhanovsky Str, 03142 Kiev-142, Ukraine, and R. Yakimova, Department of Physics and Measurement Technology, Linköping University, 58183 Linköping, Sweden
- G/PII.20** PREPARATION AND CHARACTERIZATION OF Ga-DOPED ZnO THIN FILMS BY PULSED LASER DEPOSITION
J.A. Sans(a), A. Segura(a), B. Marí(b), M.A. Hernández(b), (a)Institut de Ciència dels Materials, Departament de Física Aplicada, Universitat de València, Ed. Investigació, 46100 Burjassot, Spain, (b)Departament de Física Aplicada, Universitat Politècnica de València, 46071 València, Spain
- G/PII.21** COMPOSITIONAL ANALYSIS AND HIGH RESOLUTION IMAGING OF GRAIN BOUNDARIES IN P-DOPED ZnO CERAMICS
I.G. Solorzano(a), J.B Van der Sande(b), K.K Baek(b) and H.L. Tuller(b), (a)Department of Materials Science and Engineering, PUC-Rio de Janeiro, Brazil, (b)Center for Materials Science and Engineering, MIT, Cambridge MA 02139, USA
- G/PII.22** EFFECT OF THERMAL ANNEALING ON THE OPTICAL PROPERTIES OF ZINC OXIDE THIN FILMS GROWN BY PLD
M.A. Hernández(a), B. Marí(a), J.A. Sans(b), A. Segura(b), (a)Departament de Física Aplicada, Universitat Politècnica de València, 46071 València, Spain, (b)Institut de Ciència dels Materials, Departament de Física Aplicada, Universitat de València, Ed. Investigació, 46100 Burjassot, Spain
- G/PII.23** OPTICAL AND ELECTRICAL PROPERTIES OF ZnMnO LAYERS GROWN BY PEROXIDE MOLECULAR BEAM EPITAXY
V. Avrutin, Ü. Özgür, H. Lee, and H. Morkoç, Virginia Commonwealth University, Department of Electrical Engineering, Richmond VA, 23284, USA, A. Che Mofor, A. El-Shaer, A. Bakin and A. Waag, Institute for Semiconductor Technology, Braunschweig Technical University, Braunschweig 38106, Germany, N. Izyumskaya, W. Schoch and F. Reuss, Department of Semiconductor Physics, Ulm University, Ulm 89081, Germany, V. Beshenkov, A.N. Pustovit and A.F. Vyatkin, Institute of Microelectronics Technology, Russian Academy of Sciences, Chernogolovka, Moscow Region 142432, Russia
- G/PII.24** CONDUCTION BAND PARAMETERS OF ZnO
S. Shokhovets(a), G. Gobsch(a) and O. Ambacher(b), (a)Institute of Physics and (b)Center for Micro- and Nanotechnologies, Ilmenau Technical University, PF 100565, 98684 Ilmenau, Germany
- G/PII.25** PHONON AND PLASMON PROPERTIES IN (N,Li,P,Sb,Ga,Al)-DOPED ZnO AND (Mg,Cd,Mn,Ni,Co,Fe,Cu)ZnO ALLOY THIN FILMS
C. Bundesmann, M. Schubert, D. Spemann, H. v. Wenckstern, M. Lorenz, and M. Grundmann, Universität Leipzig, Institut für Experimentelle Physik II, Linnéstraße 5, 04103 Leipzig, Germany
- G/PII.26** DEPENDENCE OF ELECTRICAL PROPERTIES OF UNDOPED ZnO THIN FILMS PREPARED BY ELECTRON BEAM DEPOSITION WITH RF PLASMA ON FILM THICKNESS
S. Kishimoto(a), Y. Nakagawa(b), K. Ikeda(a), K. Awai(a), T. Matsuda(a), H. Furuta(a), T. Hiramatsu(b), T. Hirao(a), M. Hakata(c), T. Yamamoto(a), (a)Materials Design Center, Kochi University of Technology, (b)Kochi IPC, (c)Casio Computer CO. Ltd, Japan

- G/PII.27** THE IMPROVEMENT OF GaN LED USING ZnO BASED TRANSPARENT CONDUCTING OXIDE
Jae-Hong Lim, Dae-Kue Hwang, Jin-Ho Yang and Seong-Ju Park, National Research Laboratory for Nanophotonic Semiconductors, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Korea, Yoon-Soo Park, School of Physics, Seoul National University, South Korea
- G/PII.28** MICROWAVE SYNTHESIS OF ZnO MICROTUBE
Jian Zhou, Zhidong Wang, Yong He, Lin WanG, Erdan Gu, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, P R China
- G/PII.29** RAMAN SPECTROSCOPY ON ZnO CRYSTALS GROWN BY VAPOUR TRANSPORT
R.Tena-Zaera* and V. Muñoz-Sanjosé, Dept. Física Aplicada i Electromagnetisme, Universitat de València, C/ Dr. Moliner 50, 46100 Burjassot, Spain, Ch. Power, M. Salas, I. Molina and J. Gonzalez, Centro de Estudios de Semiconductores, Facultad de Ciencias, Universidad de los Andes, Merida 5201, Venezuela, *Present address: LCMTR, Institut des Sciences Chimiques Seine Amont, CNRS, 2/8 rue Henri Dunant, 94320 Thiais, France
- G/PII.30** REACTIVITY OF THE Fe/ZnO(000-1) INTERFACE
A. Demund, S. Sauter, D. Wett, R. Hesse, R. Szargan, Universität Leipzig, Wilhelm-Ostwald Institut für Physikalische und Theoretische Chemie, Linnéstraße 2, 04103 Leipzig, Germany
- G/PII.31** ELECTRICAL CHARACTERISTICS OF PT-RU ALLOY SCHOTTKY CONTACT ON ZNO FABRICATED BY A COMBINATORIAL METHOD
T. Nagata, P. Ahmet, and T. Chikyow, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan, K. Yamada, K. Tsutsui, and Y. Wada, Nano Technology Research Laboratory (NRL) Waseda University, Shinjuku-ku, Tokyo, Japan
- G/PII.32** INFLUENCE OF TIME, LIGHT AND TEMPERATURE ON THE ELECTRICAL PROPERTIES OF ZINC OXIDE TFTS
P. Barquinha, E. Fortunato, A. Gonçalves, A. Pimentel, A. Marques, L. Pereira, G. Lavareda and R. Martins Department of Materials Science/CENIMAT, Faculty of Sciences and Technology, New University of Lisbon and CEMOP-UNINOVA, Campus da Caparica, 2829-516 Caparica, Portugal
- G/PII.33** STRUCTURAL, ELECTRICAL AND OPTICAL PROPERTIES OF THE THIN ZNO FILMS PREPARED BY CHEMICAL PRECIPITATION
Gabriela Ciobanu, Gabriela Carja, Gabriela Apostolescu, "Gh. Asachi" Technical University of Iasi, Faculty of Industrial Chemistry, Iasi, Romania, Irina Taraboanta, "Gh. Asachi" Technical University of Iasi, Faculty of Textiles and Leather Engineering, Iasi, Romania
- G/PII.34** CONTROLLABLE GROWTH OF 1D ZnO NANO-STRUCTURES
Weizhong Xu(a), Zhizhen Ye(a,b), Liping Zhu(a,b), (a)State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, People's Republic of China, (b)Center for Nanoscience and nanotechnology, Zhejiang University, Hangzhou 310027, China
- G/PII.35** WEAK FERROMAGNETISM IN TEXTURED Zn_{1-x}(TM)_xO THIN FILMS
Heidemarie Schmidt(a), Mariana Diaconu(a), Holger Hochmuth(a), Michael Lorenz(a), Annette Setzer(a), Pablo Esquinazi(a), Andreas Pöpl(a), Daniel Spemann(a), Karl-Wilhelm Nielsen(b), Rudolf Gross(b), Herbert Schmid(c), Werner Mader(c), Gerald Wagner(d), and Marius Grundmann(a), (a)Institut für Experimentelle Physik II, Universität Leipzig, 04104 Leipzig, Germany, (b)Walther-Meißner Institut für Tieftemperaturforschung, 85748 Garching, Germany, (c)Institut für Anorganische Chemie, Rheinische Friedrich-Wilhelm Universität Bonn, Germany, (d)Institut für Mineralogie, Kristallographie und Materialwissenschaft, Universität Leipzig, Germany
- G/PII.36** ALIGNED ZNO NANORODS GROWN ON ZnO THIN FILMS AND METALLIC CLUSTERS Caroline Andrezza – Vignolle, Pascal Andrezza, Centre de Recherche sur la Matière Divisée, CNRS-Université d'Orléans, 1b rue de la Férollerie, 45071 Orléans, France and Dongxu Zhao, Key Laboratory of Excited State Processes, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, 140-Ren Min Street, Changchun, 130022, P.R.China
- G/PII.37** REAL TIME GROWTH STUDIES ON THE EXPANDING THERMAL PLASMA DEPOSITED ZnO FILMS BY MEANS OF IN SITU SPECTROSCOPIC ELLIPSOMETRY
I. Volintiru(a), M. Creatore(a), W.H. van Helvoort(a), J.L. Linden(b) and M.C.M. van de Sanden(a), (a)Eindhoven University of Technology, Department of Applied Physics, Eindhoven, The Netherlands, (b)TNO TPD, Division Models and Processes, Eindhoven, The Netherlands
- G/PII.38** ACCEPTOR RELATED LUMINESCENCE IN ZnO
A. Hoffmann(a), M. Wagner(a), J. Christen(b), F. Bertram(b), Th. Hempel(b), S. Petzold(b), A. Dadgar(b), N. Oleynik(b), and A. Krost(b), (a)Institute of Solid State Physics, Technical University Berlin, Germany, (b)Institute of Experimental Physics, Otto-von-Guericke-University Magdeburg, Germany
- G/PII.39** OPTICAL PROPERTIES OF ZnO NANORODS AND NANOWIRES. INFLUENCE OF (Zn,Mg)O ENCAPSULATION
A. Mézi, S. Anceau, T. Taliercio, T. Bretagnon, P. Lefebvre, Groupe d'Etude des Semiconducteurs, CNRS, Université Montpellier II, Case Courrier 074, 34095 Montpellier Cedex 5, France, Gyu-Chul Yi, Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Kyungbuk 790-784, Korea

- G/PII.40** MICROSTRUCTURE AND CATHODOLUMINESCENT PROPERTIES OF THERMALLY SPRAYED ERBIUM-DOPED ZIN OXIDE FILMS
 J.L. Bubendorff(b), A. El Hichou(a), J. Ebothe(a), (a)Université de Reims, UFR Sciences, Laboratoire de Microscopies & d'Etude de Nanostructures,E.A. n° 3977, 21 rue Clément Ader, 51685 Reims cedex 02, France, (b)Université de Haute Alsace, Laboratoire de Physique & de Spectroscopie Electronique, UPRESA-CNRS 7014, 4 rue des Frères Lumières, 68093 Mulhouse cedex 02, France
- G/PII.41** PIEZOELECTRIC PROPERTIES OF PULSED LASER DEPOSITED ZnO THIN FILMS
 M. Benetti(a), D. Cannatà(a), F. Di Pietrantonio(a), E. Verona(a), P. Verardi(a), N. Scarisoreanu(b), G. Dinescu(b), A. Moldovan(b), D.G. Matei(b), M. Dinescu(b), (a)CNR-Istituto di Acustica, Via del Fosso del Cavaliere 100, 00133 Rome, Italy, (b)National Institute for Laser, Plasma and Radiation Physics, PO Box MG-16 Magurele, 077125 Bucharest, Romania
- G/PII.42** INFLUENCE OF SYNTHESIS CONDITIONS ON THE MORPHOLOGY AND GRAIN SIZE OF ZINC OXIDE NANOPARTICLES
 Tomasz Strachowski(a), Edward Reszke(b), Ewa Grzanka(a), Adam Presz(a), Witold Lojkowski(a), Larisa Grigorjeva(c), Donats Millers(c), (a)Institute of High Pressure Physics PAS, Sokolowska 29/37, 01-142 Warsaw, Poland, (b)Ertec Poland, Rogowska 146/5, 54-440 Wroclaw, Poland, (c)Institute of Solid State Physics, University of Latvia, 8 Kengaraga, Riga 1063, Latvia
- G/PII.43** OPTOELECTRONIC PROPERTIES OF SnO₂/TiO₂ JUNCTIONS
 M. Kunst, T. Moehl, F. Wunsch and H. Tributsch, Bereich SolareEnergetik, Hahn Meitner Institut, Berlin, Germany
- G/PII.44** MAGNETIC PROPERTY INVESTIGATIONS ON ZnMnO
 A. Che Mofor, A. El-Shaer , A. Bakin, H.-H. Wehmann, A. Waag, Institute of Semiconductor Technology, Technical University Braunschweig, Braunschweig, Germany, H. Ahlers, U. Siegner, S. Sievers, M. Albrecht, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany, W. Schoch, N. Izyumskaya, V. Avrutin, Department of Semiconductor Physics, University Ulm, Ulm, Germany J. Stoimenos Physics Department, Aristotele University Thessaloniki, Greece
- G/PII.45** A COMPARATIVE STUDY OF Mn-DOPED ZnO LAYERS DEPOSITED BY MBE AND RF MAGNETRON SPUTTERING
 M. Abouzaid and P. Ruterana, SIFCOM UMR 6176 CNRS-ENSICAEN, 6 Boulevard du Marechal Juin, 14050 Caen Cedex, France, C. Liu, F. Yun, B. Xiao, S.-J. Cho, Y.-T. Moon and H. Morkoç Department of Electrical Engineering, Virginia Commonwealth University, Richmond VA 23284, USA

Session XI : Processing
Session chair : L. Halliburton

- G-XI.01** 8:30 ANNEALING STUDY OF ION IMPLANTED AND AS-GROWN ZnO
Thomas Moe Børseth(a), Jens S.Christensen(a), Kestutis Maknys(a), Anders Hallén(b), Bengt.G.Svensson(a) and Andrej Yu.Kuznetsov(a),(a)Centre for Materials Science and Nanotechnology, Department of Physics, University of Oslo, Oslo, 0316 Norway, (b)Department of Microelectronics and IT, Royal Institute of Technology, Stockholm, Sweden
- G-XI.02** 8:45 DAMAGE FORMATION AND ANNEALING AT LOW TEMPERATURES IN ION IMPLANTED ZnO
K. Lorenz(a), E. Alves(a), E. Wendler(b), W. Wesch(b), (a)Instituto Tecnológico e Nuclear, EN10, 2686-953 Sacavém, Portugal, (b)Insitut für Festkörperphysik, Friedrich-Schiller-Universität Jena, Max- Wien-Platz 1, 07743 Jena, Germany
- G-XI.03** 9:00 EVOLUTION OF HIGH-DOSE IMPLANTED HYDROGEN IN ZnO
E.V. Monakhov, J. Christensen, K. Maknys, B.G. Svensson and A.Yu. Kuznetsov, Department of Physics/SMN, University of Oslo, PO Box 1048 Blindern, 0316 Oslo, Norway
- G-XI.04** 9:15 TEMPERATURE-DEPENDENT CAPACITANCE STUDIES OF PALLADIUM/ZINC OXIDE SCHOTTKY DIODES
C. Weichsel, O. Pagni, E. van Wyk, and A.W.R. Leitch Department of Physics, Nelson Mandela Metropolitan University, P.O. Box 77000, Port Elizabeth, South Africa
- G-XI.05** 9:30 ANALYSIS OF A CONDUCTING CHANNEL AT THE NATIVE ZINC OXIDE SURFACE
Oliver Schmidt(a), Arnd Geis(a), Peter Kiesel(a), Noble Johnson(a), Andrey Bakin(b), Andreas Waag(b) and Gottfried Doehler(c), (a)Palo Alto Research Center, 3333 Coyote Hill Rd., Palo Alto CA 94304, USA, (b)University of Braunschweig, Institute for Semiconductor Technology, Hans-Sommer Str. 66, 38106 Braunschweig, Germany, (c)University of Erlangen, Institute for Technical Physics I, Erwin Rommel-Str. 1, 91058 Erlangen, Germany
- G-XI.06** 9:45 ELECTRICAL CHARACTERIZATION OF GROWTH- AND ETCH-INDUCED DEFECTS IN BULK-GROWN ZnO
F.D. Auret, J.M. Nel, M. Hayes and L. Wu, Physics Department, University of Pretoria, Pretoria 0002, South Africa
- G-XI.07** 10:00 STRUCTURAL AND OPTICAL PROPERTIES OF QUALITY ZnO FILMS ON Si BY ATOMIC LAYER DEPOSITION AT LOW TEMPERATURES
Suk Lee, Yong-Whan Im, Sang-Hoon Kim, and Yoon-Bong Hahn, School of Chemical Engineering and Technology, Nanomaterials Processing Research Center, Chonbuk National University, Chonju 561-756, Korea
- G-XI.08** 10:15 RAMAN SCATTERING IN ZnO NANOPARTICLES
C. Pinquier, F. Demangeot, A. Zwick, V. Paillard, J. Frandon, Laboratoire de Physique des Solides, IRSAMC, Université Paul Sabatier, 31062 Toulouse Cedex 4, France, C. Pages, M.L. Kahn, A. Maisonnat and B. Chaudret, Laboratoire de Chimie de Coordination, 205 route de Narbonne, 31077 Toulouse Cedex 04, France
- 10:30 **BREAK**

Session XII : Magnetic properties 2

Session chair : **A. Hoffmann**

- G-XII.01** 11:00 -Invited- FERROMAGNETISM IN ZnO
S. Pearton, University of Florida, Gainesville FL, USA
- G-XII.02** 11:30 MAGNETIC AND OPTICAL PROPERTIES OF SINGLE CRYSTALS OF TRANSITION METAL DOPED ZNO
M.H. Kane(a,b), W.E. Fenwick(a), M. Strassburg(a), B. Nemeth(c), R. Varatharajan³, C.R. Vestal(d), Z. John Zhang(d), J. Nause(c), C.J. Summers(b) and I.T. Ferguson(a,b), (a)Georgia Institute of Technology, School of Electrical and Computer Engineering, Atlanta GA 30332-0245, USA, (b)Georgia Institute of Technology, School of Materials Science and Engineering, Atlanta GA 30332-0250, USA, (c)Cermet, Inc., Atlanta GA 30318, USA, (d)Georgia Institute of Technology, School of Chemistry and Biochemistry, Atlanta GA 30332-0400, USA
- G-XII.03** 11:45 FABRICATION OF VERTICALLY WELL-ALIGNED FERROMAGNETIC (Zn,Mn)O NANORODS
J.M. Baik and J.-L. Lee, Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang 790-784, Korea
- G-XII.04** 12:00 OPTICS AND MAGNETO-OPTICS IN (Zn,Co)O THIN FILMS
E. Beaurepaire, G. Schmerber, J.-P. Likforman, A. Dinia, M. Gallart, O. Crégut, P. Gillot, B. Honerlague, IPCMS (CNRS-UMR 7504), 23 rue du Loess, BP 43, 67034 Strasbourg Cedex2, France, and K. Rode, A. Anane, J.-P. Contour, UMP CNRS-Thalès, Domaine de Corbeville, 91404 Orsay, France
- G-XII.05** 12:15 -Invited- POLARITON LASERS IN WIDEGAP SEMICONDUCTORS
A. Kavokin, University Clermont-II, France
- 12:45 **LUNCH**