



Strasbourg (France)

E-MRS Spring Meeting 2002
June 18 - 21, 2002

SYMPOSIUM P

Advanced Materials for Microelectronics: Ferroelectrics and Low-k Dielectrics

Symposium Organizers:

Ignazio Fragala, University of Catania, Italy

E. Maximilian Mergenthaler, Infineon Technologies AG, Erlangen, Germany

Patrick Rabinzohn, Europe Technology Development, Meylan, France

Dirk Wouters, IMEC, Leuven, Belgium

Raffaele Zambrano, STMicroelectronics, Catania, Italy

Papers will be published in
Materials Science in Semiconductor Processing

E-MRS 2002 SPRING MEETING

SYMPOSIUM P

Tuesday, June 18, 2002
Mardi 18 juin 2002

Morning
Matin

Session I: FABRICATION OF FERROELECTRIC MATERIALS

Session Chair: I. Fragaà

- 09:30 **P-I.1** FERRELECTRIC THIN & THICK FILMS FOR MYCROSYSTEMS
R.W. Whatmore, Q. Zhang and Z. Huang; School of Industrial and Manufacturing Sciences, Cranfield University, Cranfield, Bedfordshire MK43 0AL, UK.
- 10:10 **P-I.2** METAL ORGANIC VAPOR DEPOSITION OF COMPLEX MULTICOMPONENT MATERIALS
-A LEADING EDGE TECHNOLOGY FOR NEXT GENERATION DEVICES
M. Schumacher, S. Miedl, F. Schienle, J. Lindner, P. Baumann, C. Lohe and H. Juergensen
AIXTRON AG, Kackertstr 15-17, 52072 Aachen, Germany, N. Solayappan, V. Joshi, M. Lim,
C.A. Araujo and L.D. McMillan, Symetrix Corporation, 5055 Mark Dabbling Boulevard, Colorado
Springs CO 80920, USA
- 10:45 **BREAK**
- Session Chair: R.W. Whatmore
- 11:00 **P-I.3** AQUEOUS SOLUTION-GEL: PREPARATION ROUTE AND CHARACTERISATION
J. Mullens, K. Van werde, D. Mondelaers, D. Nelis, A. Hardy, H. Van den Rul, G. Vanhoyland,
M.K. Van Bael, L. Van Poucke, Limburgs Universitair Centrum, 3500 Diepenbeek, Belgium
- 11:40 **P-I.4** EPITAXIAL GROWTH OF a-AXIS-ORIENTED FERROELECTRIC $\text{Bi}_{3.25}\text{La}_{0.75}\text{Ti}_3\text{O}_{12}$ THIN
FILMS ON Si SUBSTRATES
H.N. Lee and D. Hesse, Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120
Halle(Saale), Germany
- 12:00 **P-I.5** SELECTIVE NUCLEATION OF PZT ON PRE-PATTERNED IrO_2
J.A. Johnson, J.G. Lisoni, and D.J. Wouters, IMEC, Kapeldreef 75, 3001 Leuven, Belgium
- 12:20 **P-I.6** FABRICATION AND CHARACTERIZATION OF PZT-PMWSN THIN FILM USING PULSED
LASER DEPOSITION
Cheol-Su Kim, Seong Kon Kim, and Sang Yeol Lee, Department of Electrical and Electronics
Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea
- 12:45 **LUNCH**

Wednesday, June 19, 2002
Mercredi 19 juin 2002

Afternoon
Après-midi

Session II: FUNDAMENTALS AND MODELLING OF GROWTH PROCESS AND FERROELECTRIC PROPERTIES

Session Chair: D.J. Wouters

- 14:00 **P-II.1** PIEZOELECTRIC PROPERTIES OF SPUTTERED PZT THIN FILMS: INFLUENCE OF STRUCTURE, MICRO STRUCTURE, FILM THICKNESS, (Zr, Ti) RATIO AND NIOBIUM SUBSTITUTION
D. Remiens, IEMN-DOAE-MIMM, Université de Valenciennes et du Hainaut, Cambrésis, ZI Petite Savate, 59600 Maubeuge, France
- 14:40 **P-II.2** FIRST-PRINCIPLES CALCULATIONS FOR PEROVSKITE THIN FILMS
R.L. Eglitis, University of Osnabrueck, Fachbereich Physik, 49069 Osnabrueck, Germany; **E. Heifets**, California Institute of Technology, MS 139-74, Pasadena CA 91125, USA; **E.A. Kotomin**, Max Planck Institut für Festkörperforschung, 70569 Stuttgart, Germany and Institute of Solid State Physics, University of Latvia, Riga, Latvia; **J. Maier**, Max-Planck-Institut für Festkörperforschung, D-70569 Stuttgart, Germany; **G. Borstel**, University of Osnabrueck, Fachbereich Physik, 49069 Osnabrueck, Germany.
- 15:00 **P-II.3** HOMOGENEOUS AND HETEROGENEOUS REACTIONS IN THE DECOMPOSITION OF PRECURSORS FOR THE MOCVD OF HIGH-K AND FERROELECTRIC FILMS
G. G. Condorelli, A. Baeri, I.L. Fragalà, V. Lauretta, G. Smerlo, Dipartimento di Scienze Chimiche, Università di Catania, V.le A. Doria 6, 95124 Catania, Italy
- 15:20 **P-II.4** ON THE SWITCHING CHARACTERISTICS OF STOICHIOMETRIC Mg:LiNbO₃
R. Jayavel, K. Terabe, M. Nakamura, S. Kurimura, S. Takekawa, K. Kitamura National Institute for Materials Science, 1-1, Namiki, Tsukuba, Ibaraki 305-0045, Japan
- 15:40 **P-II.5** NON-DESTRUCTIVE CHARACTERISATION OF SrBi₂Ta₂O₉ FILMS
P. Petrik(a), N.Q. Khanh(a), Z.E. Horvath(a), Z. Zolnai(a), I. Barsony(a), T. Lohner(a), M. Fried(a), J. Gyulai(a), C. Schmidt(b), C. Schneider(b), H. Ryssel(b,c), (a)Research Institute for Technical Physics and Materials Science, 1525 Budapest, P.O.B. 49, Hungary, (b)Fraunhofer-Institut für Integrierte Schaltungen, Schottkystrasse 10, 91058 Erlangen, Germany, (c)Lehrstuhl für Elektronische Bauelemente, Friedrich-Alexander Universität Erlangen-Nürnberg, Cauerstrasse 6, 91058 Erlangen, Germany
- 16:00 **BREAK**
- Session Chair: M.Kosec
- 16:30 **P-II.6** THE EFFECT OF BAKING CYCLES ON THE PROPERTIES OF FERROELECTRIC THIN FILMS
B.E. Watts and F. Leccabue, Istituto Maspec/CNR, Viale delle Scienze 37/A, 43010 Parma, Italy
- 17:10 **P-II.7** LARGE-SCALE MODELING OF THE PHASE TRANSITIONS IN KTa_{1-x}Nb_xO₃ PEROVSKITE SOLID SOLUTIONS
R.L. Eglitis, University of Osnabrueck, Department of Physics, 49069 Osnabrueck, Germany; **D. Fuks**, Ben Gurion University of Negev, Dept. Mat. Engn., 84105 Beer Sheva, Israel; **S. Dorfman**, Technion, Israel Institute of Technology, Dept. Physics, 32000 Haifa, Israel; **E.A. Kotomin**, Max Planck Institut für Festkörperforschung, 70569 Stuttgart, Germany; **G. Borstel**, University of Osnabrueck, Fachbereich Physik, 49069 Osnabrueck, Germany
- 17:30 **P-II.8** FUNDAMENTALS IN FERROELECTRIC TRANSITION OF TGS
H.V. Alexandru, C. Berbecaru Faculty of Physics, University of Bucharest, PO Box 74-165, Romania
- 17:50 **P-II.9** PRECURSOR MUTUAL INTERACTIONS IN THE KINETICS OF MOCVD OF SBT FILMS
G. G. Condorelli, A. Baeri, G. Anastasi, I.L. Fragalà, Dipartimento di Scienze Chimiche, Università di Catania, V.le A. Doria 6, 95124 Catania, Italy

Thursday, June 20, 2002
Jeudi 20 juin 2002

Morning
Matin

Session III: ISSUES FOR FERROELECTRIC INTEGRATION: ELECTRODES,
BARRIER MATERIALS

Session Chair: P. Rabinzohn

- 08:30 **P-III.1** MANUFACTURING AND PROCESS ASPECTS OF METALORGANIC CHEMICAL VAPOR DEPOSITION OF FERROELECTRIC THIN FILMS ON AN INDUSTRY STANDARD PLATFORM: AN OVERVIEW
Kaushal K. Singh, B. Bierman, H. Manchoix*, Luc Van Autryve*, Christian Mitaut*, T. Remy*; Applied Materials; 3535 garret Drive, MS10070, Santa Clara, CA 95454, USA *Applied Materials Europe; Les Jardins d'Enterprise, 11B Chemin de la Dhuy, 38246 Meylan Cedex, France
- 09:10 **P-III.2** APPLICATIONS AND ISSUES FOR FERROELECTRIC NVMs
R. Zambrano, StMicroelectronics, MPG Development Center, Stradale Primosole, 50 – 95121 Catania CT -Italy
- 09:50 **P-III.3** LOW TEMPERATURE GROWTH OF RuO₂ FOR CONDUCTIVE ELECTRODE APPLICATIONS.
K. Frohlich, A. Rosov., V. Cambel, D. Machajdík Institute of Electrical Engineering, SAS, D'bravsk. cesta 9, 842 39 Bratislava, Slovakia, S. Pignard Laboratoire des Matériaux et du Génie Physique, (UMR 5628 CNRS), ENSPG, BP 46, 38402 Saint-Martin d'Hères Cedex, France, P.K. Baumann, J. Lindner, M. Schumacher, H. Juergensen, AIXTRON AG, Kackertstr. 15-17, 52072 Aachen, Germany
- 10:10 **P-III.4** EFFECT OF PLATINUM ELECTRODES ON OPTICAL PROPERTIES OF SOL-GEL DERIVED PZT THIN FILMS
E.A. Kafadaryan, R.K. Hovsepyan, A. A. Khachaturova, N.R. Aghamalyan, G.O. Shirinyan, A.L. Manukyan, R.S. Vardanyan, A.G. Hayrapetyan, Institute for Physical Research, National Academy of Sciences, Ahtarak-2, 378410 Armenia
- 10:30 **BREAK**
- Session Chair: R. Zambrano
- 11:00 **P-III.5** MATERIALS INTEGRATION STRATEGIES FOR HIGH-DENSITY FeRAMs VIA COMPLEMENTARY IN SITU AND EX SITU STUDIES OF FILM GROWTH / INTERFACE PROCESSES AND CHARACTERIZATION OF ELECTRICAL PROPERTIES
O. Auciello and A.M. Dhote Materials Science Division, Argonne National Laboratory, Argonne IL 60439, USA; B.T. Liu, R. Ramesh Materials and Nuclear Engineering Department, University of Maryland, College Park, MD 20742, S. Aggarwal Texas Instruments, Dallas TX, USA
- 11:40 **P-III.6** EVIDENCE FOR Pt/FERROELECTRICS INTERFACE SCENARIO OF DIFFERENT FATIGUE BEHAVIORS BETWEEN Bi₄Ti₃O₁₂ AND Bi₃₋₂₅La₀₋₇₅Ti₃O₁₂ THIN FILMS CAPACITORS
M. W. Chu, M. Ganne, and L. Brohan, Institut des Matériaux Jean Rouxel UMR 6502, Laboratoire de Chimie des Solides, 2 rue de la Houssinière B. P. 32229, 44322 Nantes Cedex 3, France
- 12:00 **P-III.7** PLASMA ETCH FOR FeRAM MFM CAPACITOR STACK
L.G. Jerde, G. Beique, R.L. Fujinari, S. Marks, S.R. Ross, Tegal Corporation, Petaluma, CA 94954 USA
- 12:45 **LUNCH**

Thursday, June 20, 2002
Jeudi 20 juin 2002

Afternoon
Après-Midi

Session IV: LOW-K DIELECTRICS

Session Chair: N.Setter

- 14:00 **P-IV.1** STRATEGIES FOR ULTRALOW-K DIELECTRICS FOR INTEGRATED CIRCUIT INTERCONNECTS
G.F. Cerofolini, STMicroelectronics, Stradale primosole 50, 95121 Catania CT, Italy
- 14:40 **P-IV.2** ELABORATION AND STUDY OF LOW K DIELECTRIC MATERIALS PREPARED BY PLASMA LOW PRESSURE FROM ORGANOSILICON MOLECULES IN DECR REACTOR
Aziz Zenasni, Patrice Raynaud, Saleh Sahli and Y. Segui Laboratoire de Génie Electrique de Toulouse, Université Paul Sabatier, 31062 Toulouse, France
- 15:00 **P-IV.3** STRUCTURAL CHANGES ON FLUORINATED AMORPHOUS CARBON FILMS BY NITROGEN INCORPORATION
L. Valentini, J.M. Kenny, Materials Engineering Center, Università di Perugia, 05100 Terni, Italy, R.M. Montereali, Dip. Innovazione ENEA C.R. Frascati, 00044 Frascati (RM), Italy, L. Lozzi, S. Santucci, Dipartimento di Fisica - Unità INFN, Università dell'Aquila, 67010 Coppito (AQ), Italy
- 15:20 **P-IV.4** ELECTRICAL PROPERTIES OF LOW-DIELECTRIC-CONSTANT FILMS PREPARED BY PECVD IN O₂/CH₄/HMDSO PLASMAS
G. Borvon, A. Granier, A. Goullet, G. Turban, Laboratoire des Plasmas et Couches Minches, IMN-CNRS – Université de Nantes, 2 rue de la Houssinière, BP 32229, Nantes, France
- 15:40 **P-IV.5** ALGOFLON PTFE AS SPIN-ON ULTRALOW K DIELECTRIC MATERIAL
Paola Machetta and Marco Lazzarino, Laboratorio Nazionale TASC-INFN, Area Science, Park di Basovizza, SS 14 km 163.5, 34012 Trieste, Italy, Sergio Carrato, DEEL, University of Trieste, P.le Europa 1, 34100 Trieste, Italy, Chiara Schmid, Dip. Ing. dei Materiali e Chimica Applicata, University of Trieste, P.le Europa 1, 34100 Trieste, Italy, Giorgio Canil, Valerij Kapeliouchko, Tiziana Poggio and Aldo Sanguineti, Ausimont S.p.A, P.le Donegani 5/6, 15047 Spinetta Marengo (AL), Italy
- 16:00 **BREAK**
- 16:30-18:30** **POSTER SESSION**

POSTERS

- P/P1** FERROELECTRIC RELAXOR PMNT CRYSTALS GROWN BY HIGH PRESSURE BRIDGMAN METHOD
Irina Nicoara, D. Nicoara, Dept. of Physics, West University of Timisoara, Romania, C. Marin and A. G. Ostrogorsky, Rensselaer Polytechnic Institute, MEAEM, Troy, NY USA
- P/P2** FERROELECTRIC THIN FILMS BY CSD OF AQUEOUS SOLUTIONS
M.K. Van Bael, D. Nelis, K. Van Werde, D. Mondelaers, A. Hardy, H. Van den Rul, J. Mullens, L.C. Van Poucke, Laboratory of Inorganic and Physical Chemistry, IMO, Limburgs Universitair Centrum, 3590 Diepenbeek, Belgium, G. Vanhoyland, Materials Physics Division, IMO, Limburgs Universitair Centrum, 3590 Diepenbeek, Belgium, F. Frederix, D.J. Wouters, IMEC, 3001 Heverlee-Leuven, Belgium
- P/P3** FORMATION OF PAIRED-PLATE PRECIPITATE STRUCTURES IN $\text{Pb}_{0.91}\text{La}_{0.09}\text{Zr}_{0.65}\text{Ti}_{0.35}\text{O}_3$ FILMS GROWN ON SAPPHIRE SUBSTRATES
Cengiz S. Ozkan, University of California at Riverside, CA; Bahadir Tunaboyleu, Ken Ring, Sadik Esener, University of California at San Diego CA, USA; Ali Ata, Gebze Institute of Technology, Kocaeli, Turkey
- P/P4** PREPARATION OF EPITAXIAL PZT FILMS ON VARIOUS SUBSTRATES BY A PHOTO-INDUCED MOD
Tetsuo Tsuchiya, Yuki Miyamoto*, Iwao Yamaguchi, Takaaki Manabe, Toshiya Kumagai, To hio Tsuchiya* and Susumu Mizuta National Institute of Advanced Industrial Science and Technology (AIST) Tsukuba Central 5, *Department of Material Science and Technology, Faculty of industrial Science and technology, Sciece University of Tokyo
- P/P5** INFLUENCE OF Nb ADDITION ON PLZT THIN FILMS PREPARED BY LASER ABLATION
G. Epurescu(a), N.D. Scarisoreanu(a), D. Brodoceanu(a), F. Craciun(b), C. Galassi(c), P. Verardi(b), C. Grigoriu(a), M. Dinescu(a), (a)National Institute for Laser, Plasma and Radiation Physics, PO Box MG-16 Magurele, Bucharest 76900, Romania, (b)CNR-IDAC, Rome, Italy, (c)CNR-IRTEC, Faenza, Italy
- P/P6** ELECTRICAL PROPERTIES OF PZT MICRO TUBES FABRICATED BY ELECTROPHORETIC DEPOSITION PROCESS
Ju Hyun Yoo and Wei Gao, University of Auckland, Department of Chemical & Materials, 70 Symonds Street/Private Bag 92019, Auckland, New Zealand
- P/P7** CHARACTERIZATION OF CERIUM DOPED BARIUM ZIRCONATE TITANATE THIN FILMS DEPOSITED BY RF MAGNETRON SPUTTERING
W.S. Choi(a), Y.S. Park(a), K. Kim(a), J. Yi(a) and B. Hong(a,b), (a) School of Electrical and Computer Engineering, Sungkyunkwan University Suwon 440-746, Korea, (b)Center for Advanced Plasma Surface Technology, Sungkyunkwan University Suwon 440-746, Korea
- P/P8** $\text{Ba}_{0.7}\text{Sr}_{0.3}\text{TiO}_3$ POWDERS WITH B_2O_3 ADDITIVE PREPARED BY SOL-GEL METHOD FOR MICROWAVE APPLICATIONS
T. Hu, H. Jantunen, A. Uusimäki, S. Leppävuori, Microelectronics and Materials Physics Laboratories and EMPART Research Group of Infotech Oulu, University of Oulu, 90014 Oulu, PL 4500, Finland
- P/P9** POSITIVE TEMPERATURE COEFFICIENT OF RESISTIVITY IN THIN FILMS OF BARIUM TITANATE
I.P. Potapenko(a), S.R. Syrtsov(a), V.N. Shut(a), I.F. Kashevich(a), A.S. Sedlovsky(a), B.E. Watts(b), (a)Laboratory of Nonlinear Materials of ITA NAS Belarus, Ludnikov Av. 13, 210717 Vitebsk, Belarus, (b)Istituto Maspec/CNR, Viale delle Scienze 37/A, 43010 Parma, Italy
- P/P10** PULSED LASER DEPOSITION OF PMN THIN FILMS: A PARAMETRIC STUDY
D. Brodoceanu(a), M. Morar(a), F. Craciun(b), P. Verardi(b), C. Galassi(c), C. Grigoriu(a), M. Dinescu(a), (a)National Institute for Laser, Plasma and Radiation Physics, PO Box MG-36 Magurele, Bucharest 76900, Romania, (b)CNR-IDAC, Rome, Italy, (b)CNR-IRTEC, Faenza, Italy
- P/P11** INTEGRATION OF HIGH DIELECTRIC $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ FILMS INTO AMORPHOUS TaSiN BARRIER LAYER STRUCTURES
Ch. Wenger(a), M. Albert(a), H. Heuer(a), B. Adolphi(a), J.W. Bartha(a), F. Schlenkrich(b), (a)Semiconductor and Microsystems Technology Laboratory, University of Technology, Dresden, Germany, (b)Fraunhofer Institute for Ceramic Technologies and Sintered Materials Dresden, Germany
- P/P12** EFFECT OF SUBSTITUTION OF Ti BY Zr IN BaTiO_3 THIN FILMS GROWN BY MOCVD
R. Pantou(a), C. Dubourdieu(a), F. Weiss(a), J. Kreisel(a), G. Köbernik(b), W. Haessler(b), (a)LMGP, UMR CNRS 5628, ENSPG, BP 46, 38402 St Martin d'Hères, France, (b)IFW, Helmholtzstrasse 20, 01069 Dresden, Germany
- P/P13** TI-OUT DIFFUSION STUDY BY SIMS ANALYSIS IN SPUTTERED TI/PT AND TIOX/PT ELECTRODES FOR MICROSYSYSTEMS APPLICATIONS
Cyril Millon, Christiane Dubois, Christophe Malhaire and Daniel Barbier, LPM INSA de Lyon, 7 av. Jean Capelle, 69621 Villeurbanne, France
- P/P14** THE EFFECTS OF H_2/N_2 PLASMA AND SiH_4 TREATMENTS ON THE PROPERTIES OF MOCVD TiN DIFFUSION BARRIER FOR Cu METALLIZATION
S. Joseph, M. Eizenberg, Dept. of Materials Eng., Technion-Israel Institute of Technology, Haifa 32000, Israel and C. Marcadal, L. Chen, Applied Materials, Santa Clara 95054 CA, USA

- P/P15** LARGE-SCALE MODELING OF THE PHASE TRANSITIONS IN $\text{KTa}_{1-x}\text{Nb}_x\text{O}_3$ PEROVSKITE SOLID SOLUTIONS
R.I. Eglitis(a), D. Fuk(b), S. Dorfman(c), E.A. Kotomi(d) and G. Borstel(a), (a)University of Osnabrueck, Fachbereich Physik, 49069 Osnabrueck, Germany, (b)Ben Gurion University of Negev, Dept. Mat. Engn., 84105 Beer Sheva, Israel, (c)Technion, Israel Institute of Technology., Dept. Physics, 32000 Haifa, Israel, (d)MPI fuer Festkoerperforschung, 70569 Stuttgart, Germany
- P/P16** PHASE COMPOSITION OF PROTON EXCHANGED WAVEGUIDES IN LiNbO_3 : A SPECTROSCOPIC STUDY
M.K. Kuneva, S.H. Tonchev, Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee Blvd, 1784 Sofia, Bulgaria, E. Thatsi and D. Lampakis, Department of Physics, National Technical University of Athens, Zografou Campus Heron Polytechniou 9, 15780 Athens, Greece
- P/P17** DOMAIN ENGINEERING OF A LiNbO_3 SINGLE CRYSTAL USING A SCANNING FORCE MICROSCOPE
Kazuya Terabe(a), Shinji Higuchi(b), Shunji Takekawa(a), Masaru Nakamura(a) and Kenji Kitamura(a), (a)National Institute for Materials Science, 1-1 Namiki, Tsukuba-shi, Ibaraki 305-0044, Japan, (b)Science University of Tokyo 2641 Yamazaki, Noda-shi, Chiba 278-0022, Japan
- P/P18** DYNAMIC HYSTERESIS OF FERROELECTRIC $\text{Pb}(\text{Zr}_{0.52}\text{Ti}_{0.48})\text{O}_3$ THIN FILMS: EXPERIMENT AND MONTE-CARLO SIMULATION
J.-M. Liu, B. Pan, X.H. Zhou, and Z.G. Liu Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, China
- P/P19** PECULIAR HYSTERESIS LOOPS OF DOPED TGS CRYSTALS
H.V. Alexandru, C. Berbecaru, B. Logofatu, F. Stanculescu, M. Leonovici, Faculty of Physics, University of Bucharest, PO Box 74-165, Romania
- P/P20** DIELECTRIC CHARACTERISTIC OF PURE AND DOPED TGS CRYSTALS
C. Berbecaru, H.V. Alexandru, S. Antohe, Gabriela Conache, Faculty of Physics, University of Bucharest, PO Box 74-165, Romania
- P/P21** ENHANCEMENT OF THE DIELECTRIC PROPERTIES OF $\text{Pb}(\text{La,Ti})\text{O}_3$ THIN FILMS FOR DRAM APPLICATIONS
Kyoung Bo Han, Chang Hoon Jeon and Sang Yeol Lee, Department of Electrical and Computer Engineering, Yonsei University, 134 Shinchondong, Seodaemunku, Seoul, 120-749, Korea
- P/P22** INFLUENCE OF THE OXYGEN INCORPORATION ON THE FERROELECTRIC BEHAVIOR OF La-MODIFIED PbTiO_3 PREPARED BY PLD
E. Vasco, R. Jiménez and C. Zaldo, Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, Cantoblanco 28049 Madrid, Spain
- P/P23** PROPERTIES OF ZrO_2 THIN FILMS PREPARED BY LASER ABLATION
D.G. Matei(a), M. Morar(a), G. Epurescu(a), A. Ferrari(b), M. Balucani(b), G. Lamedica(b), G. Dinescu(a), C. Grigoriu(a), M. Dinescu(a), (a)National Institute for Laser, Plasma and Radiation Physics, PO Box MG-36 Magurele, Bucharest 76900, Romania, (b)INFN, Unit E6, University "La Sapienza", Rome, Italy
- P/P24** HIGH POROUS ALUMINA AS LOW-K DIELECTRIC FOR INTER- AND INTRA- LEVEL INTERCONNECT INSULATOR
S. Lazarouk, S. Katsouba, A. Leshok Belarusian State University Informatics and Radioelectronics, P. Browka 6, 220027, Minsk, Belarus and V. Stanovski, A. Demianovich Research and Design Company Belmicrosystems, Minsk 220600, Belarus
- P/P25** OPTIMISATION OF LOW-K POROUS SILICA FILMS INCORPORATED WITH ALKYLEN GROUPS.
Y. Uchida and T. Katoh, Teokyo Univ. of Sci. & Tech., Uenohara, Kitatsuru-gun, Yamanashi 409-0193, Japan

Friday, June 21, 2002
Vendredi 21 juin 2002

Morning
Matin

Session V: ISSUES FOR THE 100nm TECHNOLOGY NODE CMP PROCESSING,
MULTI LEVEL METALLIZATION, 100NM LITHOGRAPHIC CONSIDERATION
AND HIGH-K DIELECTRICS

Session Chair: E. Mergenthaler

- 08:30 **P-V.1** CARL – ADVANTAGES OF THIN FILM IMAGING FOR LEADING EDGE LITHOGRAPHY
E. Richter, M. Sebald, L. Chen, G. Schmid and G. Czech; Infineon Technologies AG, Germany
- 09:10 **P-V.2** SELF-ION ASSISTED DEPOSITION TECHNIQUE FOR PREPARATION OF COPPER
METALLIZATION
O.V. Kononenko, V.N. Matveev, Institute of Microelectronics Technology and High Purity
Materials, RAS, 143432 Chernogolovka, Moscow region, Russian Federation, D.P. Field, School of
Mechanical and Materials Engineering, Washington State University, Pullman WA 99164-2920,
USA
- 09:30 **P-V.3** ANISOTROPIC DEPOSITION OF COPPER BY H-ASSISTED PLASMA CVD
Masaharu Shiratani, Kousuke Takenaka, Masao Ohnishi, Hong Jie Jin, Kazunori Koga, and Yukio
Watanabe, Department of Electronics, Kyushu University, 6-10-1 Hakozaki, Fukuoka 812-8581,
Japan
- 09:50 **P-V.4** ROUTES FOR THE INTEGRATION OF HIGH AND LOW DIELECTRIC CONSTANT OXIDES
ON InP
E. Vasco and **C. Zaldo**, Instituto de Ciencia de Materiales de Madrid, Consejo Superior de
Investigaciones Científicas, 28049 Madrid, Spain
- 10:10 **P-V.5** CHARACTERIZATION OF PULSED LASER DEPOSITED Ba_{0.6}Sr_{0.4}TiO₃ ON Pt-COATED
SILICON SUBSTRATES
Ludovic Goux(a), Monique Gervais(b), Alain Catherinot(c), Corinne Champeaux(c), Frédéric
Sabary(d) and François Gervais(b), (a)LMP-STMicroelectronics, 16 rue Pierre et Marie Curie, BP
7155, 37071 Tours, France, (b)Laboratoire d'Electrodynamique des Matériaux Avancés (LEMA),
FRE2077 CNRS, LRC CEA M01, Faculté des Sciences et Techniques, Université François Rabelais,
Parc de Grandmont, 37200 Tours, France, (c)SPTCS, CNRS, UMR 6638, Limoges, (d)CEA Le
Ripault, 37260 Monts, France
- 10:30 **BREAK**
- Chairman: E. Richter**
- 11:00 **P-V.6** TUNING OF POLAR AND HIGH-K DIELECTRICS FOR MICROWAVE APPLICATIONS
N. Setter, V. Cherman and A. K. Tagantsev; Ceramics laboratory, Materials Institute, EPFL Swiss
Federal, Institute of Technology, 1015 Lausanne, Switzerland
- 11:40 **P-V.7** STRUCTURE OF BaTiO₃ THIN FILMS MODIFIED BY FILM-SUBSTRATE INTERACTION
Jaya P. Nair, Natalie Stavitski, Vera Lyahovitskaya, Ilya Zon and **Igor Lubomirsky**, Department of
Materials and Interfaces, Weizmann Institute of Science, Rehovot 76100, Israel
- 12:00 **P-V.8** FERROELECTRIC NANOSTRUCTURES
M. Alexe, C. Harnagea, A. Visinoiu, D. Hesse and U. Gosele, Max Planck Institute of
Microstructure Physics, 06120 Halle, Germany