

WOCSDICE 2008 PROGRAM IMEC, LEUVEN

Sunday 18 May

17.00: **Registration, reception and walking dinner**

Monday 19 May

8.45 – 9.00: **Welcome**

9.00 – 10.20: **Session 1: GaN HEMT devices [1]**

9.00-9.20 **Invited: GaN based electronics and sensors**

O. Ambacher

Fraunhofer Institute, Freiburg Germany

9.20-9.30 **AlGaIn/GaN HEMTs Breakdown Voltage Enhancement using AlGaIn Double Heterojunction Buffer Confinement**

E. B. Treidel, O. Hilt, F. Brunner, J. Würfl, and G. Tränkle

Ferdinand-Braun-Institut für Höchstfrequenztechnik, Berlin, Germany

9.30-9.40 **Effects of Processing Temperature on the Electrical Properties of InAlN/GaN Heterostructure Devices with Different Barrier Thicknesses**

M. Fieger⁽¹⁾, M. Eickelkamp⁽¹⁾, W. Zhang⁽¹⁾, C. Mauder⁽¹⁾, L. Rahimzadeh Khoshroo⁽¹⁾, J. Woitok⁽²⁾, H. Kalisch⁽¹⁾, M. Heuken^(1,3), R. H. Jansen⁽¹⁾, and A. Vescan⁽¹⁾

⁽¹⁾ RWTH Aachen University, Aachen, Germany; ⁽²⁾ PANalytical, Almelo, The Netherlands; ⁽³⁾ AIXTRON AG, Aachen, Germany

9.40-9.50 **On State Breakdown in InAlN/GaN HEMT**

J. Kuzmik^(1,3), M.-A. di Forte Poisson⁽²⁾, D. Gregušová⁽³⁾, N. Sarazin⁽²⁾, E. Morvan⁽²⁾, K. Fröhlich⁽³⁾, S. L. Delage⁽²⁾, D. Pogany⁽¹⁾

⁽¹⁾ TU Vienna, Austria; ⁽²⁾ Alcatel-Thales III-V Lab, Marcoussis, France; ⁽³⁾ Institute of Electrical Engineering SAS, Bratislava, Slovakia

9.50-10.00 **Gate-Length Dependent on-state 2DEG Constriction in AlGaIn/GaN HEMTs**

O. Hilt, E. Bahat-Treidel, V. Sidorov, and J. Würfl

Ferdinand-Braun-Institut für Höchstfrequenztechnik, Berlin, Germany

10.00-10.10 **Temperature Behavior of Ohmic Contacts on AlGaIn/GaN Heterostructures**

F. Iucolano^(1,2), F. Roccaforte⁽²⁾, F. Giannazzo⁽²⁾, V. Puglisi⁽³⁾, and V. Raineri⁽²⁾

⁽¹⁾ Università di Catania, Italy; ⁽²⁾ CNR-IMM, Catania, Italy; ⁽³⁾ ST-Microelectronics, Catania, Italy

10.10-10.20 **High Power Performances of GaN HEMT on SOPSIC substrate**

F. Zanon⁽¹⁾, F. Danesin⁽¹⁾, A. Tazzoli⁽¹⁾, G. Montanari⁽¹⁾, A. Chini⁽²⁾, J. Thorpe⁽³⁾, C. Gaquière⁽⁴⁾, G. Meneghesso⁽¹⁾, and E. Zanoni⁽¹⁾

⁽¹⁾ Università degli Studi di Padova, Italy; ⁽²⁾ Università di Modena e Reggio Emilia, Italy; ⁽³⁾ UMS, Ulm, Germany; ⁽⁴⁾ IEMN, Villeneuve d'Ascq, France

10.20 – 10.50: **Coffee break**

10.50 – 12.30: **Session 2: Compound Semiconductor Materials and Nanotubes**

10.50-11.00 **GaAs Surface Transformations Al Thin Film Growth by CBE Method**

T.A. Briantseva⁽¹⁾, V. E. Lyubchenko⁽¹⁾, D.V. Lioubtchenko⁽²⁾, I. A. Markov⁽¹⁾

⁽¹⁾ Institute of Radioengineering and Electronics, Fрязино, Russia ⁽²⁾ Helsinki University of Technology, Finland

- 11.00-11.10 Various Complex Buffer on the Basis of a Porous Material for GaN Epitaxy on SI Substrates**
Yu.N. Buzynin⁽¹⁾, A.Yu. Lukyanov⁽¹⁾, L.K. Orlov⁽¹⁾, V.G.Shengurov⁽²⁾, Yu.N. Drozdov⁽¹⁾, O.I.Khrykin⁽¹⁾
⁽¹⁾ Russian Academy of Sciences, Nizhny Novgorod, Russia; ⁽²⁾ Physical-Technical Institute of Nizhny Novgorod State University, Russia
- 11.10-11.20 Pulsed Laser Deposition ZnO Growth and its Properties**
A. Vincze^(1,3), J. Bruncko⁽¹⁾, M. Michalka^(1,3), P. Šutta⁽²⁾
⁽¹⁾ International Laser Centre, Bratislava, Slovak Republic; ⁽²⁾ University of West Bohemia, Plzeň, Czech Republic; ⁽³⁾ Slovak University of Technology, Bratislava, Slovak Republic
- 11.20-11.30 Molecular Beam Epitaxy of AlN Layers on Si (111) for Bulk Acoustic Wave Devices**
J.C. Moreno, E. Frayssinet, F. Semond, and J. Massies
CRHEA-CNRS, Valbonne, France
- 11.30-11.40 Improved prediction of f_T for Carbon Nanotube FETs via Use of an Energy-Dependent Effective Mass**
L. Chen, and D. Pulfrey
University of British Columbia Vancouver, Canada
- 11.40-11.50 Optoelectronic Properties of $Al_{1-x}In_xN/(AlN)/GaN$ Heterostructures**
M. Gonschorek, J.-F. Carlin, E. Feltin, M. A. Py, and N. Grandjean
Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland
- 11.50-12.00 Growth of Cubic Silicon Carbide P-N Junction on Germanium-Modified Silicon (100) Substrate**
N. Mazumder, and M. Mukherjee
West Bengal University of Technology, India
- 12.00-12.10 Microwave Annealing for High Doping Activation in SiC and GaN**
S.G. Sundaresan⁽¹⁾, M. Murthy⁽¹⁾, N. Mahadik⁽¹⁾, H. Issa⁽¹⁾, G. Aluri⁽¹⁾, M.V. Rao⁽¹⁾, Y-L. Tian⁽²⁾, S.B. Qadri⁽³⁾, M. A. Mastro⁽³⁾, C. R. Eddy Jr.⁽³⁾, R.T. Holm⁽³⁾, R.L. Henry⁽³⁾, S. Katzer⁽³⁾
⁽¹⁾ George Mason University, Fairfax, USA; ⁽²⁾ LT Technologies, Fairfax, USA; ⁽³⁾ Naval Research Laboratory, Washington D.C, USA
- 12.10-12.20 Epitaxial Growth of ZnO Whiskers on (100)-Silicon by Metallorganic Chemical Vapor Deposition**
J.-P. Biethan, L. Considine, and D. Pavlidis
Darmstadt University of Technology, Germany
- 12.20-12.30 Synthesis and Applications of Novel Vanadium Oxide Nanotubes**
A. Kumar⁽¹⁾, N. Dhawan⁽²⁾
⁽¹⁾ Stanford University, USA; ⁽²⁾ Punjab Engineering College, Chandigarh, India

12.30 – 13.30: Lunch

13.30 – 14.50: Session 3: THz Devices and Technology

13.30-13.50 Invited: Terahertz generation, detection and imaging

D. Arnone,
Teraview, Cambridge, UK

13.50-14.00 Photo-Irradiated High Power 3C-SiC Based THz Impatt Oscillator

M. Mukherjee⁽¹⁾, N. Mazumder⁽²⁾, and S. K. Roy⁽¹⁾
University of Calcutta, West Bengal, India

14.00-14.10 Room Temperature 0.5-to-6.5 THz Emission from Two-Dimensional Hot Plasmons in Doubly Interdigitated Grating-Gate HEMT's

T. Otsuji⁽¹⁾, Y.M. Meziani⁽¹⁾, H. Handa⁽¹⁾, W. Knap^{(1),(2)}, and V.V. Popov⁽³⁾
⁽¹⁾ Tohoku University, Sendai, Japan; ⁽²⁾ Universite Montpellier and CNRS, France; ⁽³⁾ Russian Academy of Sciences, Saratov, Russia

14.10-14.20 THz Frequency Multiplier Concept Based on Hot-Electron Reflection in InGaAs/InAlAs Double-Heterojunction Structures

I. Oprea⁽¹⁾, D.S. Ong⁽²⁾, and H.-L. Hartnagel⁽¹⁾

⁽¹⁾ Technical University of Darmstadt, Darmstadt, Germany, ⁽²⁾ Multimedia University, Persiaran Multimedia, Selangor, Malaysia

14.20-14.30 Noise Characterization of Double-Barrier Resonant Tunneling AlN/GaN Diodes M.V.Petrychuk⁽¹⁾, A.E.Belyaev⁽²⁾, V.A.Sydoruk⁽³⁾, A.M.Kurakin⁽³⁾, S.V.Danylyuk⁽³⁾, N.Klein⁽³⁾, and S.A.Vitusevich⁽³⁾

⁽¹⁾ Taras Shevchenko National University, Kiev, Ukraine; ⁽²⁾ Institute of Semiconductor Physics, Kiev, Ukraine; ⁽³⁾ Research Center Juelich, Germany

14.30-14.40 Broadband Schottky Diode Based THz Detector

D. Schoenherr, O. Cojocari, C. Sydlo, T. Goebel, H.L. Hartnagel, P. Meissner
Technische Universitaet Darmstadt, Germany

14.40-14.50 Materials Enable Terahertz Systems and Concepts

D.E. Diggs,
Air Force Research Laboratory, USA

14.50 – 15.20: Coffee break

15.20 – 16.50: Session 4: Compound semiconductors on large area substrates, surface passivation techniques & MOS devices

15.20-15.40 Invited: GaAs Surface Passivation for VLSI

S. Datta
Penn State University, USA

15.40-16.00 Invited: Pentacene Based Organic Thin Film Transistor Technology

J. Kováč, J. Jakabovič, D. Donoval
Slovak University of Technology, Bratislava, Slovakia

16.00-16.10 Surface State Effects and Surface Passivation with a Silicon Interface Control Layer for III-V Nanowire Transistors

M. Akazawa, and H. Hasegawa
Hokkaido University, Sapporo, Japan

16.10-16.20 Enhancement mode InGaAs MOSFETs with ALD gate dielectric: Recent Development

D. Lin^(1,2), Y. Xuan⁽¹⁾, and P. D. Ye⁽¹⁾
⁽¹⁾ Purdue University, West Lafayette, USA, ⁽²⁾ IMEC, Leuven, Belgium

16.20-16.30 Characterization of Voltage and Frequency Dependent Parasitics Observed in Si Passivated Germanium Metal Gate pMOSFETs

R.T. Krom⁽¹⁾, J. Mitard^(2,3), C. Plourde⁽¹⁾, B. De Jaeger⁽²⁾, M. Meuris⁽²⁾, M. Heyns^(2,3) ⁽¹⁾ Rochester Institute of Technology, NY, USA; ⁽²⁾ IMEC, Leuven, Belgium; ⁽³⁾ KULeuven, Belgium

16.30-16.40 Integration of III-V Materials and High-K Oxides for Sub-15 nm CMOS Devices

C. Merckling⁽¹⁾, J. Penaud⁽²⁾, A. Alian⁽¹⁾, D. Lin⁽¹⁾, C. Renard⁽¹⁾, A. Urbanczyk⁽¹⁾, G. Brammert⁽¹⁾, C. Adelman⁽¹⁾, W. Wang⁽³⁾, W. van de Graaf⁽¹⁾, S. Degroote⁽¹⁾, M. Caymax⁽¹⁾, M. Heyns⁽¹⁾, and M. Meuris⁽¹⁾

⁽¹⁾ IMEC, Leuven, Belgium; ⁽²⁾ Riber, Bezons, France; ⁽³⁾ Intel Corp. assignee at IMEC, Leuven, Belgium

16.40-16.50 C-V Interpretation and the Conductance Technique for III-V and Ge Based CMOS

K. Martens, H. Maes, and G. Groeseneken
IMEC Leuven, Belgium

Evening: Dinner & Belgian beer taste event

Tuesday 20 May:**9.00 – 10.10: Session 5: GaN HEMT devices [2]****9.00-9.20 Invited : InAlN/GaN HEMT devices**

N. Grandjean

Ecole Polytechnique Federale de Lausanne , Switzerland

9.20-9.30 AlGaN/GaN HEMTs on SI-GaN Substrates up to K_a-Band frequenciesJ.G. Felbinger⁽¹⁾, M.V.S. Chandra⁽¹⁾, L.F. Eastman⁽¹⁾, and R. Quay⁽²⁾⁽¹⁾ Cornell University School of Electrical and Computer Engineering, Ithaca, USA, ⁽²⁾ Fraunhofer Institut für Angewandte Festkörperphysik, Freiburg, Germany**9.30-9.40 Towards High Performance E-Mode InAlN/GaN HEMTs**F. Medjdoub⁽¹⁾, M. Alomari⁽¹⁾, J.-F. Carlin⁽²⁾, M. Gonschorek⁽²⁾, E. Feltn⁽²⁾, M.A. Py⁽²⁾, C. Gaquière⁽³⁾, N. Grandjean⁽²⁾, and E. Kohn⁽¹⁾⁽¹⁾ University of Ulm, Germany; ⁽²⁾ EPFL, Lausanne, Switzerland; ⁽³⁾ IEMN / TIGER, Villeneuve d'Ascq, France**9.40-9.50 Influence of Gate Position on Dispersion Characteristics of GaN HEMTs**M. Fagerlind⁽¹⁾, H. Zirath⁽¹⁾, U. Forsberg⁽²⁾, A. Lundskog⁽²⁾, A. Kakanakova-Georgieva⁽²⁾, E. Janzén⁽²⁾, and N. Rorsman⁽¹⁾⁽¹⁾ Chalmers University of Technology, Göteborg, Sweden ⁽²⁾ Linköping University, Sweden**9.50-10.00 The impact of Bulk GaN Buffer Layer on DC Characteristics of AlGaN/GaN HEMTs Devices**

E. Cho, S. Seo, and D. Pavlidis

Technische Universität Darmstadt, Germany

10.00-10.10 Intermodulation Distortion in GaN HEMTsM.J. Uren⁽¹⁾, S.J. Smith⁽¹⁾, E. Bahat-Treidel⁽²⁾, I. Khalil⁽²⁾, J. Würfl⁽²⁾, V. Krozer⁽³⁾, K. Hirche⁽⁴⁾, A.R. Barnes⁽⁵⁾⁽¹⁾ QinetiQ Ltd, Malvern, United Kingdom; ⁽²⁾ Ferdinand-Braun Institut, Berlin, Germany; ⁽³⁾ Danish Technical University, Kgs. Lyngby, Denmark; ⁽⁴⁾ Tesat-Spacecom GmbH&Co.KG, Backnang, Germany; ⁽⁵⁾ ESTEC, Noordwijk, Holland**10.10 – 10.40: Coffee break****10.40 – 12.00: Session 6: GaN Surface passivation, trapping effects & MOSHFET devices****10.40-10.50 Effects of Field Plate on Buffer-Related Lag Phenomena and Current Collapse in GaN MESFETs and HEMTs**

K. Itagaki, A. Nakajima and K. Horio

Shibaura Institute of Technology, Saitama, Japan

10.50-11.00 Normally-off AlGaN/GaN MOSHFETs with HfO₂ Gate Oxide Deposited by Pulsed-Laser DepositionT. Mizutani⁽¹⁾, S. Sugiura⁽¹⁾, S. Kishimoto⁽¹⁾, M. Kuroda⁽²⁾, T. Ueda⁽²⁾, and T. Tanaka⁽²⁾⁽¹⁾ Nagoya University, Nagoya, Japan; ⁽²⁾ Semiconductor Device Research Center, Semiconductor**11.00-11.10 Effects of Surface and Buffer Traps in Passivated AlGaIn-GaN HEMT**M. Faqir⁽¹⁾, G. Verzellesi⁽¹⁾, A. Chini⁽¹⁾, F. Fantini⁽¹⁾, F. Danesin⁽²⁾, F. Rampazzo⁽²⁾, G. Meneghesso⁽²⁾, E. Zanoni⁽²⁾, N. Labat⁽³⁾, A. Touboul⁽³⁾, and C. Dua⁽⁴⁾⁽¹⁾ University of Modena and Reggio Emilia, Modena, Italy; ⁽²⁾ University of Padova, Italy; ⁽³⁾ Université Bordeaux, Talence Cedex, France; ⁽⁴⁾ Alcatel-THALES III-V Lab/Tiger, Marcoussis, France**11.10-11.20 Characterization of Al₂O₃/AlGaIn/GaN Moshfets by Measurements at Elevated Ambient Temperatures**P. Kordos^(1,2), M. Florovič⁽¹⁾, D. Gregušová⁽²⁾, L. Harmatha⁽¹⁾, J. Kováč⁽¹⁾, D. Donoval⁽¹⁾⁽¹⁾ University of Technology, Bratislava, Slovakia; ⁽²⁾ Slovak Academy of Sciences, Bratislava, Slovakia**11.20-11.30 Effect of Al₂O₃ Dielectric on Characteristics of AlGaIn/GaN HEMTs and MISFETs**

H.F. Sun and C.R. Bolognesi

Swiss Federal Institute of Technology, ETH-Zürich, Switzerland

11.30-11.40 Characterization of Semiconductor/Oxide Interface States in the $\text{Al}_2\text{O}_3/\text{InAlN}/\text{GaN}$ MOS structure

M. Ľapajna⁽¹⁾, K. Čičo⁽¹⁾, J. Kuzmík^(1,2), G. Pozzovivo⁽²⁾, D. Pogany⁽²⁾, J.-F. Carlin⁽³⁾, N. Grandjean⁽³⁾, K. Fröhlich⁽¹⁾

⁽¹⁾ Slovak Academy of Sciences, Bratislava, Slovakia; ⁽²⁾ TU Vienna, Austria; ⁽³⁾ Ecole Polytechnique Federale de Lausanne, Switzerland

11.40-11.50 The Influence of Fluoride Based Gate Etch Process on the Current Collapse of AlGaIn/GaN HEMTs

A. Lorenz, J. John, J. Derluyn, K. Cheng, J. Das, M. Germain, G. Borghs^(1,2)

IMEC, Leuven, Belgium

11.50-12.00 Investigation of Passivation strategies for AlGaIn/GaN-MISHFETs on Silicon Substrates

M. Eickelkamp, C. Lautensack, A. Nocolak, H. Kalisch, R. H. Jansen, and A. Vescan

RWTH Aachen University, Germany

12.00 - 13.00: Lunch

13.00 - 14.50: Session 7: Reliability & Thermal investigation of GaN devices

13.00-13.20 Invited: Reliability and Thermal Management

M. Kuball⁽¹⁾, J.W. Pomeroy⁽¹⁾, G.J. Riedel⁽¹⁾, R.J.T. Simms⁽¹⁾, A. Manoi⁽¹⁾, A. Sarua⁽¹⁾, M.J. Uren⁽²⁾, and T. Martin⁽²⁾

⁽¹⁾H.H. Wills Physics Laboratory, Bristol, United Kingdom; ⁽²⁾ QinetiQ, Malvern, United Kingdom

13.20-13.40 Invited: GaN HEMT Critical Voltage Determination by DC-Step-Stress Tests

P. Ivo, R. Pazirandeh, E. Bahat-Treidel, O. Hilt, R. Lossy, J. Würfl, and G. Tränkle

Ferdinand-Braun-Institut für Höchstfrequenztechnik, Berlin, Germany

13.40-13.50 Use of Micro-Raman Thermography in the Study of Electrical Properties of AlGaIn/GaN HEMTs

R.J.T. Simms⁽¹⁾, J.W. Pomeroy⁽¹⁾, G.J. Riedel⁽¹⁾, M.J. Uren⁽²⁾, T. Martin⁽²⁾ and M. Kuball⁽¹⁾

⁽¹⁾ University of Bristol, United Kingdom; ⁽²⁾ QinetiQ Ltd., Malvern, United Kingdom

13.50-14.00 An Analytical Model for Surface Leakage Currents of AlGaIn/GaN HFETs and Effects upon Device Reliability

W. Kuang, R.J. Trew, and G.L. Bilbro

North Carolina State University, Raleigh, USA

14.00-14.10 Development of Time-Resolved UV Micro-Raman Spectroscopy to Analyse Self-Heating Effects in AlGaIn/GaN HEMTs

O. Lancry⁽¹⁾, E. Pichonat⁽¹⁾, J. Réhault⁽¹⁾, M. Moreau⁽¹⁾, C. Gaquière⁽²⁾

⁽¹⁾ Université des Sciences et Technologies de Lille, Villeneuve d'Ascq cedex, France; ⁽²⁾ IEMN, Villeneuve d'Ascq Cedex, France

14.10-14.20 Heat Resistant Barrier Contacts Made on the Basis of TiB_x and ZrB_x to Silicon, SiC and some Wide-Gap III-V Semiconductor Compounds

A.E. Belyaev⁽¹⁾, N.S. Boltovets⁽²⁾, V.N. Ivanov⁽²⁾, R.V. Konakova⁽¹⁾, Ya.Ya. Kudryk⁽¹⁾, V.V. Milenin⁽¹⁾, V.N. Sheremet⁽¹⁾

⁽¹⁾ V. Lashkaryov Institute of Semiconductor Physics, Kyiv, Ukraine; ⁽²⁾ State Enterprise Research Institute "Orion", Kyiv, Ukraine

14.20-14.30 Charge Control Analysis of Gallium Nitride Semiconductor Heterostructures and Comparison with GaAs HFET Failure Mechanisms

S. Salemi and A. Christou

University of Maryland, USA

14.30-14.40 On the Lifetime of Coupled Modes in GaN

A. Dyson⁽¹⁾, and B.K. Ridley⁽²⁾

⁽¹⁾University of Hull, UK; ⁽²⁾University of Essex, Colchester, UK

14.40-14.50 Improved Robustness of GaN-on-Si HEMTs under High Electric Field Conditions by Etching Gate Technology

D. Marcon, A. Lorenz, J. Derluyn, J. Das, R. Mertens, M. Germain and G. Borghs

IMEC Leuven, Belgium

Guided tour through Leuven city center & Dinner at Faculty club

Wednesday 21 May:**9.00 – 10.20: Session 8: Compound Semiconductor devices, circuits and applications****9.00-9.20 Invited: InP D-HBT Circuits Operating up to 300 GHz for Next Generation Data Transmission Systems**

Y. Baeyens, N. Weimann, V. Houtsmas, J. Weiner, Y. Yang, J. Frackoviak, P. Roux, A. Tate, Y.K. Chen
Alcatel-Lucent / Bell Laboratories, Murray Hill, NJ, USA

9.20-9.30 All-Electric Semiconductor Spin Polarizer and Detector

P. Debray⁽¹⁾, S. Rahman⁽¹⁾, S. Herbert⁽²⁾ and R. S. Newrock⁽¹⁾

⁽¹⁾ University of Cincinnati, Cincinnati, USA; ⁽²⁾ Xavier University, Cincinnati, USA

9.30-9.40 Single Stage, 47 W, Class-AB Power Amplifier using WBG SiC Transistor

S. Azam⁽¹⁾, R. Jonsson⁽²⁾ and Q. Wahab^{(1),(2)}

⁽¹⁾ Linköping University, Linköping, Sweden; ⁽²⁾ Swedish Defense Research Agency, Linköping, Sweden

9.40-9.50 Simulation and Technological Approach of an 306 GHz Heterostructure Barrier Charge Swing

B. Nicolae and H. L. Hartnagel

TU-Darmstadt, Germany

9.50-10.00 RF Mems Switches with III-N Technology

E. Sillero, J. Pedrós, R. San Román, G. F. Iriarte, F. Calle

Universidad Politécnica de Madrid, Spain

10.00-10.10 Robust X-Band AlGaIn/GaN Low Noise Amplifier MMICs

M. van Heijningen⁽¹⁾, J.P.B. Janssen⁽¹⁾, F.E. van Vliet⁽¹⁾, A. Megej⁽²⁾

⁽¹⁾ TNO Defence, The Hague, The Netherlands; ⁽²⁾ Solianis Monitoring AG, Zürich, Switzerland

10.10-10.20 Dielectric Rod Waveguide Traveling Wave Amplifier

D.V. Lioubtchenko⁽¹⁾, V.E. Lyubchenko⁽²⁾, P. Pousi⁽¹⁾, S.N. Dudorov⁽¹⁾, A.V. Räisänen⁽¹⁾

⁽¹⁾ Helsinki University of Technology, Finland; ⁽²⁾ Institute of Radioengineering and Electronics, RAS, Fрязино, Moscow Reg., Russia

10.20 – 10.40 Coffee break**10.40– 12.40 Session 9: Opto-electronics****10.40-11.00 Invited: Nitride based detectors from UV to X**

J.-Y. Duboz⁽¹⁾, J. Brault⁽¹⁾, J.L. Reverchon⁽²⁾, J. John⁽³⁾, P. Malinowski⁽³⁾, M. Germain⁽³⁾, J.-F. Hochedez⁽⁴⁾, A. BenMoussa⁽⁴⁾, B. Giodanengo⁽⁴⁾

⁽¹⁾ CRHEA, Valbonne, France; ⁽²⁾ Thales TRT, Palaiseau Cedex, France; ⁽³⁾ IMEC, Leuven, Belgium; ⁽⁴⁾ Royal Observatory of Belgium, Brussels, Belgium

11.00-11.20 Invited: III-V Photonics

L. Liu, D. Van Thourhout

University of Gent, Belgium

11.20-11.30 Light-Emitting Diodes with Photonic Crystal Grating Fabricated by Microsphere Lithography

W.N. Ng, C.H. Leung, P.T. Lai, H.W. Choi

University of Hong Kong, China

11.30-11.40 Quantum Cascade Detectors for MID-IR Sensing Applications

D. Hofstetter⁽¹⁾, F.R. Giorgetta⁽¹⁾, E. Baumann⁽¹⁾, M. Fischer⁽²⁾, and J. Faist⁽²⁾

University of Neuchâtel, Switzerland; ⁽²⁾ ETH Zurich, Institute of Quantum Electronics, Zurich, Switzerland

11.40-11.50 Evanescent Waves Contribution into Efficiency of Light-Emitting Diodes with Grating Patterned Top Surface

M. Barabanenkov⁽¹⁾, V. Sirotkin⁽¹⁾, Yu.Kholopova⁽¹⁾, A. Kovalchuk⁽¹⁾, N.Antonova⁽²⁾, E. Polushkin⁽¹⁾, S. Shapoval⁽¹⁾
⁽¹⁾ Institute of Microelectronics Technology RAS, Chernogolovka, Russi; ⁽²⁾ R&D Corporation "Istok", Fryazino, Russia

11.50-12.00 Effect of Laser Treatment on Absorption Spectra of Si₃N₄-Si-SiO₂ Structures

A.E. Belyaev⁽¹⁾, R.V. Konakova⁽¹⁾, O.B. Okhrimenko⁽¹⁾, A.M. Svetlichnyi⁽²⁾

⁽¹⁾ V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine; ⁽²⁾ Taganrog State Radio Engineering University, Taganrog, Russia

12.00-12.10 Extreme Ultraviolet Al_{1-x}Ga_xN Photodetectors for Future Solar Missions

P.E. Malinowski^(1,2), J. John⁽¹⁾, P. Aparicio Alonso⁽¹⁾, A. Lorenz⁽¹⁾, K. Cheng⁽¹⁾, J. Derluyn⁽¹⁾, M. Germain⁽¹⁾, G. Borghs^(1,2), R. Mertens^(1,2), J.Y. Duboz⁽³⁾, U. Kroth⁽⁴⁾, M. Richter⁽⁴⁾

⁽¹⁾ Interuniversity MicroElectronic Center, Leuven, Belgium; ⁽²⁾ Katholieke Universiteit Leuven, Leuven, Belgium; ⁽³⁾ CRHEA, Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, Valbonne, France; ⁽⁴⁾ Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany

12.10-12.20 Modelling of Erbium-Doped Alumina Fiber Amplifiers

S. Rebouh, M. Remram

Constantine University, Algeria

12.20-12.30 Optimization of InGaN/GaN MQW Structures for High Responsivity

J. Pereiro⁽¹⁾, C. Rivera⁽¹⁾, A. Navarro⁽¹⁾, E. Muñoz⁽¹⁾, J.L. Pau⁽¹⁾, R. Czernecki⁽²⁾, S. Grzanka⁽²⁾, M. Leszczynski⁽²⁾,

⁽¹⁾ ISOM, IEL, ETSI Telecomunicación, UPM, Ciudad Universitaria, Madrid, Spain; ⁽²⁾ Unipress, Polish Academy of Sciences, Warsaw, Poland

12.30-12.40 Analysis of the Degradation of Blu-Ray Laser Diodes

N. Trivellin⁽¹⁾, M. Meneghini⁽¹⁾, G. Meneghesso⁽¹⁾, L. Trevisanello⁽¹⁾, K. Orita⁽²⁾, M. Yuri⁽²⁾, D. Ueda⁽²⁾, and E. Zanoni⁽¹⁾

⁽¹⁾ University of Padova, Italy; ⁽²⁾ Matsushita Electric Industrial Ltd., Takatsuki City, Osaka, Japan

12.40-14.00 Lunch & Conference Closing