

PROGRAMME

Sunday November 1

- 17:00 – 19:00 Registration
19:30 – 21:00 Welcome Dinner

Monday November 2

- 8:00 – 8:45 Registration
8:45 – 9:00 Welcome and Conference Opening
- 9:00 – 10:15 Session 1 - GaN Growth**
Chair: G. Verzellesi
- 9:00 – 9:30 **Progress in the heteroepitaxy of III-nitrides by plasma assisted MBE**
invited *A. Georgakilas*
- 9:30 – 9:45 **Regrowth of GaN quantum wells on GaN substrates for TeraHertz generation by amplification of transverse electromagnetic waves**
M. Chmielowska, S. Chenot, Y. Cordier, T. Laurent, P. Nouvel, J. Torres, C. Palermo, L. Chusseau, L. Varani, B. Beaumont
- 9:45 – 10:00 **Effect of surface kinetics in the growth of a-plane GaN on r-plane sapphire by molecular beam epitaxy**
G. Tsiakatouras, K. Tsagaraki, J. Domagala, J. Smalc-Koziorowska, G. P. Dimitrakopoulos, Ph. Komninou, E. Iliopoulos and A. Georgakilas
- 10:00 – 10:15 **Light-matter coupling of semipolar GaInN quantum wells by selective area growth of sub-micrometer sized 3D gratings**
T. Wunderer, A. Chuvilin, Y. Men, F. Lipski, S. Schwaiger, J. Wang, E. Kohn, U. Kaiser, F. Scholz
- 10:15 – 10:45 COFFEE BREAK**
- 10:45 – 12:15 Session 2 - III-V Devices**
Chair: M. Missous
- 10:45 – 11:15 **UMS Gallium Arsenide pHEMT Technologies – from C to W-Band**
invited *J. Grünenpütt*
- 11:15 – 11:30 **6K-300K study of Alsb/InAs HEMTs for low power operation**
A. Noudeviwa, Y. Roelens, F. Danneville, A. Olivier, S. Lepilliet, G. Dambrine, L. Desplanque, X. Wallart, S. Bollaert, G. Moschetti, J. Grahn
- 11:30 – 11:45 **Design of field-plated InP-based HEMTs**
D. Saguatti, V. Di Lecce, M. Esposito, A. Chini, F. Fantini, G. Verzellesi, S. Boulay, A. Bouloukou, B. Boudjelida, M. Missous
- 11:45 – 12:00 **N-type ohmic contacts study on AlInSb/InGaSb heterostructure for high speed and low power HEMTs fabrication**
A. Olivier, N. Wichmann, Y. Roelens, L. Desplanque, X. Wallart, S. Lepilliet, G. Dambrine, S. Bollaert
- 12:00 – 12:15 **An Insight into the Parasitic Capacitances of SOI and Bulk FinFET Devices**
A. Griffoni, S. Thijs, D. Linten, M. Scholz, G. Groeseneken, G. Meneghesso

12:30 – 14:00 LUNCH

14:00 – 15:30 Session 3 - Advanced GaN HEMTs

Chair: D. Theron

14:00 – 14:30 **Thermal management with LTCC-packages**
invited *T. Bartnitzek*

14:30 – 14:45 **High temperature operation of GaN HEMTs**
D. Maier, E. Kohn

14:45 – 15:00 **(0001) GaN grown on (111) single crystal diamond substrate for high power electronic applications**
A. Dussaigne, M. Maliverni, D. Martin, A. Castiglia, N. Grandjean

15:00 – 15:15 **Diamond on GaN for high power application**
M. Alomari, E. Kohn

15:15 – 15:30 **Characterization of quaternary Nitride HFETs**
N. Ketteniss, M. Eickelkamp, L. R. Khoshroo, H. Kalisch, R. H. Jansen, A. Vescan,

15:30 – 16:00 COFFEE BREAK

16:00 – 17:30 Session 4 - GaN Device Characteristics

Chair: A. Wieck

16:00 – 16:15 **Study of microwave performances of AlGaIn/GaN and AlInN/GaN HEMT devices up to 18GHz**
G. Callet, O. Jardel, N. Sarazin, E. Morvan, M.A. Poisson, M. Oualli, E. Chartier, T. Reveyrand, J-P. Teyssier, S. Piotrowicz, R. Quéré, S.L. Delage

16:15 – 16:30 **Breakdown Investigation on AlGaIn/GaN-HEMT Devices**
A. Tazzoli, G. Monaco, P. Nicolosi, E. Zanoni, G. Meneghesso

16:30 – 16:45 **Analysis of Schottky diodes I-V characteristics prepared on InAlN/GaN structures**
J. Kovac, D. Donoval, M. Florovic, A. Satka, A. Chvala, L. Stuchlikova, G. Pozzovivo, J. Kuzmik, G. Strasser, D. Pogany, J.-F. Carlin, M. Gonschorek, E. Feltin, N. Grandjean

16:45 – 17:00 **Influence of interface states at Schottky junction on the large signal behaviour of Cu-gate standard AlGaIn/GaN HEMTs**
M. Esposito, V. Di Lecce, M. Bonaiuti, F. Fantini, A. Chini, G. Verzellesi, S. De Guido, M. De Vittorio, A. Passaseo

17:00 – 17:15 **Investigation of nanosecond-time-scale dynamics of electric field distribution and breakdown phenomena in InAlN/GaN TLM structures**
S. Bychikhin, R. Ferreyra, C. Ostermaier, G. Pozzovivo, J. Kuzmik, M. Coquelin, M. Alomari, E. Kohn, M.-A. di Forte-Poisson, S.L. Delage, G. Strasser, D. Pogany

17:15 – 17:30 **Effects of Electro-Thermal stress on AlGaIn deep-ultraviolet LEDs**
N. Trivellin, M. Meneghini, M. Dal Lago, G. Meneghesso, L. Rodighiero, G. Mura, M. Vanzi, E. Zanoni

19:30 – 21:00 DINNER

Tuesday November 3

9:00 – 10:45 Session 5 - Surface and Bio-chemistry

Chair: A. Georgakilas

9:00 – 9:30 **Group III-nitride nanostructures for chemical transducers**

invited

M. Eickoff

9:30 – 9:45 **Transparent diamond electrodes on sapphire**

E. Colombo, E. Kohn

9:45 – 10:00 **A novel bio-functionalization of AlGaIn/GaN-pH-Sensors for AlGaIn/GaN DNA-sensors**

S. Linkohr, S. Schwarz, S. Krischok, P. Lorenz, V. Cimalla, Ch. Nebel, O. Ambacher

10:00 – 10:15 **Recent progress in the understanding of the H-terminated diamond surface**

D. Kück, E. Kohn

10:15 – 10:45 **Single crystal diamond films on silicon: A semiconductor material for the formation of wide band gap heterostructures**

invited

M. Schreck

10:45 – 11:15 COFFEE BREAK

11:15 – 12:30 Session 6 - MEMS. Materials and Devices

Chair: M. Eickoff

11:15 – 11:45 **Diamond Growth for MEMS applications**

invited

O. Williams

11:45 – 12:00 **Amplification of nanoscale motion by piezoelectric transduction in GaN resonators**

M. Faucher, B. Grimbert, Y. Cordier, N. Baron, A. Wilk, H. Lahreche, P. Bove, M. François, P. Tilmant, T. Gehin, C. Legrand, M. Werquin, L. Buchailot, C. Gaquière, D. Théron

12:00 – 12:15 **Evidence of protons induced contact degradation on ohmic RF-MEMS switches**

A. Tazzoli, M. Barbato, S. Gerardin, G. Monaco, P. Nicolosi, A. Paccagnella, G. Meneghesso

12:15 – 12:30 **Optimization of c-axis oriented reactive sputter deposited AlN films**

J.G. Rodríguez, G.F. Iriarte, F. Calle

12:30 – 14:00 LUNCH

14:00 – 15:45 Session 7 - MEMS (II) and Optoelectronic Devices

Chair: O. Williams

14:00 – 14:30 Energy Harvesting: from MEMS to Oxide Semiconductors

invited *D. Pavlidis*

14:30 – 14:45 MEMS in GaN

P. Benkart, U. Heinle, I. Daumiller, M. Kunze, E. Sönmez

14:45 – 15:00 Piezoelectrically actuated AlN and Nanodiamond microstructures

F Knöbber, E Sillero, C-C Röhlig, O A Williams, R E Sah, L Kirste, V Cimalla, C.E. Nebel, F Calle, V Lebedev*

15:00 – 15:15 Growth and characterisation of InAsN dilute nitride semiconductor alloys for the mid-infrared spectral range

M. de la Mare, Q. Zhuang, A. Krier

15:15 – 15:30 Temperature Dependence of Dark Current in a p-i-n Photodiode Incorporating a Resonant Tunneling Structure

A. Sellai, M. Henini and Z. Ouennoughi

15:30 – 15:45 Applications of nanites as protective and stabilizing layers in photosensitive devices

A. Buzynin, Yu. Buzynin, E. Lomonova, V. Panov, I. Chinareva, M. Sidorov, M. Trishenkov, A. Filachev

15:45 – 16:00 COFFEE BREAK

16:00 – 17:30 INVITED SESSION

Chair: A. Denisenko

16:00 – 16:30 SiC - a semiconductor for demanding automotive applications

P. Bergman

16:30 – 17:00 Lateral structures by implantation of focused ion beams in III-V semiconductors

A. Wieck

17:00 – 17:30 Graphene-based Devices

D. Jena

19:30 – 21:00 WORKSHOP BANQUET

Wednesday November 4

9:00 – 10:30 **Session 9 – ZnO and diamond-based heterostructures**

Chair: Y. Cordier

9:00 – 9:30 **Top-gate ZnO nanowire transistors with ultrathin organic gate dielectric**

invited

D. Kaeblein

9:30 – 9:45 **Epitaxial growth of coaxial ZnO-GaN hetero-nanorods and InGaN-GaN hetero-nanotubes**

M.Fikry, S.B. Thapa, J. Hertkorn, T. Wunderer, F. Lipski, F. Scholz, A. Reiser, Y. Xie, M. Feneberg, K. Thonke, R. Sauer, M. Dürrschnabel, L.D. Yao, D. Gerthsen

9:45 – 10:00 **III-V hetero structures on sapphire substrates and buffer layers**

Yu. Buzynin, A. Buzynin, V.V. Osiko, M. Drozdov, E. Lomonova, O. Khrykin, B. Zvonkov

10:00 – 10:30 **Graphene – Two-dimensional carbon at atomic resolution**

invited

J. Meyer

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 **Session 10 - AlGaN/GaN HEMTs**

Chair: E. Kohn

11:00 – 11:15 **A Simulation Study of Enhancement-Mode AlGaN/GaN HEMTs with Recessed Gates**

S. Vitanov, V. Palankovski, S. Maroldt, R. Quay

11:15 – 11:30 **Gate leakage in AlGaN/GaN HEMTs utilizing a dielectric assisted gate process - a simulation study**

M. Hosch, R. Behtash, J. Thorpe, H. Blanck, H. Schumacher

11:30 – 11:45 **Influence of RF drive and switching frequency on degradation mechanisms in GaN HEMTs**

V. Di Lecce, M. Esposito, M. Bonaiuti, F. Fantini, A. Chini, G. Meneghesso, E. Zanoni

11:45 – 12:00 **Characterization of AlGaN/GaN HFETs and MOSHFETs by time dependent capacitance measurements**

R. Stoklas, D. Gregušová, J. Novák and P. Kordoš

12:00 – 12:15 **Trap analysis on GaN HEMT after DC accelerated tests**

A. Stocco, N. Ronchi, F. Zanon, E. Zanoni, G. Meneghesso, A. Chini, M. Peroni

12:15 – 12:30 **Preparation and testing of dielectric-metal-semiconductor hetero structure for generation of hypersound by laser**

A. Buzynin, Yu. Buzynin, B. Zvonkov, T. Pezeril, G. Vaudel, P. Ruello, M. Edely, D. Mounier, J-M. Breteau, V. Gusev

12:30 – 12:40 Conference CLOSING

12:40 – 14:00 LUNCH