# The Third International Conference on Nitride Semiconductors

# ICNS3

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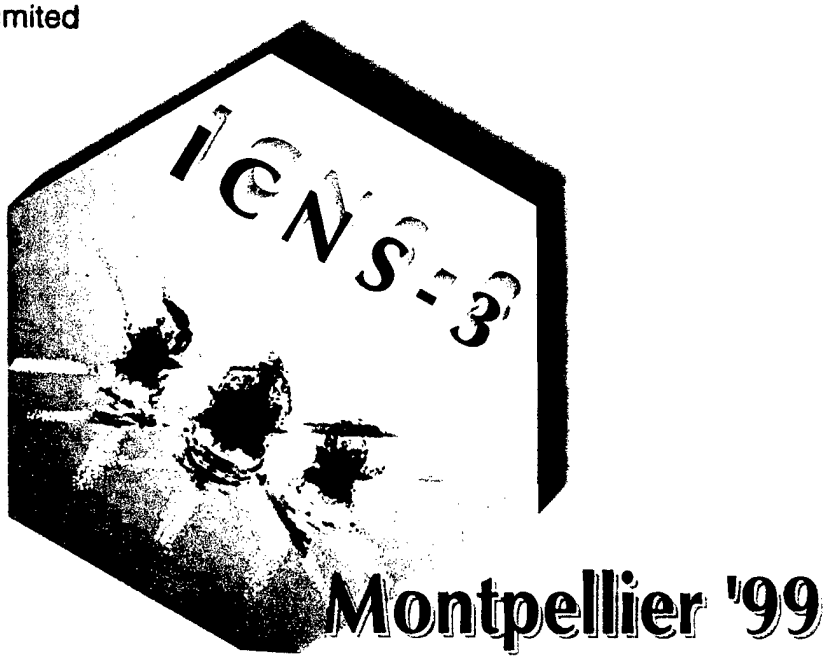


19991004 215

Montpellier, France

July 4-9, 1999

## PROGRAMME

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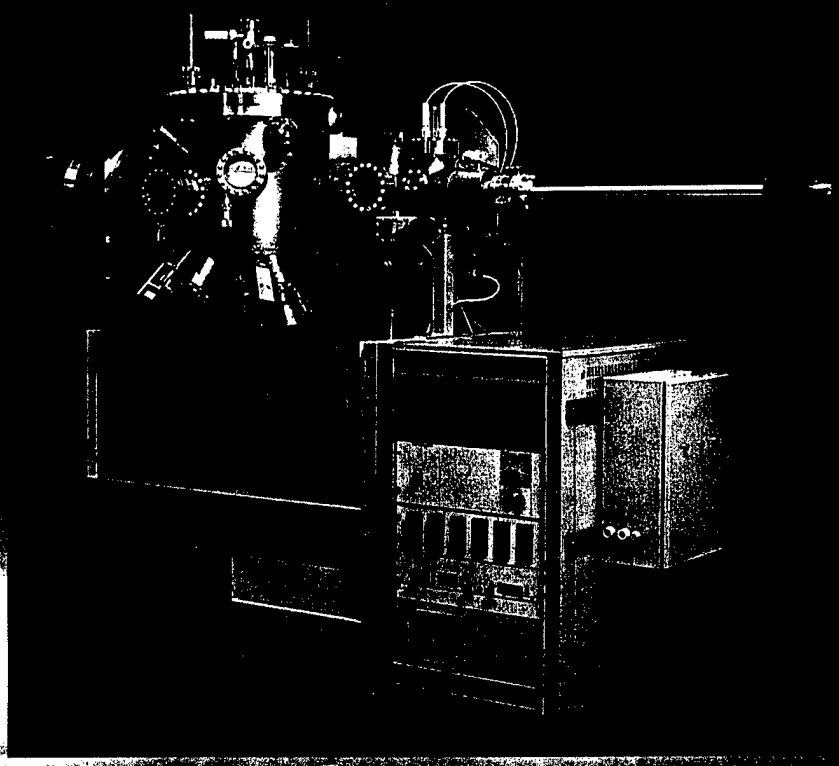
DTIC QUALITY INSPECTED 4

GALLIUM NITRIDE AND RELATED COMPOUNDS

BLUE LASERS & HIGH POWER ELECTRONICS

# RIBER COMPACT 21



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# GENERAL PROGRAMME

## Sunday July 4th, 1999

15.00-19.00 REGISTRATION

## Monday July 5th, 1999

08.00 Registration

09.00-09.30 OPENING SESSION – Room : PASTEUR

09.30-10.30 Conferences

10.30-11.00 OPENING OF THE EXHIBITION - COFFEE BREAK

11.00-12.30 Working session

12.30-14.30 LUNCH BREAK

14.30-16.45 Working session

16.45-18.45 POSTER SESSION I – COFFEE BREAK *(offered by EMCORE Corp.)*

19.00 WELCOMING COCKTAIL – Room : SALON CENTRAL Level 3
*Offered by Mr. Georges FRECHE, Member of Parliament and Mayor of Montpellier, and the local council*

## Tuesday July 6th, 1999

08.30-10.30 Working session

10.30-11.00 VISIT OF THE EXHIBITION - COFFEE BREAK

11.00-12.30 Working session

12.30-14.30 LUNCH BREAK

14.30-16.45 Working session

16.45-18.45 POSTER SESSION II – COFFEE BREAK *(offered by RIBER S.A.)*

18.45 Round table

## Wednesday July 7th, 1999

08.30-10.45 Working session

10.45-11.15 VISIT OF THE EXHIBITION - COFFEE BREAK

11.15-12.30 Special session in honour of Professor AKASAKI

12.30-14.30 LUNCH BREAK

14.30-16.45 Working session

16.45-18.45 POSTER SESSION III – COFFEE BREAK *(offered by EPICHEM LTD.)*

18.45 CONCERT - Room : PASTEUR

## Thursday July 8th, 1999

08.30-10.30 Working session

10.30-11.00 VISIT OF THE EXHIBITION - COFFEE BREAK

11.00-12.30 Working session

12.30-14.30 LUNCH BREAK

14.30-17.00 Working session

19.15 Departure by bus for the VALMAGNE ABBEY
*Meeting place : "Parvis" of the Convention Centre (in front of the level 3 Entrance, side Esplanade)*

20.00 CONFERENCE BANQUET *(for registered persons)*

## Friday July 9th, 1999

08.30-10.30 Working session

10.30-11.00 VISIT OF THE EXHIBITION - COFFEE BREAK *(offered by AIXTRON AG)*

11.00-12.15 Working session

12.15 CLOSING SESSION

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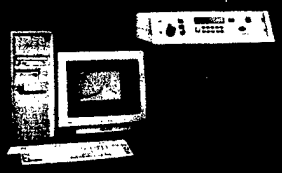

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# SCIENTIFIC PROGRAMME

* = *invited*

## Monday July 5th, 1999

### Session sponsored by PICOGIGA

09:00 **OPENING SESSION**

09:30 **Mo_01** GALLIUM NITRIDE AS SEEN BY THE INDUSTRY
**Jean Yves Duboz***

10:00 **Mo_02** PRESENT STATUS OF InGaN-BASED LEDs AND LASER DIODES
**Shuji Nakamura***

### Session sponsored by EMCORE Corp.

11:00 **Mo_03** INFLUENCE OF InGaN INHOMOGENEITY ON NITRIDE LASERS
**K. Domen*, A. Kuramata, R. Soejima, S. Kubota, K. Horino, T. Tanahashi**

11:30 **Mo_04** EFFECT OF THE CONFINEMENT LAYER DESIGN ON THE LUMINESCENCE OF InGaN/GaN SINGLE QUANTUM WELLS
**S. Keller, S. B. Fleischer, S. F. Chichibu, J. E. Bowers, U. K. Mishra, S. P. DenBaars**

11:45 **Mo_05** COMPARISON OF InGaN/GaN QUANTUM WELLS GROWN ON SAPPHIRE AND BULK GaN SUBSTRATES
**S. Sakai, T. Sugahara, Q. Fareed, S. Tottori, M. Lachab, T. Wang**

12:00 **Mo_06** INVESTIGATION OF THE OPTICAL PROPERTIES IN InGaN/GaN MUTIPLE QUANTUM WELLS AND SINGLE QUANTUM WELL
**T. Wang, D. Nakagawa, M. Lachab, T. Sugahara, S. Sakai**

12:15 **Mo_07** COMPARISON OF OPTICAL PROPERTIES BETWEEN GaN AND InGaN QUANTUM WELLS
**P. Riblet, H. Hirayama, A. Kinoshita, A. Hirata, T. Sugano, Y. Aoyagi**

### Session sponsored by AIXTRON AG

14:30 **Mo_08** PRESSURE STUDIES OF DEFECTS AND IMPURITIES IN NITRIDES
**T. Suski***

15:00 **Mo_09** THE EFFECT OF DOPING AND GROWTH STOICHIOMETRY ON THE PROPERTIES OF THREADING EDGE DISLOCATION IN GaN
**A.F. Wright*, K. Leung**

15:30 **Mo_10** INVESTIGATIONS ON THE V-DEFECT FORMATION IN GaInN-GaN MULTI QUANTUM WELL STRUCTURES
**J. Off, F. Scholz, A. Kniest, O. Gfrörer, A. Hangleiter, G. Brockt, H. Lakner**

15:45 **Mo_11** STIMULATED EMISSION AND THE MOTT TRANSITION IN GaN EPILAYERS UNDER HIGH-DENSITY EXCITATION
**R.A. Taylor, S. Hess, K. Kyhm, J.F. Ryan, G.P. Yablonskii, E.V. Lutsenko, V.N. Pavlovskii, M. Heuken**

16:00 **Mo_12** PHOTOLUMINESCENCE INTENSITY AND SPECTRAL DISTRIBUTION OF GaN FILMS ON SiC SUBSTRATES THE DEPENDENCE ON DISLOCATION DENSITY AND STRUCTURE
**P. Hacke, A. Kuramata, K. Domen, T. Tanahashi**

16:15 **Mo_13** CHARACTERISATION OF GALLIUM NITRIDE DEVICE STRUCTURES USING TRANSMISSION ELECTRON MICROSCOPY
**D.M. Tricker, A.N. Bright, C.J. Humphreys**

16:30 **Mo_14** CATHODOLUMINESCENCE DETERMINATION OF STRAIN-INDUCED SHIFTS AT MICROCRACKS IN GaN/AlGaN MULTI QUANTUM WELLS
**C.E. Norman, R.A. Hogg, A.J. Shields, N. Lizuka**

### POSTER SESSION 1

## Tuesday July 6th

### Session sponsored by CREE Research Inc.

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|---|---|---|
| 8:30 | Tu_01 | ROLE OF POLARIZATION INDUCED EFFECTS IN GROUP III NITRIDE BASED DEVICES<br>**O. Ambacher*, L.F. Eastman, M. Stutzmann** |
| 9:00 | Tu_02 | SPONTANEOUS POLARIZATION VERSUS PIEZOELECTRIC FIELD EFFECTS IN III-V NITRIDES<br>**Fabio Bernardini*, Vincenzo Fiorentini** |
| 9:30 | Tu_03 | STARK-LIKE LADDER IN PIEZOELECTRIC GaInN/GaN QUANTUM WELLS<br>**C. Wetzel, T. Takeuchi, H. Amano, I. Akasaki** |
| 9:45 | Tu_04 | DIRECT OBSERVATION OF PYROELECTRIC FIELDS IN InGaN/GaN AND AlGaN/GaN HETEROSTRUCTURES<br>**O. Gfrörer, J. Off, F. Scholz, A. Hangleiter** |
| 10:00 | Tu_05 | SCATTERING, RECOMBINATION AND PIEZOELECTRICITY AT DISLOCATIONS IN GROUP III-NITRIDES<br>**M. Albrecht, S. Christiansen, T. Remmele, H.P. Strunk, A. Cremades, G. Salviati, H. Banzhoff, H. Lichte** |
| 10:15 | Tu_06 | INTRINSIC INFRARED LUMINESCENCE FROM InGaN LAYERS<br>**K.P. O'Donnell, R.W. Martin, S. Pereira, A. Bangura, M.E. White, W. Van der Stricht, K. Jacobs** |

### Session sponsored by RIBER S.A.

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| 11:00 | Tu_07 | EPITAXIAL GROWTH OF GAN, AIN AND InN: 2D/3D TRANSITION AND SURFACTANT EFFECTS<br>**B. Daudin*, G. Feuillet** |
| 11:30 | Tu_08 | MOCVD GROWTH AND OPTICAL CHARACTERIZATION OF STACKED InGaN QUANTUM DOTS FOR LASER APPLICATIONS<br>**K. Tachibana, T. Someya, Y. Arakawa** |
| 11:45 | Tu_09 | GaN QUANTUM STRUCTURES WITH FRACTIONAL DIMENSIONS - FROM QUANTUM WELL TO QUANTUM DOT<br>**Satoru Tanaka, Ikuo Suemune, Peter Ramvall, Yoshinobu Aoyagi** |
| 12:00 | Tu_10 | OPTICAL PROPERTIES OF STRUCTURES WITH SINGLE AND MULTIPLE InGaN NSERTIONS IN A GaN MATRIX<br>**A.V. Sakharov, W.V. Lundin, I.L. Krestnikov, V.A. Semenov, A.S. Usikov, A.F. Tsatsul'nikov, Yu.G. Musikhin, M.V. Baidakova, Zh.I. Alferov, N.N. Ledentsov, A. Hoffmann, D. Bimberg** |
| 12:15 | Tu_11 | In ON GaN SURFACES: ALLOY FORMATION, ORDERING AND SURFACTANT BEHAVIOR<br>**J. Neugebauer, T. Zywietz, M. Scheffler, J. Northrup** |

### Session sponsored by Délégation Générale à l'Armement

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| 14:30 | Tu_12 | OPTICAL SPECTROSCOPY OF InGaN/GaN QUANTUM WELLS<br>**E. Berkowicz, D. Gershoni*, G. Bahir, A.C. Abare, S.P. Denbaars, L.A. Coldren** |
| 15:00 | Tu_13 | MOLECULAR BEAM EPITAXY OF NITRIDE BASED QW STRUCTURES<br>**N. Grandjean*, J. Massies** |
| 15:30 | Tu_14 | PROPERTIES OF QUANTUM WELL EXCITONS IN GaN/AlGaN AND InGaN/GaN/AlGaN UV, BLUE, GREEN, AND AMBER LIGHT EMITTING DIODE STRUCTURES<br>**S.F. Chichibu, T. Deguchi, T. Sota, S.P. DenBaars, S. Nakamura** |
| 15:45 | Tu_15 | DYNAMICS OF EXCITONS IN GaN-AlGaN MULTIPLE QUANTUM WELLS WITH VARYING DEPTHS, THICKNESSES AND BARRIER LAYERS<br>**P. Lefebvre, M. Gallart, T. Taliercio, B. Gil , J. Allègre, H. Mathieu, N. Grandjean,M. Leroux, J. Massies, P. Bigenwald** |
| 16:00 | Tu_16 | BAND FILLING AND ENERGY RELAXATION IN InGaN/GaN-MULTIPLE QUANTUM WELL STRUCTURES<br>**T. Riemann, D. Rudloff, J. Christen, A. Krost, M. Lünenbürger, H. Protzmann, M. Heuken** |
| 16:15 | Tu_17 | HIGH-RESOLUTION PHOTOLUMINESCENCE AND REFLECTANCE SPECTRA OF HOMOEPITAXIAL GaN-LAYERS<br>**K. Kornitzer, T. Ebner, M. Grehl, K. Thonke, R. Sauer, C. Kirchner, V. Schwegler, M. Kamp, M. Leszczynski, I. Grzegory, S. Porowski** |
| 16:30 | Tu_18 | TEMPORARY DYNAMICS OF EXCITON-POLARITONS IN GaN FILMS<br>**G. Malpuech, A.V. Kavokin** |

### POSTER SESSION 2

18:45 **Round table - sponsored by EMCORE Corp.**

## Thursday July 8th

### Session sponsored by CNRS

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| 8:30 | Th_01 | ANOMALOUS BEHAVIOR OF NITRIDE ALLOYS<br>**A. Zunger*** |
| 9:00 | Th_02 | LATTICE DYNAMICS OF TERNARY ALLOYS<br>**Friedhelm Bechstedt*** |
| 9:30 | Th_03 | ENERGY BAND/LATTICE MISMATCH ENGINEERING IN QUATERNARY AlInGaN/GaN HETEROSTRUCTURE<br>**M. Asif Khan, J.W. Yang, G. Simin, Hans zur Loye, R. Bicknell-Tassius, R. Gaska, M.S. Shur, G. Tamulaitis, A. Zukauskas** |
| 9:45 | Th_04 | MOVPE GROWTH AND LUMINESCENCE PROPERTY OF GaAsN ALLOYS WITH HIGHER NITROGEN CONCENTRATIONS<br>**K. Onabe, D. Aoki, J. Wu, H. Yaguchi, Y. Shiraki** |
| 10:00 | Th_05 | MECHANISM FOR LIGHT EMISSION IN GaNAs/GaAs STRUCTURES GROWN BY MOLECULAR BEAM EPITAXY<br>**I.A. Buyanova, W.M. Chen, P.N. Hai, B. Monemar, H. Xin, C. W. Tu** |
| 10:15 | Th_06 | MOVPE GROWTH OF In-RICH InxGa1-xN (0.5 □ x □ 1) FILMS ON a-Al2O3(0001)<br>**A. Yamamoto, Y. Nakagawa, T. Sugiura, A. Hashimoto** |

### Session sponsored by University Montpellier II

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| 11:00 | Th_07 | CONDUCTION BAND ENERGY SPECTRUM OF TWO DIMENSIONAL ELECTRONS IN GaN/AlGaN HETEROJUNCTIONS<br>**W. Knap*, E. Frayssinet, C. Skierbiszewski, C. Chaubet, M.L. Sadowskia, D. Maude, M. Asif Khan, M.S. Shur** |
| 11:30 | Th_08 | RECORD HIGH MOBILITY AlGaN/GaN HETEROSTRUCTURES BASED ON OPTIMIZATION OF GaN BY MBE<br>**B. Heying, C. Elsass, I. Smorchkova, T. Mates, E. Haus, P. Fini, S.P. DenBaars, U. Mishra, J.S. Speck** |
| 11:45 | Th_09 | GROWTH OF HIGH MOBILITY AlGaN/GaN HETEROSTRUCTURES BY AMMONIA-MOLECULAR BEAM EPITAXY<br>**James B. Webb, H. Tang, J. Bardwell** |
| 12:00 | Th_10 | ENHANCED TWO-DIMENSIONAL ELECTRON GAS CONFINEMENT EFFECT ON TRANSPORT PROPERTIES IN AlGaN/InGaN/AlGaN DOUBLE-HETEROSTRUCTURES<br>**N. Maeda, T. Saitoh, K. Tsubaki, T. Nishida, N. Kobayashi** |
| 12:15 | Th_11 | WURTZITE GaN SURFACE RECONSTRUCTIONS STUDIED BY STM<br>**T. Sakurai, Q.K. Xue, Q.Z. Xue, Y. Hasegawa, I.S.T. Tsong, T. Ohno** |

### Session sponsored by RENISHAW Ltd.

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| 14:30 | Th_12 | GROWTH AND CHARACTERIZATION OF HIGH-EFFICIENCY InGaN MQW BLUE AND GREEN LEDS FROM LARGE-SCALE PRODUCTION MOCVD REACTORS<br>**C.A. Tran*, R.F. Karlicek Jr., M.G. Brown, I. Eliashevich, A. Whitcomb, A. Gurary, R. Stall** |
| 15:00 | Th_13 | MULTIWAFER PLANETARY REACTORS FOR THE PRODUCTION OF GaN BASED COMPOUNDS<br>**M. Heuken*** |
| 15:30 | Th_14 | HETEROEPITAXY OF DOPED AND UNDOPED CUBIC III-NITRIDES<br>**D.J. As*, K.Lischka** |
| 16:00 | Th_15 | MICROSTRUCTURE OF CUBIC AND HEXAGONAL GaN GROWN ON SAPPHIRE (0001) BY ECR-MBE WITH VARIOUS ELECTRIC BIASES<br>**T. Araki, T. Minami, Y. Nanishi** |
| 16:15 | Th_16 | THE INFLUENCE OF STRUCTURAL PROPERITES ON THE MECHANISMS OF OPTICAL AMPLIFICATION IN CUBIC InGaN<br>**J.Chr. Holst, A. Hoffmann, I. Broser, F. Bertram, T. Riemann, J. Christen, D.J. As, D. Schikora, B. Schoettker, K. Lischka** |
| 16:30 | Th_17 | COMPREHENSIVE INVESTIGATION ON THE MIXING AND REACTING BEHAVIORS OF PRECURSORS DURING METAL ORGANIC VAPOR PHASE EPITAXY OF GALLIUM NITRIDE<br>**T.F. Kuech, Jingxi Sun, K.S. Boutros, J.M. Redwing** |
| 16:45 | Th_18 | GROWTH OF HIGH QUALITY Ga-POLAR GaN LAYERS ON GaN SUBSTRATES AFTER NOVEL REACTIVE ION ETCHING<br>**J.L. Weyhe, A. Zauner, P.D. Brown, F. Karouta, A. Wysmolek, P.R. Hageman, S. Porowski** |

## Wednesday July 7th

### Session sponsored by NICHIA Chemical Industries

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| 8:30 | We_01 | STATUS OF NITRIDE BASED EMITERS ON SiC.<br>**K. Doverspike, H. Dieringer, D. Emerson, K. Habereran, D. Slater, H.S. Kong, G.E. Bulman, J. Edmond** |
| 9:00 | We_02 | CW OPERATION OF AlGaInN-GaN LASER DIODES<br>**T. Asano, K. Yanashima, T. Asatsuma, T. Hino, T. Yamaguchi, S. Tomiya, T. Kobayashi, M. Ikeda** |
| 9:30 | We_03 | FABRICATION AND CHARACTERIZATION OF GaN-BASED LASER DIODE GROWN ON THICK N-AlGaN CONTACT LAYER<br>**T. Takeuchi, T. Detchprohm, M. Yano, M. Yamaguchi , N. Hayashi, M. Iwaya, K. Isomura, K. Kimura, H. Amano, I. Akasaki, Yw. Kaneko, S. Watanabe, Y. Yamaoka, R. Shioda, T. Hidaka, Ys. Kaneko, N. Yamada** |
| 9:45 | We_04 | CONTINUOUS-WAVE OPERATION OF INGAN MULTI-QUANTUM-WELL LASER DIODES GROWN ON AN N-GAN SUBSTRATE WITH A BACKSIDE N-CONTACT<br>**M. Kuramoto, C. Sasaoka, Y. Hisanaga, A. Kimura, A.A. Yamaguchi, H. Sunakawa, N. Kuroda, M. Nido, A. Usui, M. Mizuta** |
| 10:00 | We_05 | RECOMBINATION DYNAMICS IN InxGa1-xN MULTIPLE-QUANTUM-WELL BASED LASER DIODES UNDER HIGH PHOTO-EXCITATION<br>**Yukio Narukawa, Yoichi Kawakami, Shigeo Fujita, Shuji Nakamura** |
| 10:15 | We_06 | 346 nm EMISSION FROM AlGaN MULTI-QUANTUM-WELL LIGHT EMITTING DIODE<br>**T. Nishida, N. Kobayashi** |
| 10:30 | We_14 | ROOM-TEMPERATURE CONTINUOUS-WAVE OPERATION OF INGAN MULTIPLE QUANTUM WELL LASER DIODES WITH AN ASYMMETRIC WAVEGUIDE STRUCTURE<br>**Michael Kneissl, David P. Bour, Chris G. Van de Walle, Linda T. Romano, John E. Northrup, Rose M. Wood, Mark Teepe, Noble M. Johnson** |
| 11:15 | | **SPECIAL SESSION IN HONOUR OF PROFESSOR AKASAKI** |

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| 14:30 | We_07 | MOCVD GROWTH OF GROUP-III NITRIDE BASED HETEROSTRUCTURES FOR HIGH POWER, HIGH FREQUENCY ELECTRONICS<br>**S. Den Baars, U. Mishra, C. Chen, G. Parish, S. Keller, Y.F. Wu, D. Kapolnek, B. Keller** |
| 15:00 | We_08 | RESULTS, POTENTIAL AND CHALLENGES OF HIGH POWER GAN-BASED TRANSISTORS<br>**Lester F. Eastman** |
| 15:30 | We_09 | FIRST DEMONSTRATION OF AlGaN/GaN DUAL-GATE MODULATION-DOPED FIELD-EFFECT TRANSISTORS<br>**C.H. Chen, K. Krishnamurthy, Y.F. Wu , S. Keller, G. Parish, M. Rodwell, Steven P. Denbaars, U.K. Mishra** |
| 15:45 | We_10 | DC AND RF CHARACTERIZATION OF AlN/GaN HFETs<br>**I. Daumiller, P. Schmid, C. Kirchner , M. Kamp , L. Pond, K.J. Ebeling, C. Weitzel, E. Kohn** |
| 16:00 | We_11 | AlGaN/GaN HFETs WITH NEW OHMIC AND SCHOTTKY CONTACTS FOR THERMAL STABILITY UP TO 400°C<br>**J. Hilsenbeck, W. Rieger, E. Nebauer, G. Tränkle, J. Würfl, A. Ramakrishan, H. Obloh** |
| 16:15 | We_12 | SCHOTTKY BARRIER PHOTODETECTORS ON EPITAXIAL LATERAL OVERGROWN GaN<br>**E. Monroy, F. Calle, E. Muñoz, B. Beaumont, F. Omnès, P. Gibart** |
| 16:30 | We_13 | REDUCTION OF OHMIC CONTACT RESISTIVITY ON P-TYPE GAN BY SURFACE TREATMENT<br>**J.L. Lee, J.K. Kim, J.W. Lee, Y.J. Park, T. Kim** |

### POSTER SESSION 3

18:45 **CONCERT**

## Friday July 9th

**Session sponsored by Thomson-CSF**

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| 8:30 | Fr_01 | RECENT PROGRESS IN SELECTIVE AREA GROWTH AND EPITAXIAL LATERAL OVERGROWTH OF III-NITRIDES<br>**K. Hiramatsu*, H. Miyake, A. Motogaito, H. Sone, Y. Kawaguchi, N. Sawaki, Y. Lyechika, T. Maeda** |
| 9:15 | Fr_02 | PENDEO-EPITAXY VS. LATERAL EPITAXIAL OVERGROWTH OF GaN - A COMPARATIVE STUDY<br>**Tsvetanka S. Zheleva, Waeil M. Ashmawi, Kenneth A. Jones, Darren Thomson, Thomas Gehrke, Kevin Linthicum, Robert F. Davis** |
| 9:30 | Fr_03 | SELECTIVE AREA GROWTH OF GaN ON STRIPE-PATTERNED (111) Si SUBSTRATE BY METALORGANIC VAPOR PHASE EPITAXY<br>**Y. Kawaguchi, Y. Honda, M. Yamaguchi, N. Sawaki, K. Hiramatsu** |
| 9:45 | Fr_04 | TEM STUDY OF THE BEHAVIOUR OF DISLOCATIONS DURING ELOG GaN GROWTH<br>**V. Bousquet, P. Vennéguès, B. Beaumont, P. Gibart** |
| 10:00 | Fr_05 | SELECTIVE GROWTH OF CUBIC GaN ON PATTERNED GaAs (100) SUBSTRATES BY METALORGANIC VAPOR PHASE EPITAXY<br>**Jun Wu, Masahiro Kudo, Akira Nagayama, Ryuji Katayama, Hiroyuki Yaguchi, Kentaro Onabe, Yasuhiro Shiraki** |
| 10:15 | Fr_06 | STRUCTURAL, OPTICAL, AND ELECTRICAL PROPERTIES OF GaN LATERALLY OVERGROWN ON Si(111) SUBSTRATES FOR DEVICE APPLICATIONS<br>**H. Marchand, N. Zhang, J.P. Ibbetson, L. Zhao, B. Moran, Y. Golan, S.J. Rosner, G. Girolami, P.T. Fini, S. Keller, J.S. Speck, S.P. DenBaars, U.K. Mishra** |

**Session sponsored by European Research Office - US Army**

| | | |
|---|---|---|
| 11:00 | Fr_07 | DEFECT AND STRESS CONTROL IN GROUP III NITRIDES USING LOW TEMPERATURE INTERLAYERS<br>**H. Amano*, M. Iwaya, N. Hayashi, T. Kashima, T. Takeuchi, C. Wetzel, I. Akasaki, J. Han, S. Hearne, J.A. Floro, E. Chason, J. Figiel** |
| 11:30 | Fr 08 | GaN/SiC QUASI-SUBSTRATES FOR GaN-BASED LEDS<br>**C. Kirchner, V. Schwegler, M. Kamp, K.J. Ebeling, Yu. Melnik, A. Nikolaev, D. Tsvetkov, V. Dmitriev** |
| 11:45 | Fr_09 | GaN SUBSTRATES: GROWTH and CHARACTERIZATION<br>**Olga Kryliouk, Michael Reed, Michael Mastro, Timothy Anderson, Bruce Chai** |
| 12:00 | Fr_10 | GaN ON Si(111): FROM GROWTH OPTIMIZATION TO OPTICAL PROPERTIES OF QUANTUM WELL STRUCTURES<br>**F. Semond, B. Damilano, S. Vézian, N. Grandjean, M. Leroux, J. Massies** |
| 12:15 | | **CLOSING SESSION** |

# Did you know Thomas Swan...

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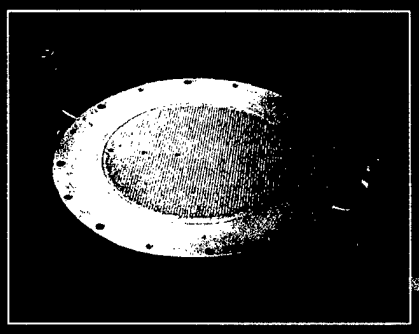
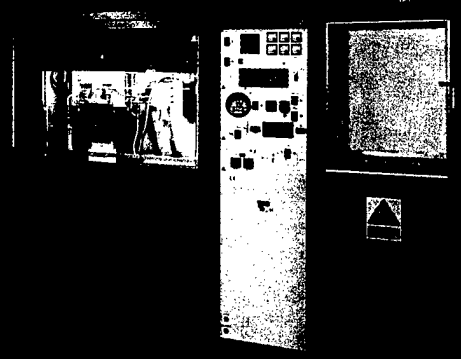
## Did you know CCS...

- maximises reagent utilisation
- enables excellent uniformity of thickness and alloy composition
- delivers monolayer abruptness of interfaces
- enables high Indium and Aluminium content alloys
- delivers on process stability and reproducibility
- enables high linear rates of growth <8µm/hr
- minimises and improves reactor efficiency



CCS is available at 1x2", 3x2" and 6x2" for GaN



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# POSTER SESSION 1

## Monday July 5th

**Mo_P001** THE GaN GROWTH BY A HOT FILAMENT METALORGANIC VAPOR PHASE DEPOSITION TECHNIQUE
**T. Boufaden, A. Rebey, I. Halidou, Z. Chine, B. El Jani**

**Mo_P002** NEW PRETREATMENT OF SAPPHIRE FOR GaN DEPOSITION
**Dongjin Byun, Hyun-Jeong Kim, Chang Hee Hong, Gyeungho Kim, Dong-Wha Kum**

**Mo_P003** MULTIPARAMETER STATISTICAL DESIGN OF EXPERIMENTS FOR GaN GROWTH OPTIMIZATION
**A. Hass Bar-Ilan, S. Zamir, O. Katz, B. Meyler, J. Salzman**

**Mo_P004** THICK HYDRIDE VAPOUR PHASE EPITAXIAL GaN LAYERS GROWN ON A-PLANE SAPPHIRE WITH DIFFERENT BUFFERS
**T. Paskova, E. Goldys, J. Birch, E.B. Svedberg, P. Runesson, S. Tungasmita, B. Monemar**

**Mo_P005** MOCVD GROWTH OF CUBIC GALLIUM NITRIDE : THE EFFECT OF THE V/III RATIO
**M. Moret, S. Ruffenach-Clur, N. Moreaud, O. Briot, J. Calas, R.L. Aulombard**

**Mo_P006** RHEED STUDIES OF GROUP III NITRIDES GROWN BY MBE
**C.T. Foxon, C.S. Davis, S.V. Novikov, O.H. Hughes**

**Mo_P007** THICK GaN GROWTH ON GaAs (111) SUBSTRATES AT 1000°C WITH HVPE
**F. Hasegawa, M. Minami, K. Sunaba, T. Suemasu**

**Mo_P008** EXPERIMENTAL AND THEORETICAL STUDY OF THE GROWTH OF GaN ON SAPPHIRE BY HVPE
**A. Trassoudaine, E. Aujol, P. Disseix, D. Castelluci, R.Cadoret**

**Mo_P009** GROWTH CONTROL OF CUBIC GaN AND CUBIC GaInN (GaAlN) ALLOYS BY RHEED OSCILLATIONS
**E. Martinez-Guerrero, B. Daudin, G. Feuillet, H. Mariette, P. Aboughe-nze, Y. Monteil, A. Philippe, C. Bru-Chevallier**

**Mo_P010** GROWTH AND CHARACTERISATION OF GALLIUM NITRIDE FILMS PRODUCED BY LOW TEMPERATURE REACTIVE SPUTTERING
**W.T. Young, S.R.P. Silva, M. Kuball, J.V. Anguita, J.M. Shannon, K.P. Homewood, B.J. Sealy**

**Mo_P011** QUANTUM CHEMICAL STUDIES OF GAS PHASE REACTIONS BETWEEN TMA, TMG, TMI AND NH3
**A. Tachibana, K. Nakamura, O. Makino, H. Tokunaga, N. Akutsu, K. Matsumoto**

**Mo_P012** MBE GROWTH OF HEXAGONAL InN FILMS ON SAPPHIRE WITH DIFFERENT INITIAL GROWTH STAGES
**V.V. Mamutin, V.A. Vekshin, V.Yu. Davydov, V.V. Ratnikov, T.V. Shubina, V.V. Emtsev, S.V. Ivanov, P.S. Kop'ev**

**Mo_P013** Mg-DOPED HEXAGONAL $InN/Al_2O_3$ FILMS GROWN BY MBE
**V.V. Mamutin, V.A. Vekshin, V.Yu. Davydov, V.V. Ratnikov, Yu. Kudriavtsev, B.Ya. Ber, V.V. Emtsev, S.V. Ivanov**

**Mo_P014** GROWTH AND OPTICAL CHARACTERIZATION OF ALUMINUM NITRIDE ALLOYS WITH HIGH ALUMINUM-CONTENTS
**J. Y. Lin, R. Mair, J. Li, H.S. Kim, H.X. Jiang**

**Mo_P015** 2.6μm/hr HIGH-SPEED GROWTH OF GaN BY RF-MOLECULAR BEAM EPITAXY AND IMPROVEMENT OF CRYSTAL QUALITY BY MIGRATION ENHANCED EPITAXY
**Daisuke Sugihara, Akihiko Kikuchi, Kazuhide Kusakabe, Shinichi Nakamura, Yousuke Toyoura, Takayuki Yamada, Katsumi Kishino**

**Mo_P016** EPITAXIAL GROWTH OF GaN, AlN AND ZnO THIN FILMS ON SAPPHIRE SUBSTRATE BY SINGLE TARGET OFF-AXIS SPUTTERING
**S.W. Kim, N. Kamata, S. Hino, T. Kodama, H. Hirose, T. Yamada*, T. Suzuki**

**Mo_P017** LOW-TEMPERATURE SYNTHESIS OF GALLIUM NITRIDE THIN FILMS USING REACTIVE RF-MAGNETRON SPUTTERING
**V. Bondar, I. Kucharsky, B. Simkiv, Yu. Dubov, S. Popovich**

**Mo_P018** PREFERENTIAL GROWTH MODE OF CUBIC GaN BY METALORGANIC MOLECULAR BEAM EPITAXY ON SAPPHIRE (0001) SUBSTRATES
**J. Suda, T. Kurobe, T. Masuda, H. Matsunami**

**Mo_P019** GROWTH AND CHARACTERIZATION OF THICK AlGaN EPILAYERS DOPED WITH Si GROWN ON SAPPHIRE SUBSTRATES
**W.V. Lundin, A.S. Usikov, A.V. Sakharov, V.V. Tretyakov, D.V. Poloskin**

**Mo_P020** INFLUENCE OF AMBIENT GAS ON THE EPITAXIAL LATERAL OVERGROWTH OF GaN BY METALORGANIC VAPOR PHASE EPITAXY
**Y. Kawaguchi, S. Nambu, M. Yamaguchi, N. Sawaki, H. Miyake, K. Hiramatsu, K. Tsukamoto, N. Kuwano, K. Oki**

**Mo_P021** MOVPE GROWTH OF HIGH QUALITY CUBIC GaN ON GaAs - THE ROLE OF GROWTH RATES AND BUFFER LAYER STRUCTURES
**M. Funato, M. Ogawa, T. Ishido, Sz. Fujita, Sg. Fujita**

**Mo_P022** MBE GROWTH OF AUTODOPED GaN USING A THIN AlN INTERMEDIATE LAYER
**J. Stemmer, H. Klausing, D. Mistele, T. Rotter, O. Semchinova, J. Aderhold, J. Graul**

**Mo_P023** EPITAXY OF GALLIUM NITRIDE BY HVPE USING LOW TEMPERATURE INTERMEDIATE BUFFER LAYERS DEPOSITED BY MOCVD
**V. Wagner, O. Parillaud, H.J. Bühlmann, M. Ilegems**

**Mo_P024** IN SITU MONITORING OF GAN GROWTH IN MULTIWAFER MOVPE REACTORS
**M. Heuken, H. Protzmann, M. Luenenbuerger, H. Juergensen**

**Mo_P025** Mg-INDUCED KINETICAL CHANGES IN THE GROWTH OF CUBIC AND HEXAGONAL GaN BY MOLECULAR BEAM EPITAXY
**Guido Mula, Bruno Daudin, Philippe Peyla**

**Mo_P026** SUBLIMATION GROWTH OF AlN
**S.Yu. Karpov, D.V. Zimina1, Yu.N. Makarov, E.N. Mokhov, A.D. Roenkov, M.G. Ramm, Yu.A. Vodakov**

**Mo_P027** MODELING STUDY OF HYDRIDE VAPOR PHASE EPITAXY OF GaN
**S.Yu. Karpov, D.V. Zimina, Yu.N. Makarov, B. Beaumont, J. Nataf, P. Gibart, M. Heuken, H. Juergensen, A. Krishnan**

**Mo_P028** MOCVD EPITAXY ON FREE-STANDING HVPE-GaN SUBSTRATES
**R. Miskys, M.K. Kelly, O. Ambacher, M. Stutzmann**

**Mo_P029** INTERFACE TREATMENT OF GaN/InGaN-MULTI QUANTUM WELL STRUCTURES GROWN IN PRODUCTION TYPE MOVPE SYSTEMS
**M. Heuken, M. Luenenbuerger, J. Blaesing, A. Krost, H. Protzmann**

**Mo_P030** ON THE ORIGINS OF LOW INDIUM INCORPORATION DURING MOVPE OF InGaN
**Yu.N. Makarov, R.A. Talalaev, E.V. Yakovlev, S.Yu. Karpov, I.Yu. Evstratov, A.N. Vorob'ev**

**Mo_P031** GROWTH AND EVAPORATION KINETICS OF GaN IN AMMONIA ATMOSPHERE
**S.Yu. Karpov, R.A. Talalaev, Yu.N. Makarov, N. Grandjean, J. Massies**

**Mo_P032** MECHANISM OF CHEMICAL VAPOUR DEPOSITION OF GALLIUM NITRIDE FILMS BASED ON PYROLYSIS OF AMMONIA HALIDES COMPLEXES
**S.E. Alexandrov, D.M. Krasovitskiy**

**Mo_P033** INFLUENCE OF THE GaN SEED LAYER AND GROWTH PARAMETERS ON SELECTIVE EPITAXY OF GaN BY HVPE
**O. Parillaud, V. Wagner, H.J. Bühlmann, M. Ilegems**

**Mo_P034** A TWO STEP METHOD FOR EPITAXIAL LATERAL OVERGROWTH OF GaN
**B. Beaumont, V. Bousquet, P. Vennéguès, M. Vaille, A. Bouillé, P. Gibart, S. Dassonneville, A. Amokrane, B. Sieber**

**Mo_P035** REMOTE PLASMA MOCVD GROWTH AND PROCESSING OF GaN BY REAL TIME ELLIPSOMETRY
**M. Losurdo, P. Capezzuto, G. Bruno**

**Mo_P036** PROPERTIES OF HOMOEPITAXIAL AND HETEROEPITAXIAL GaN LAYERS GROWN BY PLASMA-ASSISTED MBE
**M.A. Sánchez-García, F.B. Naranjo, J.L. Pau, A. Jiménez, E. Calleja, E.Munoz, S.I. Molina, A.M. Sánchez, F.J. Pacheco, R.García**

**Mo_P037** SURFACTANT EFFECT OF As ON THE GROWTH OF GaN ON Si(111) SUBSTRATES BY PLASMA ASSISTED MBE
**A. Jiménez , M.A. Sánchez-García, F.B. Naranjo, J.L. Pau, E. Calleja, E. Munoz, S.I. Molina, A.M. Sánchez, F.J. Pacheco, R. García**

**Mo_P038** GROWTH OF AlGaN ON Si(111), Al2O3(0001) AND GaN(0001) BY PLASMA-ASSISTED MBE
**F.B. Naranjo, J.L. Pau, A. Jiménez, M.A. Sanchez-García, E. Calleja, E. Muñoz**

**Mo_P039** STRUCTURE OF AlN AND GaN BULK CRYSTAL GROWN BY HVPE
**M. Albrecht, H.P. Strunk, Yu. Melnik, A. Nikolaev, I. Nikitina, V. Dmitriev, F. Demangeot, J. Frandon, M. Renucci**

**Mo_P040** SUPPRESSION OF THE HEXAGONAL PHASE IN CUBIC GaN FILMS BY USING MISORIENTED GaAs (001) SUBSTRATES
**A. Nagayama, R. Katayama, N. Nakadan, K. Miwa, H. Yaguchi, J. Wu, K. Onabe, Y. Shiraki**

**Mo_P041** STRAIN RELAXATION IN GAN FILMS AS A FUNCTION OF GROWTH DIRECTION AND BUFFER LAYER MEASURED BY RAMAN SPECTROSCOPY
**R. Seitz, T. Monteiro, E. Pereira, M. Di Poisson-Forte**

**Mo_P042** GROWTH OF POLYCRYSTALLINE GaN ON SILICON(001) SUBSTRATES BY RF PLASMA CHEMICAL VAPOR DEPOSITION WITH ZnO BUFFER LAYER
**D.C. Park, Sz. Fujita, Sg. Fujita**

**Mo_P043** THE APPLICATION OF LOW TEMPERATURE GaN BUFFER LAYER ON ZnO/Si SUBSTRATE TO OBTAIN THICK FILMS OF HIGH QUALITY GaN
**J.W. Lee, S.W. Park, H.S. Paek, J.B. Yoo, P.W. Yu**

**Mo_P044** GROWTH OF BULK AlN BY PHYSICAL VAPOR TRANSPORT
**Tim Housain, V. Dmitriev, P. Zhou, H.N. Jayatirtha, M.G. Spencer, V. Dimitriev, Yu Melnik, A. Nikolaev**

**Mo_P045** LOW TEMPERATURE GROWTH OF GaN ON a-Al2O3 AND Si SUBSTRATE USING AN ATOMIC NITROGEN SOURCE BASED ON DIELECTRIC BARRIER DISCHARGE
**Dongjin Byun, Joosung Kim, Jin-Sang Kim, Dong-Wha Kum**

**Mo_P046** MOCVD GROWTH OF GaN ON LiAlO2 (100) SUBSTRATES
**Ke Xu, Peizhen Deng, Zujie Fang, Jun Xu**

**Mo_P047** MIXING MECHANISM OF h-GaN IN c-GaN GROWTH ON GaAs (001) SUBSTRATES
**A. Hashimoto, H. Wada, T. Ueda, A. Masuda, A. Yamamoto**

**Mo_P048** GROWTH OF BORON NITRIDE THIN FILMS ON SILICON SUBSTRATES USING NEW ORGANOBORON PRECURSORS
**Jin-Hyo Boo, Carsten Rohr, Wilson Ho**

**Mo_P049** GROWTH OF AlN AND GaN THIN FILMS ON Si(100) USING NEW SINGLE MOLECULAR PRECURSORS BY MOCVD METHOD
**J.H. Boo, S.B. Lee, Y.S. Kim, J.T. Park, K.S. Yu, Y. Kim**

**Mo_P050** CHARACTERISTICS OF OPTICALLY-PUMPED FREE STANDING GaN GROWN BY HYDRIDE VAPOR PHASE EPITAXY
**S.T. Kim, K.Y. Park, M.H. Lee, D.C. Moon, J.K. Kim, Y.H. Choi, T.K. Yoo**

**Mo_P051** INFLUENCE OF GROWTH CONDITION ON QUALITY OF GaN, AlN AND AlGaN GROWN ON SiC AND SAPPHIRE BY RF-PLASMA ASSISTED MOLECULAR BEAM EPITAXY
**Ming Qi, Aizhen Li, Wei Li, Zhibiao Zhao, Yonggang Zhang**

**Mo_P052** PHOTOLUMINESCENCE AND GAIN OF MBE GROWN CUBIC InxGa1-xN/GaN HETEROSTRUCTURES
**T. Frey, D.J. As, D. Schikora, K. Lischka, J. Holst, A. Hoffmann**

**Mo_P053** A COMPARATIVE STUDY OF MOVPE GROWTH OF InN ON GaAs(111) SUBSTRATES USING A NITRIDED OR GROWN GaN BUFFER LAYER
**A. Yamamoto, T. Arita, M. Adachi, T. Sugiura, A. Hashimoto**

**Mo_P054** EFFECT OF HYDROGEN ON GROWTH BEHAVIOR OF GAN DURING REMOTE PLASMA ENHANCED METALORGANIC CHEMICAL VAPOR DEPOSITION
**M.H. Kim, H.J. Kim, H. Na, F. Qi, E. Yoon**

**Mo_P055** CLASSICAL AND QUANTUM SIMULATIONS OF In AND Al INCORPORATION IN GaN
**J.A. Chisholm, P. D. Bristowe**

**Mo_P056** HIGH-QUALITY GaN ON Si SUBSTRATE BY USE OF AlGaN/GaN INTERMEDIATE LAYER
**H. Ishikawa, Z.Y. Zhao, N. Nakada, T. Egawa, T. Soga, T. Jimbo, M. Umeno**

**Mo_P057** GAS PHASE STUDIES OF TRIMETHYLGALLIUM WITH AMMONIA, PROPYLAMINE AND WATER AT ELEVATED TEMPERATURES: TOWARDS AN UNDERSTANDING OF GaN GROWTH AND OXYGEN INCORPORATION
**U. Bergmann, V. Reimer, B. Atakan**

**Mo_P058** HOMOEPITAXIAL GROWTH AND LUMINESCENCE CHARACTERIZATION OF GaN EPILAYERBY RF-MBE ON MOCVD-GROWN GaN SUBSTRATE
**S. Kurai, S. Kubo, T. Okazaki, S. Manabe, T. Sugita, A. Kawabe, Y. Yamada, T. Taguchi**

**Mo_P059** INFLUENCE OF THE GROWTH CONDITIONS ON THE SURFACE MORPHOLOGY AND STRUCTURE OF MBE GROWN AlN
**L. Kirste, M. Rattunde, J. Portmann, R. Brenn, K.W. Benz, D.G. Ebling, K. Tillmann**

**Mo_P060** INFLUENCE OF MBE GROWTH TEMPERATURE ON THE PROPERTIES OF CUBIC GaN GROWN DIRECTLY ON GaAs SUBSTRATES
**A. Georgakilas, M. Androulidaki, K. Tsagaraki, K. Amimer, G. Constantinidis, N.T. Pelekanos**

**Mo_P061** POSSIBILITY OF STRAIN CONTROL IN AlN LAYER GROWN BY MOVPE ON (0001)6H-SiC WITH GaN/AlN BUFFER
**H. Kawanishi , M. Kurimoto, T. Nakada, Y. Ishihara, M. Shibata, T. Takano, J. Yamamoto, T. Honda**

**Mo_P062** CHARACTERIZATION OF ALGAN/GAN HETEROSTRUCTURES GROWN BY METALORGANIC CHEMICAL VAPOR DEPOSITION
**R.D. Dupuis, C.J. Eiting, D.J.H. Lambert, H.K. Kwon, B.S. Shelton, M.M. Wong, T.G. Zhu, D.E. Lin**

**Mo_P063** X-RAY PHOTOELECTRON SPECTROSCOPIC INVESTIGATION OF THE GAAS NITRIDATION MECHANISM WITH AN ECR PLASMA SOURCE
**M. Sauvage-Simkin, Y. Garreau, A. Barski, R. Langer, F. Bruno, L. Floreano, R. Gotter, A. Morgante, A. Santaniello, D. Svetko, A. Verdini**

**Mo_P064** OPTIMIZATION OF SI/N TREATMENT TIME OF SAPPHIRE SURFACE AND ITS EFFECT ON THE MOVPE GaN OVERLAYERS
**S. Haffouz, B. Beaumont, P. Vennéguès, P. Gibart**

**Mo_P065** PLASMA-ASSISTED MBE GROWTH OF GaN ON HVPE-GaN AND SAPPHIRE SUBSTRATES
**A. Rinta-Möykky, P. Laukkanen, S. Lehkonen, S. Laaksonen, J. Likonen, P. Uusimaa, M. Pessa**

**Mo_P066** PROCESS OPTIMISATION OF THE REACTIVE ION ETCHING OF GALLIUM NITRIDE IN METHYLCHLORIDE/HYDROGEN USING THE ORTHOGONAL DESIGN METHOD
**M. Dineen, H. Thomas, B. Humphreys, S.G. McMeekin**

**Mo_P067** STUDIES OF GaN HOMOEPITAXY WITH LOW-ENERGY ELECTRON MICROSCOPY
**I.S.T. Tsong, A. Pavlovska, V.M. Torres, E. Bauer, R.B. Doak, D.B. Thomson, R.F. Davis**

**Mo_P068** RAMAN SCATTERING STUDY OF ZINC BLENDE InxGa1-xN ALLOYS
**A. Tabata, E. Silveira, J.R. Leite, A.P. Lima, L.M.R. Scolfaro, V. Lemos, T. Frey, D.J. As, D. Schikora, K. Lischka**

**Mo_P069** EFFECT OF ANNEALING ON DEFECTS IN AS-GROWN AND $\gamma$-RAY IRRADIATED n-GaN LAYERS
**N. Shmidt, V. Emtsev, I. Krestnikov, W. Lundin, A. Osinsky, D. Poloskin, A. Sakharov, A. Usikov**

**Mo_P070** PHASE SEPARATION AND ORDERING CO-EXISTING IN MOCVD InxGa1-xN
**M.K. Behbehani, E.L. Piner, X. Liu, N.A. El-Masry, S.M. Bedair**

**Mo_P071** MOCVD GROWTH AND CHARACTERIZATION OF GaN FILMS WITH COMPOSITE INTERMEDIATE LAYER BUFFER ON Si SUBSTRATE
**X. Zhang, S.J. Chua, Z.C. Feng, J. Chen, J. Lin**

**Mo_P072** THE NATURE OF NATIVE DEFECTS IN GaN THIN FILMS
**V. Bondar, V. Vasyltsiv, I. Kucharsky, Yu. Dubov**

**Mo_P073** DETERMINING OF STRESSES IN GaN THIN FILMS BY X-RAY DIFFRACTION ANALYSIS
**L. Axelrud, V. Bondar, V. Davydov. I. Kucharsky**

**Mo_P074** MICROSTRUCTURAL ANALYSIS OF POST-ANNEALED AlN NUCLEATION LAYERS
**Y.M. Le Vaillant, R. Bisaro, P. Vennéguès, P. Galtier, J.Y. Duboz, B. Gil, S. Ruffenach-Clur, O. Briot, R.L. Aulombard**

**Mo_P075** IN-EDGE X-RAY ABSORPTION FINE STRUCTURE OF INN AND INGAN FILMS
**K.P. O'Donnell, R.W. Martin, M.E. White, J.F.W. Mosselmans, Qixin Guo**

**Mo_P076** SPECTROSCOPIC IMAGING OF InGaN LAYERS
**K.P.O'Donnell, C. Trager Cowan, S. Pereira, A. Bangura, C. Young, M.E. White, M.J. Tobin**

**Mo_P077** COMPOSITION ANALYSIS USING ERD
**L. Görgens, G. Dollinger, A. Bergmaier, O. Ambacher, L. Eastman, R. Dimitrov, A. Mitschel**

**Mo_P078** THE ATOMIC STRUCTURE OF THREADING DISLOCATIONS FROM LOW-ANGLE TO HIGH-ANGLE GRAIN BOUNDARIES IN GaN/SAPPHIRE EPITAXIAL LAYERS
**V. Potin, G. Nouet, P. Ruterana, R.C. Pond**

**Mo_P079** SELF-ARRANGED LAYER STACKING SEQUENCE WITH SIX-BILAYER PERIODICITY ALONG THE <111> DIRECTION IN GaN ON GaAs
**M. Funato, T. Ishido, Sz. Fujita, Sg. Fujita**

**Mo_P080** DEFECT-SELECTIVE ETCHING OF GaN
**J.L. Weyher, G. Nowak, P.D. Brown, J.L. Rouvière, A. Presz, I. Grzegory**

**Mo_P081** STRAIN DISTRIBUTION IN GAN HEXAGONS MEASURED BY RAMAN SPECTROSCOPY
**R. Seitz, T. Monteiro, E. Pereira, M. Di Poisson-Forte**

**Mo_P082** MICRO DEFECTS IN NEARLY DISLOCATION FREE GaN DOPED WITH Mg DURING HIGH PRESSURE CRYSTALLIZATION
**S. Porowski, J. Kozubowski, J. Borysiuk, J.L. Weyher, M. Bockowski, B. Lucznik,I. Grzegory**

**Mo_P083** INVESTIGATION OF GaN THIN FILMS BY HIGH RESOLUTION DOUBLE CRYSTAL X- RAY DIFFRACTION
**D. Johnston, T. Lafford, G. Fraser, N. Loxley**

**Mo_P084** DEFECT CREATION AND ANNIHILATION IN III-N LAYERS ON GaN SINGLE CRYSTALS AND ON SAPPHIRE
**M. Leszczynski, P. Prystawko, T. Suski, E. Frayssinet, J. Domagala, G. Nowak, I. Grzegory, M. Bockowski, S. Porowski**

**Mo_P085** HRTEM EVALUATION OF GaN LATERALLY OVERGROWN ON HVPE AlN/6H-SiC
**P. Ruterana, B. Beaumont, P. Gibart, Yu. Melnik**

**Mo_P086** ANALYSIS OF THE DEFECT STRUCTURE OF EPITAXIAL GaN LAYERS
**H. Heinke, V. Kirchner, S. Einfeldt, D. Hommel**

**Mo_P087** ORIGIN OF THE TILT OF CRYSTALLINE AXIS IN TERMS OF THE STRUCTURAL PROPERTY IN CUBIC GaN EPILAYER ON (001) GaAs SUBSTRATE GROWN BY RF-MBE
**H. Hayashi, A. Hayashida, A.W. Jia, M. Kobayashi, M. Shimotomai, Y. Kato, A. Yoshikawa, K. Takahashi**

**Mo_P088** IN-SITU Er-DOPING OF GaN AND THE EFFECT OF SURFACE MORPHOLOGY AN ROOM-TEMPERATURE PHOTOLUMINESCENCE
**J.M. Zavada, M.E. Overberg, J. Brand, J.D. MacKenzie, C.R. Abernathy, S.J. Pearton, R.G. Wilson**

**Mo_P089** GaN LAYERS GROWN ON Si(111) SUBSTRATES WITH AlN BUFFER LAYERS: A SCANNING TUNNELING MICROSCOPY INVESTIGATION IN AIR
**R. Rinaldi, S. Antonaci, R. Cingolani, A. Botchkarev, H.Morkoç**

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| **Mo_P090** | THERMODYNAMIC ANALYSIS ON THE MOVPE GROWTH OF NITRIDE SEMICONDUCTORS USING HYDRAZINE<br>**A. Koukitu, Y. Kumagai, H. Seki, N. Kubota** |
| **Mo_P091** | SURFACE ENERGIES AND SURFACE DIPOLES AT III-NITRIDE(111) SURFACES IN DEPENDENCE ON STOICHIOMETRY<br>**J. Furthmüller, U. Grossner, F. Bechstedt** |
| **Mo_P093** | AB INITIO CALCULATION OF VIBRATIONAL PROPERTIES OF CUBIC AND HEXAGONAL InN<br>**H.W. Leite Alves, J.L.A. Alves, A. Tabata, L.M.R. Scolfaro, J.R. Leite** |
| **Mo_P094** | POLARIZATION EFFECTS ON SCHOTTKY BARRIER IN GaN-METAL JUNCTIONS<br>**P. Ruggerone, F. Bernardini, D. Mura, V. Fiorentini** |
| **Mo_P095** | STUDY OF PHASE-SEPARATED THIN LAYERS OF INGAN GROWN BY METALORGANIC-VAPOR-PHASE-EPITAXY<br>**P. Li, G. Li, S.J. Chua, W. Wang, X.C. Wang, Y.P. Guo** |
| **Mo_P096** | EVOLUTION WITH TEMPERATURE OF THE STRAIN STATE OF GaN THIN LAYERS GROWN ON DIFFERENT SUBSTRATES<br>**E. Deleporte, C. Guénaud, M. Voos, B. Beaumont, P. Gibart, H. Larèche** |
| **Mo_P097** | PHOTOLUMINESCENCE INVESTIGATIONS OF AlGaN ON GaN EPITAXIAL FILMS<br>**B.K. Meyer, G. Steude, H. Amano, I. Akasaki** |
| **Mo_P098** | PHONONS IN HEXAGONAL InN. EXPERIMENT AND THEORY<br>**V.Yu. Davydov, A.A. Klochikhin, M.B. Smirnov, V.V. Emtsev, V.D. Petrikov, I.A. Abroyan, I.N. Goncharuk, A.N. Smirnov, V.V. Mamutin, S.V. Ivanov, T. Inushima** |
| **Mo_P099** | INFRARED PHOTOLUMINESCENCE AND EPR IN BULK GaN CRYSTALS HEAVILY DOPED WITH Cr AND V<br>**I.V. Ilyin, R.A. Babunts, P.G. Baranov, E.N. Mokhov, V.A. Khramtsov** |
| **Mo_P100** | OBSERVATION OF PHONON MODES IN BULK InGaN FILMS BY RAMAN SCATTERING<br>**H. Harima, Y. Sone, E. Kurimoto, S. Nakashima, S. Chu, A. Ishida, H. Fujiyasu** |
| **Mo_P101** | LOCAL VIBRATIONAL MODES IN p-TYPE GaN OBSERVED BY RAMAN SCATTERING<br>**H. Harima, T. Inoue, Y. Sone, S. Nakashima, M. Ishida, M. Taneya** |
| **Mo_P102** | DISLOCATION NATURE OF GROWTH HILLOCKS IN HOMOEPITAXIAL MOCVD GaN LAYERS<br>**G. Nowak, K. Pakula, I. Grzegory, J.L. Weyher, S. Porowski** |
| **Mo_P103** | OXYGEN-RELATED DEFECTS AND ENERGY ACCUMULATION IN ALUMINIUM NITRIDE CERAMICS<br>**B. Berzina, L. Trinkler, J. Sils, E. Palcevskis, P.Christensen** |
| **Mo_P104** | REAL-TIME X-RAY SCATTERING STUDIES OF SURFACE STRUCTURE AND GROWTH MODES DURING MOCVD GROWTH OF GaN<br>**G.B. Stephenson, A. Munkholm, J.A. Eastman, C. Thompson, P. Fini, J.S. Speck, O. Auciello, S.P. DenBaars** |
| **Mo_P105** | HIGH QUALITY GaN LAYERS GROWN BY MOCVD ON Si(111) – SUBSTRATES<br>**A. Strittmatter, A. Krost, D. Bimberg** |


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# POSTER SESSION 2

## Tuesday July 6th

**Tu_P001** SOLID INCORPORATION OF AlGaN AND INFLUENCE OF GROWTH INTERRUPTION ON GaN/ALGaN QUANTUM WELL STRUCTURES GROWN BY MOCVD
**G.M. Yang, S.C. Choi, J.H. Kim, J.Y. Choi, K.J. Lee, K.Y. Lim, H.J. Lee**

**Tu_P002** METALORGANIC MOLECULAR BEAM EPITAXY OF $In_xGa_{1-x}N$ FOR A VISIBLE SPECTRAL RANGE IN PHOTOLUMINESCENCE
**Seong-Ju Park, Min-Ho Kim, Jun-Kyu Cho**

**Tu_P003** PROPERTIES OF NANOCRYSTALLINE GALLIUM NITRIDE THIN FILMS GROWN ON MONOCRYSTALLINE SUBSTRATES AND BUFFER LAYERS
**V. Bondar**

**Tu_P004** GROWTH AND OPTICAL CHARACTERIZATION OF InxGa1-xN DOTS RESULTING FROM A 2D-3D TRANSITION
**C. Adelmann, J. Simon, N. Pelekanos, Y. Samson, G. Feuillet, B. Daudin**

**Tu_P005** InGaN/GaN MQW AND Mg-DOPED GaN GROWTH USING A SHUTTER CONTROL METHOD BY RF-MOLECULAR BEAM EPITAXY
**Shinichi Nakamura, Akihiko Kikuchi, Koichi Kushi, Hajime Sasamoto, Daisuke Sugihara, Kazuhide Kusakabe, Katsumi Kishino**

**Tu_P006** ENHANCED BLUE-LIGHT EMISSION FROM InGaN/GaN QUANTUM WELLS GROWN OVER A MULTILAYERED BUFFER ON SILICON SUBSTRATE BY METAL ORGANIC CHEMICAL VAPOR DEPOSITION
**Xiong Zhang, Soo-Jin Chua, Wei Liu**

**Tu_P007** GROWTH AND CHARACTERIZATION OF THICK GaAsN EPILAYERS AND GaInNAs/GaAs MULTIQUANTUM WELLS
**Ph. Gilet, A. Chenevas-Paule, Ph. Duvaut, L. Grenouillet, A. Million**

**Tu_P008** THE STRUCTURE OF InGaN LAYERS AND QUANTUM WELLS GROWN BY MOCVD
**P. Ruterana, C. Gonthrin, F. Mascle, R. Aguinet, M.A. Poisson, W. Van der Stricht**

**Tu_P009** GROWTH AND RELAXATION OF GaN/AlGaN HETEROSTRUCTURES GROWN BY MBE ON PRESSURE GROWN GaN(0001) SUBSTRATES
**M. Albrecht, H.P. Strunk, C.T. Foxon, D. Korakakis, I. Grzegory, S. Porowski**

**Tu_P010** INFLUENCE OF STRAIN AND THERMAL ANNEALING EFFECTS ON BANDGAP INHOMOGENEITY OF InGaN MQW
**K. Domen, A. Kuramata, T. Tanahashi**

**Tu_P011** IMPROVEMENT OF SURFACE MORPHOLOGY IN InGaN MULTIPLE QUANTUM WELL STRUCTURE
**J. Gotoh, K. Uchida, A. Niwa, S. Gotoh, T. Yang, J. Kasai, T. Mishima**

**Tu_P012** DISLOCATIONS IN GaN and GaN/AlN HETEROSTRUCTURES
**J.L. Rouvière, B. Daudin, G. Feuillet, J.L. Weyher**

**Tu_P013** CONTROL OF SPATIAL FLUCTUATIONS IN InGaN/GaN QUANTUM WELLS BY MOLECULAR BEAM EPITAXY GROWTH
**S. Einfeldt, T. Bottcher, D. Rudloff, T. Riemann, F. Bertram, H. Selke, J. Christen, P.L. Ryder, D. Hommel**

**Tu_P014** STRUCTURAL DEFECTS OF CUBIC InGaN/GaN HETEROSTRUCTURES GROWN ON GaAs (001) SUBSTRATES BY MOVPE
**Y. Taniyasu, Y. Watanabe, D. H. Lim, A.W. Jia, M. Shimotomai, Y. Kato, M. Kobayashi, A. Yoshikawa, K. Takahashi**

**Tu_P015** TIME-RESOLVED SPECTROSCOPY OF InGaN LIGHT-EMITTING DIODES, MULTIPLE QUANTUM WELLS, AND THIN FILMS
**Frederick H. Long, M. Pophristic, C. Tran, R.F. Karlicek Jr., I.T. Ferguson**

**Tu_P016** INHOMOGENEOUS BROADENING OF EXCITONS IN THIN FILMS OF GaN : EFFECT ON THE TIME RESOLVED TRANSMISSION SPECTRA
**A.V. Kavokin, G. Malpuech, G. Panzarini**

**Tu_P017** OPTICAL PROPERTIES OF HEXAGONAL GaN CRYSTALS WITH IMPURITIES AND DEFECTS
**P. Tronc, Yu.E. Kitaev, G. Wang, M.F. Limonov, G.Neu**

**Tu_P018** EXTENDED TIGHT BINDING AND THERMOCHEMICAL MODELING OF III-NITRIDE HETEROSTRUCTURES AS A FUNCTION OF TEMPERATURE, STRAIN, AND PRESSURE
**Hilmi Ünlü**

**Tu_P019** CALCULATION OF EXCITON ENERGIES FOR SELF-FORMED INGAN QUANTUM DOTS
**R.W. Martin, K.P. O'Donnell**

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| **Tu_P020** | OPTICAL PROPERTIES OF GAN (110) AND (1010) SURFACES<br>**Cecilia Noguez, R. Esquivel-Sirvent** |
| **Tu_P021** | STRAIN INFLUENCE ON III-NITRIDES: AB INITIO STUDIES OF STRUCTURAL, LATTICE-DYNAMICAL, AND DIELECTRIC PROPERTIES<br>**J.M. Wagner, F. Bechstedt** |
| **Tu_P022** | RELAXATION EFFECTS ON THE NEGATIVELY CHARGED Mg IMPURITY IN ZINC BLENDE GaN<br>**L.M.R. Scolfaro, L.K. Teles, J.R. Leite, A. Tabata, D.J.As** |
| **Tu_P023** | INFLUENCE OF INTERNAL POLARIZATION FIELDS ON THE DISORDER BROADENING OF EXCITONS IN (In,Ga)N/GaN QUANTUM WELLS<br>**O. Mayrock, H.J. Wünsche, F. Henneberger, O. Brandt** |
| **Tu_P024** | EFFECTS OF MACROSCOPIC-POLARIZATION INDUCED ELECTROSTATIC FIELDS IN III-V NITRIDE MULTI-QUANTUM-WELLS<br>**Vincenzo Fiorentini, Fabio Bernardini, A. Di Carlo, F. Della Sala, P. Lugli** |
| **Tu_P025** | FIRST-PRINCIPLES STUDY ON PIEZOELECTRIC CONSTANTS IN BN, AIN, AND GaN DISTORTED BY VOLUME-CONSERVING AND BIAXIAL STRAINS<br>**K. Shimada, T. Sota, K. Suzuki, H. Okumura** |
| **Tu_P026** | TWO-PHOTON ABSORPTION IN GaAIN NANOCRYSTALLITES EMBEDDED WITHIN PHOTOPOLYMER MATRICES<br>**A. Mefleh, S. Benet, S. Brunet, M. Malachowski, I.V. Kityk** |
| **Tu_P027** | TEMPERATURE DEPENDENCE OF HEXAGONAL-GaN OPTICAL PROPERTIES BELOW THE BANDGAP<br>**L. Siozade, S. Colard, M. Mihailovic, J. Leymarie, A. Vasson, N. Grandjean, M. Leroux, J. Massies** |
| **Tu_P028** | TEMPERATURE DEPENDENCE OF PHOTOLUMINESCENCE INTENSITIES IN UNDOPED AND DOPED GaN<br>**M. Leroux, N. Grandjean, B. Beaumont, G. Nataf, F. Sémond, J. Massies, P. Gibart** |
| **Tu_P029** | OBSERVATION OF QUANTUM DOT/QUANTUM WIRE-LIKE PROPERTIES IN THE PHASE-SEPARATED GaN-RICH GaNP<br>**R. Kuroiwa, H. Asahi, K. Iwata, H. Tampo, K. Asami, S. Gonda** |
| **Tu_P030** | OPTICAL CONSTANTS OF AlxGa1-xN: MODELING OVER A WIDE SPECTRAL RANGE<br>**A.B. Djurišic, E.H. Li** |
| **Tu_P031** | STRAINED InGaN/GaN QUANTUM WELLS CHARACTERISED BY ROOM-TEMPERATURE PHOTOLUMINESCENCE AND SPECTROSCOPIC ELLIPSOMETRY<br>**A. Ramakrishnan, J. Wagner, H. Obloh, M. Kunzer** |
| **Tu_P032** | DYNAMICS OF THE BOUND EXCITONS IN GaN EPILAYERS GROWN BY HYDRIDE VAPOR PHASE EPITAXY<br>**G. Pozina, J.P. Bergman, T. Paskova, B. Monemar** |
| **Tu_P033** | OPTICAL AND STRUCTURAL CHARACTERIZATION OF Ga(In)N TRHEE-DIMENSIONAL NANOSTRUCTURES GROWN BY PLASMA ASSISTED MOLECULAR BEAM EPITAXY<br>**G. Pozina, J.P. Bergman, B. Monemar, V.V. Mamutin, V.A. Vekshin, S.V. Ivanov, T.V. Shubina, A.A. Toropov** |
| **Tu_P034** | HOT CARRIER RELAXATION BY EXTREME ELECTRON – LO PHONON SCATTERING IN GaN<br>**S. Hess, R.A. Taylor, E.D. O'Sullivan, J.F. Ryan, N.J. Cain, V. Roberts, J.S. Roberts** |
| **Tu_P035** | FEMTOSECOND EXCITON DYNAMICS AND THE MOTT TRANSITION IN GaN UNDER RESONANT EXCITATION<br>**R.A. Taylor, S. Hess, K. Kyhm, J.F. Ryan, B. Beaumont, P. Gibart** |
| **Tu_P036** | VIOLET TO ORANGE ROOM TEMPERATURE LUMINESCENCE FROM GaN QUANTUM DOTS ON Si(111) SUBSTRATES<br>**B. Damilano, N. Grandjean, F. Semond, J. Massies, M. Leroux** |
| **Tu_P037** | CHARACTERIZATION OF InGaN SINGLE LAYERS AND QUANTUM WELLS GROWN BY LP-MOVPE<br>**B. Schineller, P.H. Lim, O. Schön, H. Protzmann, M. Heuken, K. Heime** |
| **Tu_P038** | IMPACT IONIZATION OF EXCITONS IN AN ELECTRIC FIELD IN GaN<br>**D.K. Nelson, M.A. Jacobson, V.D. Kagan, N. Shmidt** |
| **Tu_P039** | CRYSTAL FILMS CHARACTERIZATION BY URBACH SPECTRAL TAIL OF ABSORPTION FOR GALLIUM NITRIDE<br>**M.A. Jacobson, O.V. Konstantinov, D.K. Nelson, S.O. Romanovskii, Z. Hatzopoulos, A. Georgakilas** |
| **Tu_P040** | INFLUENCE OF THE ELECTRIC FIELD ON THE EXCITONIC SPECTRA OF EPITAXIAL GaN FILMS<br>**M.A. Jacobson, E.V. Kalinina, D.K. Nelson, S.O. Romanovskii, A.V. Sel'kin** |

**Tu_P041** OPTICAL STUDY OF CUBIC GALLIUM NITRIDE BAND-EDGE AND RELATION WITH RESIDUAL STRAIN
**A. Philippe, C. Bru-Chevallier, H. Gamez-Cuatzin, G. Guillot, E. Martinez-Guerrero, G. Feuillet, B. Daudin, P. Aboughe'Nze, Y. Monteil**

**Tu_P042** OPTICAL PROPERTIES OF AN AlInN INTERFACE LAYER SPONTANEOUSLY FORMED IN HEXAGONAL InN/ SAPPHIRE HETEROSTRUCTURES
**T.V. Shubina, V.V. Mamutin, V.A. Vekshin, V.V. Ratnikov, A.A. Toropov, S.V. Ivanov, M. Karlsteen, U. Södervall, M. Willander, G.R. Pozina, B. Monemar**

**Tu_P043** HIGH-TEMPERATURE LASING IN InGaN/GaN MULTIQUANTUM WELL HETEROSTRUCTURES
**I.P. Marko, E.V. Lutsenko, V.N. Pavlovskii, G.P. Yablonskii, O. Schön, H. Protzman, M. Lünenbürger, M. Heuken, B. Schineller, K. Heime**

**Tu_P044** RED LUMINESCENCE OF Mg-DOPED GaN
**M.W. Bayerl, M.S. Brandt, E.R. Glaser, A.E. Wickenden, D.D. Koleske, R.L. Henry, M. Stutzmann**

**Tu_P045** EXCITATION DENSITY DEPENDENCE OF PHOTOLUMINESCENCE AND BARRIER DOPING EFFECT IN $In_xGa_{1-x}N$ QUANTUM WELLS
**Eunsoon Oh, C.S. Sone, Hyeongsoo Park, O.H. Nam, Yongjo Park**

**Tu_P046** INFRARED REFLECTANCE INVESTIGATION OF UN-DOPED AND Si-DOPED GaN FILMS ON SAPPHIRE
**Z.C. Feng, Y.T. Hou, M.F. Li, S.J. Chuaa, W. Wang, L. Zhu**

**Tu_P047** OPTICAL BAND GAP DEPENDENCE ON THICKNESS AND COMPOSITION OF InxGA1-xN GROWN ON GAN
**C.A. Parker, M.J. Reed, J.C. Roberts, S.X. Liu, N.A. El-Masry, S.M. Bedair**

**Tu_P048** OPTICAL CHARACTERIZATION OF CUBIC AlGaN EPILAYERS BY CATHOLOLUMINESCENCE AND SPECTROSCOPIC ELLIPSOMETRY
**H. Okumura, T. Koizumi, Y. Ishida, H. Yaguchi, S. Yoshida, S. Chichibu**

**Tu_P049** STRUCTURAL AND OPTICAL ANALYSIS OF (IN,GA)N STRUCTURES GROWN BY MOCVD
**D. Rudloff, J. Bläsing, T. Riemann, J. Christen, A. Krost, M. Lünenbürger, H. Protzmann, M. Heuken**

**Tu_P050** NEAR-BAND GAP SELECTIVE PHOTOLUMINESCENCE IN WURTZITE GaN
**G. Neu, M. Teisseire, B. Beaumont, P. Gibart**

**Tu_P051** TIME-RESOLVED PHOTOLUMINESCENCE OF CUBIC GaN GROWN BY METALORGANIC VAPOR PHASE EPITAXY
**H. Yaguchi, J. Wu, H. Akiyama, M. Baba, K. Onabe, Y. Shiraki**

**Tu_P052** PHOTOLUMINESCENCE EXCITATION SPECTRUM STUDY ON GaN/Al0.15Ga0.85N MQWS
**T. Nishida, M. Kumagai, H. Ando, N. Kobayashi**

**Tu_P053** HOT ELECTRONS AND HOLES IN HIGHLY PHOTOEXCITED GaN EPILAYERS
**A. Zukauskas, G. Tamulaitis, R. Gaska, M.S. Shur, M.A. Khan, J.W. Yang**

**Tu_P054** FINITE-TEMPERATURE BAND-GAP RENORMALIZATION IN HIGHLY PHOTOEXCITED GaN EPILAYERS
**A. Zukauskas, S. Jursenas, G. Kurilcik, G. Tamulaitis, M.S. Shur, R. Gaska, J.W. Yang, M.A. Khan**

**Tu_P055** InGaN/GaN/AlGaN VERTICAL CAVITY SURFACE EMITTING LASER OPERATING AT ROOM TEMPERATURE AT OPTICAL PUMPING
**I.L. Krestnikov, W.V. Lundin, A.V. Sakharov, V.A. Semenov, A.S. Usikov, A.F. Tsatsul'nikov, N.N. Ledentsov, A. Hoffmann, Zh.I. Alferov, D. Bimberg**

**Tu_P056** AN INVESTIGATION INTO THE ORIGIN OF THE 3.424 eV PEAK IN THE LOW TEMPERATURE PHOTOLUMINESCENCE OF GaN GROWN BY MOLECULAR BEAM EPITAXY
**A. Bell, C.T. Foxon, I. Harrison, T. Cheng, D. Korakakis, S. Novikov, B. Ya Ber, Y.A. Kudriavtsev**

**Tu_P057** GREEN EMISSION FROM Tb-DOPED GaN GROWN BY MOVPE
**Kazuhiko Hara, Nobuyuki Ohtake**

**Tu_P058** EXCITONIC THERMALIZATION, TRANSPORT AND RECOMBINATION IN HOMOEPITAXIAL ALLIUM NITRIDE
**K.P. Korona, J. Kuhl, J.M. Baranowski, S. Porowski**

**Tu_P060** FAR-INFRARED REFLECTIVITY INVESTIGATIONS ON GaN SINGLE CRYSTALS AND HOMOEPITAXIAL LAYERS
**E. Frayssine, W. Knap, P. Prystawko, M. Leszczynski, B. Beaumont, T. Suski, P.Wisniewski, E. Litwin-Staszewska, S. Porowski**

**Tu_P061** A STUDY ON THE SILANE DOPING OF HETERO-EPITAXIAL MOCVD GROWN GaN
**P.R. Hageman, M.A.C. Devillers, A.R.A. Zauner, V. Kirilyuk, W.S. Bouwens, R.C.M. Crane, P.K. Larsen**

**Tu_P062** DETERMINATION OF OPTICAL CONSTANTS FOR CUBIC InxGa1-xN
**R. Goldhahn, J. Scheiner, S. Shokhovets, T. Frey, U. Köhler, D. As**

**Tu_P063** EMISSION DUE TO EXCITON SCATTERING BY LO PHONONS IN GALLIUM NITRIDE
**M.Wojdak, A.Wysmolek, K.Pakula, J.M.Baranowski**

**Tu_P064** FREE-CARRIER AND CRYSTAL-STRUCTURE PROPERTIES OF GROUP III-NITRIDE HETEROSTRUCTURES MEASURED BY INFRARED ELLIPSOMETRY
**M. Schubert, J.A. Woollam, A. Kassig, B. Rheinländer, J. Off, F. Scholz**

**Tu_P065** EVIDENCE FOR SPONTANEOUS POLARIZATION EFFECTS IN GaN/AlGaN QUANTUM WELLS
**J. Simon, R. Langer, A. Barski, N.T. Pelekanos**

**Tu_P066** IMPROVEMENT OF THE SPATIALLY INHOMOGENEOUS OPTICAL PROPERTIES OF GaN FILMS BY INDIUM DOPING DURING GAS-SOURCE MOLECULAR BEAM EPITAXY
**Ken-ichi Hoshi, Satoru Tanaka, Hidekazu Kumano, Ikuo Suemune, Xu-Qiang Shen, Peter Ramvall, Yoshinobu Aoyagi**

**Tu_P067** POLARISED MAGNETOLUMINESCENCE OF EXCITONS IN HOMOEPITAXIAL GaN LAYERS
**A. Wysmolek, M. Potemski, R. Stepniewski, J. Lusakowski, K. Pakula, J.M. Baranowski, G. Martinez, P. Wyder, I. Grzegory, S. Porowski**

**Tu_P068** MAGNETO-OPTICS OF BULK GALLIUM NITRIDE
**P.A. Shields, R.J. Nicholas, B. Beaumont, P. Gibart**

**Tu_P069** THE OPTICAL PROPERTIES AND RESIDUAL STRAIN OF THICK GaN FILMS WITH DIFFERENT THICKNESS USING PHOTOLUMINESCENCE (PL) AND PHOTOREFLECTANCE (PR)
**S.W. Park, J.W. Lee, P.W. Yu, J.B. Yoo**

**Tu_P070** EFFECT OF AN ELECTRIC FIELD ON THE ELECTROLUMINESCENCE AND THE PHOTOCURRENT IN InGaN SINGLE QUANTUM WELLS LIGTH EMITTING DIODES
**P. de Mierry, B. Beaumont, S. Dalmasso, M. Leroux, P. Gibart**

**Tu_P071** PHOTOLUMINESCENCE DYNAMICS IN STRAINED AlGaN/GaN QUANTUM WELLS
**R. Gaska, M.S. Shur, A. Bykhovski, G. Tamulaitis, A. Zukauskas, S. Jursenas, G. Kurilcik, M.A. Khan, J.W. Yang**

**Tu_P072** OPTICAL CHARACTERISTICS OF AlGaN, GaN, AND InGaN THIN FILMS: A COMPARISON AND TEMPERATURE DEPENDENCE
**Yong-Hoon Cho, T.J. Schmidt, G.H. Gainer, J.B. Lam, J.J. Song, S. Keller, U.K. Mishra, S.P. DenBaars, W. Yang, D.S. Kim, W. Jhe**

**Tu_P073** MULTIPHONON RESONANT RAMAN SCATTERING IN GaN/AlxGa1-xN QUANTUM WELLS
**F. Demangeot, J. Gleize, J. Frandon, M.A. Renucci, M. Kuball, N. Grandjean, J. Massies**

**Tu_P074** PHOTOLUMINESCENCE DYNAMICS OF GaInN/GaN QUANTUM WELLS WITH DIFFERENT In CONCENTRATIONS
**M. Klose, K.P. Korona, J. Kuhl, M. Heuken**

**Tu_P075** STRONG PHOTOLUMINESCENCE EMISSION FROM GaN ON SrTiO3 SUBSTRATE
**H. Tampo, H. Asahi, M. Hiroki, K. Asami, S. Gonda**

**Tu_P076** INFLUENCE OF BARRIER DOPING AND BARRIER COMPOSITION ON OPTICAL GAIN IN (In,GN MQWs)
**M. Vehse, P. Michler, J. Gutowski, S. Figge, D. Hommel, H. Selke, P. Ryder, S.P. DenBaars**

**Tu_P077** RAMAN SCATTERING IN GaN/AlN QUANTUM DOT STRUCTURES
**J. Gleize, F. Demangeot, J. Frandon, M.A. Renucci, M. Kuball, F. Widmann, B. Daudin**

**Tu_P078** POLARIZATION FIELD EFFECTS AND INTERFACE STATES IN InGaN SINGLE QUANTUM WELLS
**J.C. Harris, S. Kako, T. Someya, Y. Arakawa**

**Tu_P079** EXCITON ENERGY STRUCTURE IN WURTZITE GaN
**A.V. Rodina, L. Eckey, M. Dietrich, A. Göldner, Al.L. Efros, M. Rosen, A. Hoffmann, B.K. Meyer**

**Tu_P080** OPTICAL PROPERTIES OF NITRIDE QUANTUM WELLS: HOWTO SEPARATE FLUCTUATIONS AND POLARIZATION FIELD EFFECTS
**A. Hangleiter, J. S.Im, J. Off, F. Scholz**

**Tu_P081** QUANTUM-CONFINED STARK EFFECT IN AN AlGaN/GaN/AlGaN SINGLE QUANTUM WELL STRUCTURE
**T. Deguchi, K. Sekiguchi, A. Nakamura, T. Sota, R. Matsuo, S. Chichibu, S. Nakamura**

**Tu_P082** REFLECTANCE DIFFERENCE SPECTROSCOPY CHARACTERIZATION OF $Al_xGa_{1-x}N$-COMPOUND LAYERS
**U. Rossow, D.E. Aspnes, O. Ambacher, V. Cimalla, N.V. Edward, M. Bremser, R.F. Davis, J.A. Schaefer, M. Stutzmann**

**Tu_P083** OPTICAL NONLINEARITIES IN THE BAND EDGE REGION OF HIGHLY EXCITED (Al, In)GaN THIN FILMS STUDIED VIA FEMTOSECOND AND NANOSECOND OPTICAL PUMP-PROBE SPECTROSCOPY
**T.J. Schmidt, A.J. Fischer, J.B. Lam, J.J. Song**

**Tu_P084** HIGHLY PHOTO-EXCITED NITRIDE QUANTUM WELLS: RENORMALIZATION OF THE BANDGAP AND OF THE EXCITON ENERGY
**Pierre Bigenwald, Alexey Kavokin, Philippe Christol, Bernard Gil, Pierre Lefebvre**

**Tu_P085** A MODEL OF THE EFFICIENT UV EMISSIONS ENCOMPASSING TWO RECOMBINATION CENTERS IN InxGa1-xN EPILAYERS
**H. Kudo, H. Ishibashi, R. Zheng, Y. Yamada, T. Taguchi**

**Tu_P086** INVESTIGATION OF PHOTOLUMINESCENCE PROPERTIES OF CUBIC-GaN MOCVD EPILAYERS GROWN ON GaAs(100) SUBSTRATES
**N. Moreaud, M. Moret, S. Ruffenach-Clur, O. Briot, J. Calas, R.L. Aulombard**

**Tu_P087** SPECTRAL STUDY OF PHOTOLUMINESCENCE FROM GaInN/GaN MQW USING CW AND TIME RESOLVED MEASUREMENT
**S. Watanabe, N. Yamada, T. Takeuchi, Y. Yamada, T. Taguchi, H. Amano, I. Akasaki**

**Tu_P088** MAGNETO-LUMINESCENCE AND TIME-RESOLVED LUMINESCENCE OF EXCITONIC TRANSITIONS IN HOMOEPITAXIAL GaN LAYERS
**Y. Yamada, S. Kurai, T. Taguchi, T. Sugahara, K. Nishino, S. Sakai**

**Tu_P089** CW AND TIME-RESOLVED OPTICAL SPECTROSCOPY OF GaN EPILAYERS AND GaN-AlGaN QUANTUM WELLS GROWN ON A-PLANE SAPPHIRE
**M. Gallart, T. Taliercio, Andenet Alemu, P. Lefebvre, B. Gil, J. Allègre, H. Mathieu, Shuji Nakamura**

**Tu_P090** SLOW SPIN-RELAXATION OBSERVED IN InGaN/GaN MULTI-QUANTUM WELLS
**M. Julier, A. Vinattieri, M. Colocci, P. Lefebvre, B. Gil, D. Scalbert, C.A. Tran, R.F. Karlicek Jr.**

**Tu_P091** EXPERIMENTAL INVESTIGATION OF CUBIC TO HEXAGONAL RATIO FOR GaN LAYERS DEPOSITED ON 3C-SiC/Si
**J. Camassel, P. Vicente, N. Planes, J. Pankove, F. Namavar**

**Tu_P092** PHOTOREFLECTANCE SPECTROSCOPY INVESTIGATION OF GaN-AlGaN QUANTUM WELL STRUCTURES
**Tomasz J. Ochalski, B. Gil, T. Bretagnon, P. Lefebvre, N. Grandjean, J. Massies, M. Leroux**

**Tu_P093** OPTICAL PROPERTIES OF AS-GROWN, N2+-ION IMPLANTED AND ALPHA-PARTICLE IRRADIATED GaN
**H.W. Kunert, S. Juillaguet, J. Camassel, J.B. Malherbe, D.J. Brink, L. Prinsloo**

**Tu_P094** EMISSION QUANTUM EFFICIENCY OF Eu DOPED GaN DETERMINED BY PHOTOCALORIMETRIC SPECTROSCOPY
**Takahiro Maruyama, Hitomi Sasaki, Shin-Ichi Morishima, Katsuhiro Akimoto**

**Tu_P095** EVIDENCE FOR RELAXED GROWTH OF GaN ON SiC(0001): CORRELATION TO THE HETEROJUNCTION ELECTRONIC PROPERTIES
**R. Lantier, F. Boscherini, A. Rizzi, F. D'Acapito, S. Mobilio, H. Lüth**

**Tu_P096** IN-PLANE AND IN-DEPTH PROPERTIES OF GaN EPILAYERS AND GaN/AlGaN QUANTUM WELL STRUCTURES STUDIED WITH SCANING AND DEPTH-PROFILING CATHODOLUMINESCENCE
**M. Godlewski, E.M. Goldys, M.R. Phillips, R. Langer, A. Barski**

**Tu_P097** DEFECT COMPLEXES IN HIGHLY Mg-DOPED GaN STUDIED BY RAMAN SPECTROSCOPY
**A. Kaschner, H. Siegle, G. Kaczmarczyk, A. Hoffmann, C. Thomsen, U. Birkle, S. Einfeldt, D. Hommel**

**Tu_P098** OPTICAL AND STRUCTURAL STUDIES OF PHASE SEPARATINON IN InGaN FILM GROWN BY MOCVD
**Seong-Ju Park, Yong-Tae Moon, Dong-Joon Kim, Keun-Man Song**
PHOTOLUMINESCENCE MAPPING AND RUTHERFORD BACK SCATTERING OF InGaN EPILAYERS
**K.P. O'Donnell, M.E. White, S. Pereira, M. Wu, A. Vantomme, W. Van der Stricht, K. Jacobs**

**Tu_P100** CATHODOLUMINESCENCE FROM InGaN/GaN MQW GROWN ON AN EPITAXIALLY LATERAL OVERGROWN GAN EPILAYER
**C. Trager-Cowan, A. Mohammed, S.K. Manson-Smith, K.P. O'Donnell, K. Jacobs, I. Moerman, P. Demeester**

**Tu_P101** CHEMICAL-BASED AQUEOUS SURFACE TREATMENTS OF GaN STUDIED BY SYNCHROTRON RADIATION CORE-LEVEL SPECTROSCOPY
**T.F. Kuech, Jingxi Sun, K.A. Rickert, L. Zhang, J.M. Redwing, A.B. Ellis, F.J. Himpsel**

**Tu_P102** RAMAN MICROSCOPY OF LATERAL EPITAXIAL OVERGROWTH OF GaN ON SAPPHIRE
**Frederick H. Long, M. Pophristic, M. Schurman, J. Ramer, I.T. Ferguson**

**Tu_P103** DETERMINATION OF BAND STRUCTURE PARAMETERS IN NITRIDE ALLOYS FOR USE IN QUANTUM WELL CALCULATIONS
**D.J. Dugdale, S.K. Pugh, S. Brand, R.A. Abram**

**Tu_P104** CONFINED EXCITONS IN GaN-AlGaN QUANTUM WELLS
**Pierre Bigenwald, Pierre Lefebvre, Thierry Bretagnon, Bernard Gil**

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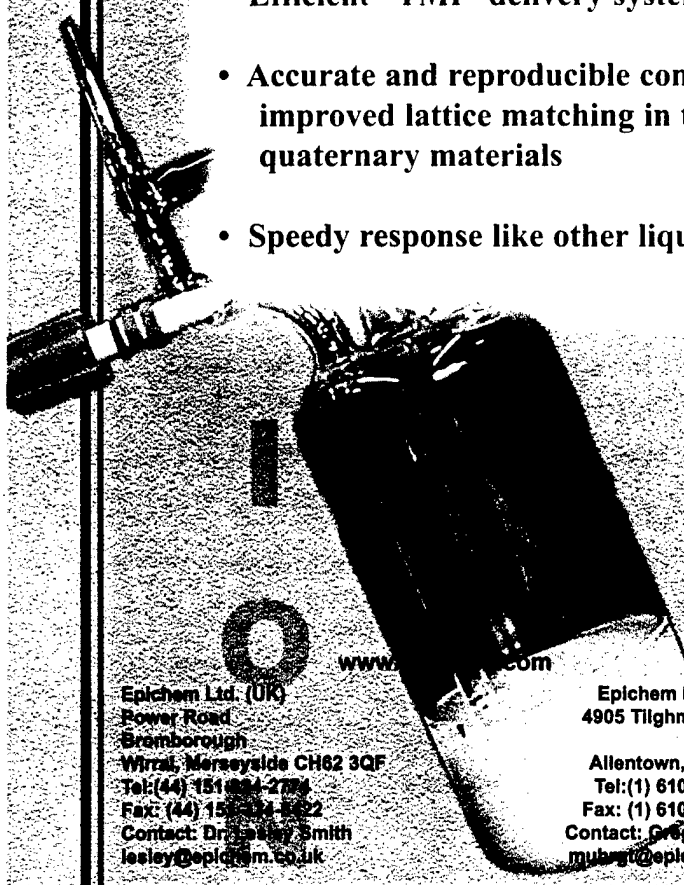

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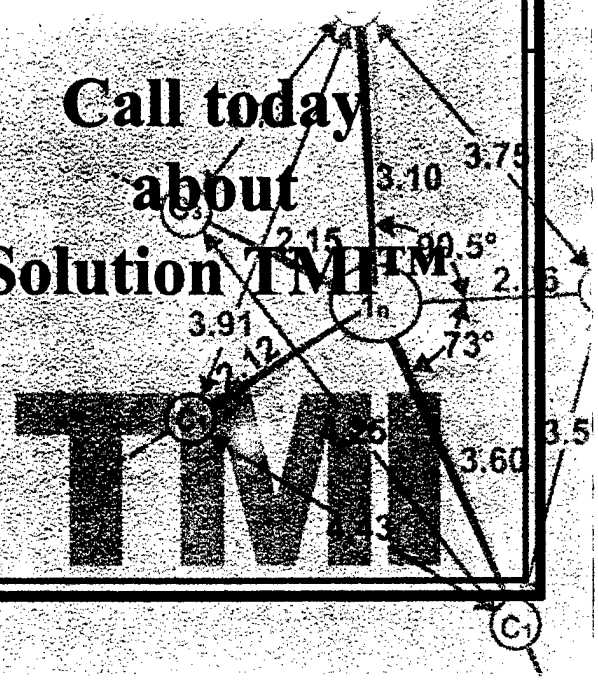


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# POSTER SESSION 3

## Wednesday July 7th

**We_P001** MOCVD GROWTH AND CHARACTERIZATION OF AlInGaN QUATERNARY ALLOYS
**M.E. Aumer, S.F. LeBoeuf, F.G. McIntosh, Y.C. Chang, J.F. Muth, R.M. Kolbas, S.M. Bedair**

**We_P002** THE EFFECT OF GRAIN BOUNDARIES ON ELECTRICAL CONDUCTIVITY IN THIN GaN LAYERS
**J. Salzman, I.Shalish, C.Uzan-Saguy, L. Kronik, B. Meyler , R. Kalish, Y.Shapira**

**We_P003** BEHAVIOR OF Mg IN GaN GROWN BY METAL-ORGANIC CHEMICAL VAPOR DEPOSITION
**Jia-Ming Lee, Hway-Fen Hong, Chang-Cheng Chuo, Tzer-En Nee, Jen-Inn Chyi**

**We_P004** HYDRIDE VAPOR PHASE EPITAXY FOR ALGAN/INGAN HETEROSTRUCTURES
**D. Tsvetkov, A. Nikolaev, Yu. Melnik', M. Mynbaeva, V. Dmitriev**

**We_P005** INDIUM INCORPORATION AND DROPLET FORMATION DURING MOLECULAR BEAM EPITAXY OF InGaN
**R.A. Talalaev, O.V. Bord, S.Yu. Karpov, Yu.N. Makarov**

**We_P006** (GaMg)N- NEW WIDE BAND GAP SEMICONDUCTOR
**T. Suski, P. Perlin, A. Pietraszko, M. Leszczyński, M. Boækowski, I. Grzegory, S. Porowski**

**We_P007** IMPROVED AlGaN/GaN MATERIALS FOR MICROWAVE DEVICE APPLICATIONS
**A.E. Wickenden, D.D. Koleske, R.L. Henry, R.J. Gorman, M.E. Twigg**

**We_P008** PARTIALLY ORDERED AlGaN ALLOYS; GROWTH AND OPTOELECTRONICS PROPERTIES
**T.D. Moustakas, E. Iliopoulos, M. Misra, D. Korakakis, K.F. Ludwig Jr., C.B. Lioutas, L.H. Robins**

**We_P009** QUANTITATIVE MODEL FOR THE MBE - GROWTH OF TERNARY NITRIDES
**Robert Averbeck, Henning Riechert**

**We_P010** STUDY OF INDIUM INCORPORATION INTO InGaN TERNARY ALLOYS GROWN BY LOW-PRESSURE METALORGANIC VAPOR PHASE EPITAXY (LP-MOVPE)
**H.P.D. Schenk, F. Omnes, M. Leroux, P. de Mierry, B. Beaumont, P. Gibart**

**We_P011** GaN(n) / SiC(p) HETEROJUNCTIONS GROWN BY METAL ORGANIC VAPOUR PHASE EPITAXY (MOVPE)
**H. Lahrèche, S. Laügt, M. Vaille, A. Bouillé, B. Beaumont, P. Vennéguès, P. Gibart**

**We_P012** GROWTH OF Eu DOPED GaN AND ELECTROLUMINESCENCE FROM MIS STRUCTURE
**Shinichi Morishima, Takahiro Maruyama, Katsuhiro Akimoto**

**We_P013** GROWTH OF InGaN ALLOY ON CUBIC GaN BY METALORGANIC VAPOR-PHASE EPITAXY
**Atsushi Nakadaira, Hidenao Tanaka**

**We_P014** METAL-ORGANIC VAPOR PHASE EPITAXY GROWTH AND PROPERTIES OF GaInNAs BULK AND MULTIPLE QUANTUM WELL STRUCTURES
**C. Asplund, A. Fujioka, M. Hammar, G. Landgren**

**We_P015** THE INFLUENCE OF GROWTH CONDITIONS ON THE ELECTRICAL PROPERTIES OF MAGNESIUM-DOPED GALLIUMNITRIDE GROWN BY MOVPE
**B. Kuhn, M. Welsch, M. Kessler, F. Scholz**

**We_P016** THE MICROSTRUCTURE OF Ti/Al AND TiN AS OHMIC CONTACTS ON GALLIUM NITRIDE
**P. Ruterana, G. Nouet, Th. Kehagias, Ph. Komninou, Th. Karakostas, M.A. di Forte Poisson, F. Huet, H. Morkoç**

**We_P017** MICROSTRUCTURAL INVESTIGATION OF OXIDIZED NI/AU OHOMIC CONTACT TO p-TYPE GaN
**Li-Chien Chen, Fu-Rong Chen, Ji-Jung Kai, Jin-Kuo Ho, Charng-Shyang Jong, Chien C. Chiu, Chao-Nien Huang, Chin-Yuen Chen, Kwang-Kuo Shih**

**We_P018** HIGHLY REFLECTIVE GaN/GaAlN AND AlN/GaAlN BRAGG MIRRORS GROWN BY MOLECULAR BEAM EPITAXY
**R. Langer, A. Barski, J. Simon, N.T. Pelekanos, O. Konovalov, R. André, Le Si Dang**

**We_P019** INFLUENCE OF Si DOPING ON THE SUBGRAIN STRUCTURE OF GaN GROWN ON AlN/Si (111)
**S.I. Molina, A.M. Sánchez, F.J. Pacheco, R. García, M.A. Sánchez-García, E. Calleja**

**We_P020** CHARACTERIZATION OF InGaN/GaN MQW. APPLICATION TO LED's
**F. Huet , M.A. di Forte Poisson, A. Romann, M. Tordjman, J. di Persio**

**We_P021** OPTICAL CHARACTERIZATION OF AlxGa1-xN THIN FILM WAVEGUIDES USING PRISM COUPLING TECHNIQUE
**E. Dogheche, F. Omnes, P. Ruterana, B. Belgacem, D. Remien**

**We_P022** EVIDENCES FOR THE EXISTENCE OF A HIGH-CARRIER-DENSITY LAYER NEAR NONDOPED-GaN/a-Al2O3 SUBSTRATE INTERFACE
**A. Yamamoto, K. Ueno, K. Azuma, Y. Tsuji, A. Hashimoto**

**We_P023** IMPROVEMENT OF LOW-INTENSITY ULTRAVIOLET PHOTODETECTORS BASED ON AlGaN WITH LOW THREADING DISLOCATION DENSITY
**C. Pernot, A. Hirano, M. Iwaya, T. Detchprohm, H. Amano, I. Akasaki**

**We_P025** QUANTUM YIELD of GaN and (Ga,Al)N BAND-GAP GRADED ULTRAVIOLET p-n DETECTORS
**K.J. Plucinski, M.J. Malachowski**

**We_P026** SPECTRA AND QUANTUM EFFICIENCY OF LIGHT-EMITTING DIODES BASED ON GaN HETEROSTRUCTURES WITH QUANTUM WELLS
**A.E. Yunovich, V.E. Kudryashov, S.S. Mamakin, A.N. Turkin, A.N. Kovalev, F.I. Manyakhin**

**We_P027** THERMO-CHEMICAL STABILITY OF PLASMA-DEPOSITED SILICON OXYCARBIDE THIN FILMS SUBJECTED TO POST-DEPOSITION RAPID THERMAL ANNEALING: A MODEL SYSTEM FOR UNDERSTANDING THE FORMATION OF DEVICE-QUALITY SiC-SiO2 INTERFACES
**D.M. Wolfe, G. Lucovsky**

**We_P028** DIELECTRIC BRAGG MIRRORS FOR InGaN SURFACE-EMITTING LASERS
**R.W. Martin, Taek Kim, D. Burns, I.M. Watson, M.D. Dawson, T.F. Krauss, J.H. Marsh, R.M. de La Rue, S. Romani, H. Kheyrandish**

**We_P029** PREPARATION OF LOW DEFECT DENSITY GaN-Ga2O3 SEMICONDUCTOR/INSULATOR INTERFACES ON POLAR GAN FACES BY 300°C REMOTE PLASMA-ASSISTED OXIDATION AND INTEGRATED INTO MOS DEVICES WITH PLASMA-DEPOSITED SiO2 DIELECTRICS
**R. Therrien, G. Lucovsky, R.F. Davis**

**We_P030** ELECTRICAL PROPERTIES OF THE SI ION IMPLANTATION IN THE MG DOPED P-GAN
**Shih-Hsiung Chang, Wei-Chih Lai, Mesio Yokoyama, Jan-Dar Guo, Jian-Shihn Tsang, Chiung-Chi Tsai, Chen-Shiung Chang, Chun-Yen Chang**

**We_P031** CHEMICAL AND COMPLEMENTARY ROLE OF FLUORINE IN A CHLORINE-BASED REACTIVE ION ETCHING OF GaN
**F. Karouta, B. Jacobs, O. Schoen, M. Heuken**

**We_P032** TRANSFER OF MQW InGaN/GaN LEDS TO COPPER SUBSTRATES USING LASER ASSISTED DEBONDING
**P.R. Tavernier, M.C. Hanson, S.P. DenBaars, D.R. Clarke**

**We_P033** ROOM TEMPERATURE CHARACTERISTICS OF InGaN/GaN LASER DIODE GROWN BY A LOW PRESSURE MOCVD SYSTEM
**Y. Park, B.J. Kim, Jae-Won Lee, O.H. Nam, C. Sone, H. Park, Eunsoon Oh, H. Shin, S. Chae, J. Cho, Ig-Hyun Kim, J.S. Khim, S. Cho, T.I. Kim**

**We_P034** FABRICATION AND OPTICAL PROPERTIES OF III-NITRIDE MICROSTRUCTURES
**H.X. Jiang, K.C. Zeng, D. Lun, J.Y. Lin, H. Morkoç, W. Yang**

**We_P035** PHOTORESPONSE AND PHYSICAL PROPERTIES OF PHOTOCONDUCTOR AND PHOTOVOLTAIC GaN BASED UV DETECTORS
**V. Garber, G. Bahir, J. Salzman, A. Abare, S. Den Baars, L. Coldren**

**We_P036** THE MOBILITY OF AlGaN/GaN AND GaN/InGaN HETEROSTRUCTURES AND DEVICE PERFORMANCE OF MODULATION DOPED FIELD-EFFECT TRANSISTORS
**C.F. Lin, H.C. Cheng, G.C. Chi, J.I. Chyi**

**We_P037** GaN-BASED QUANTUM-EFFECT ELECTRON DEVICES USING QUANTUM INTERFERENCE OF HOT ELECTRON WAVES
**J. Shirakashi, M. Shimizu, H. Okumura**

**We_P038** HIGH-TEMPERATURE PROCESSING OF GaN: THE INFLUENCE OF THE ANNEALING AMBIENT ON STRAIN IN GaN
**M. Kuball, J.M. Hayes, A. Bell, I. Harrison, D. Korakakis, C.T. Foxon**

**We_P039** NANO-FABRICATION OF GaN PILLARS USING FOCUSED ION BEAM ETCHING
**M. Kuball, F.H. Morrissey, M. Benyoucef, I. Harrison, D. Korakakis, C.T. Foxon**

**We_P040** AlGaN METAL-SEMICONDUCTOR-METAL PHOTODIODES
**E. Monroy, F. Calle, E. Muñoz, F. Omnès**

**We_P041** SCANNING ELECTROLUMINESCENCE MICROSCOPY A POWERFUL NOVEL CHARACTERIZATION TOOL FOR LIGHT EMITTING DIODES
**P. Fischer, M. Zacharias, J. Christen, V. Schwegler, C. Kirchner, M. Kamp**

**We_P042** VISIBLE BLIND AlGaN-PHOTOCONDUCTORS WITH INTEGRATED FILTERS GROWN BY PLASMA INDUCED MOLECULAR BEAM EPITAXY
**U. Karrer, A. Dobner, O. Ambacher, M. Stutzmann**

**We_P043** ROOM-TEMPERATURE CW OPERATION OF GaInN MULTIPLE QUANTUM WELL LASER DIODES WITH OPTIMIZED INDIUM CONTENT
**A. Tsujimura, A. Ishibashi, Y. Hasegawa, S. Kamiyama, I. Kidoguchi, R. Miyanaga, M. Suzuki, M. Kume, K. Harafuji, Y. Ban**

**We_P044** AlGaN/GaN HEMTS: SPONTANEOUS AND STRAIN-INDUCED POLARIZATION FIELDS
**J.A. Garrido, J.L. Sanchez-Rojas, A. Jimenez, E. Muñoz, F. Omnes, P. Gibart**

**We_P045** ELECTROLUMINESCENCE CHARACTERIZATION OF CUBIC GALLIUM NITRIDE p-n JUNCTIONS GROWN ON SiC/Si SUBSTRATES BY MBE
**H. Gamez-Cuatzin, J. Tardy, P. Rojo-Romeo, A. Philippe, A. Souifi, C. Bru-Chevallier, G. Guillot, E. Martinez-Guerrero, G. Feuillet, B. Daudin, P. Aboughe'nze, Y. Monteil**

**We_P046** BIAS ASSISTED, ROOM TEMPERATURE PHOTOELECTROCHEMICAL (PEC) ETCHING OF P-TYPE GaN
**M.I. Nathan, J.E. Borton, C.Cai, P. Chow, J.M. Van Hove, A. Wowchak, H. Morkoç**

**We_P047** HIGH ETCH RATE GaN PROCESSING USING AN INDUCTIVELY COUPLED PLASMA SOURCE
**M.E. Ryan, A.C. Camacho, J.K. Bhardwaj**

**We_P048** WAVELENGTH SELECTIVE AND TRUE SOLAR-BLIND GaN/AlGaN p-i-n PHOTODIODES
**E. Tarsa, P. Kozodoy, B.P. Keller, S.B. Fleischer, U.K. Mishra**

**We_P049** ELECTRICAL AND PHOTOELECTRONIC PROPERTIES OF HEXAGONAL GaN
**R. Seitz, C. Gaspar, T. Monteiro, L. Pereira, E.Pereira**

**We_P050** FAST, LOW-LEAKAGE p-i-n (Al,Ga)N-BASED SOLAR-BLIND UV DETECTORS ON LATERALLY EPITAXIALLY OVERGROWN GaN
**G. Parish, S. Keller, E.J. Tarsa, P. Kozodoy, J.P. Ibbetson, H. Marchand, P.T. Fini, S.B. Fleischer, S.P. DenBaars, U.K. Mishra**

**We_P051** EFFECT OF AlGaN/GaN STRAINED LAYER SUPERLATTICE PERIOD ON InGaN MQW LASER DIODES
**M. Hansen, A.C. Abare, P. Kozodoy, T.M. Katona, J.S. Speck, U.K. Mishra, L.A. Coldren, S.P. DenBaars**

**We_P052** DEPLETION REGION OF Mg-DOPED GaN INVESTIGATED BY CAPACITANCE MEASUREMENTS
**P. Kozodoy, S.P. DenBaars, U.K. Mishra**

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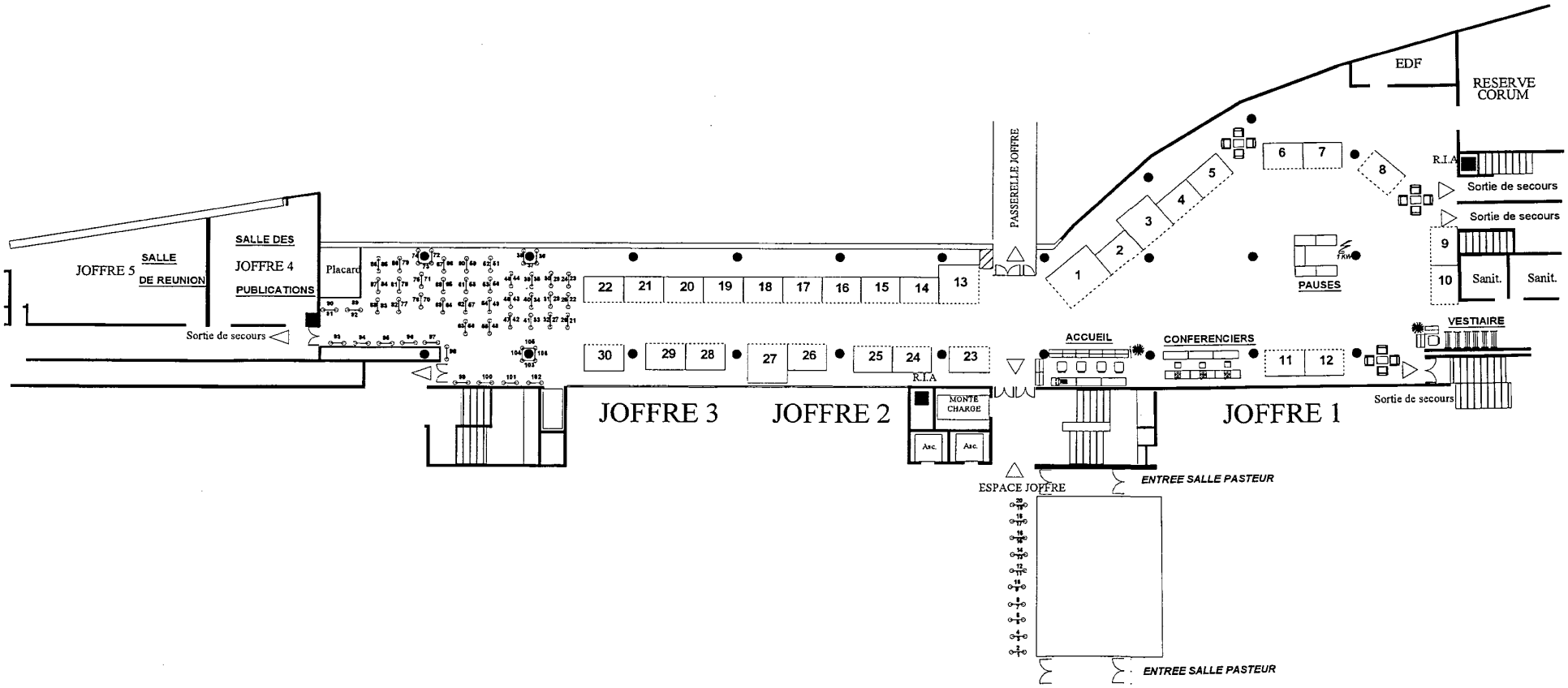

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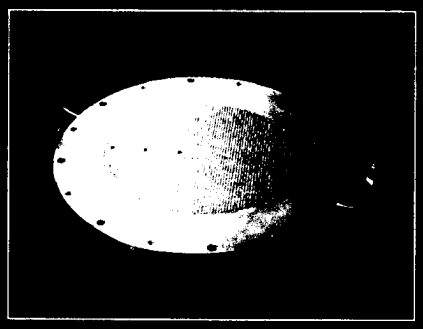

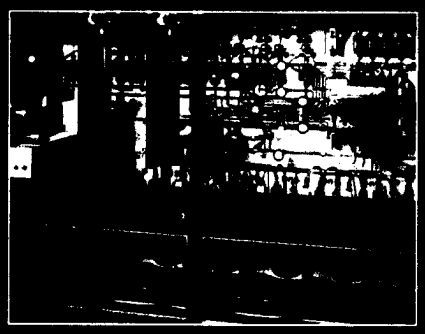

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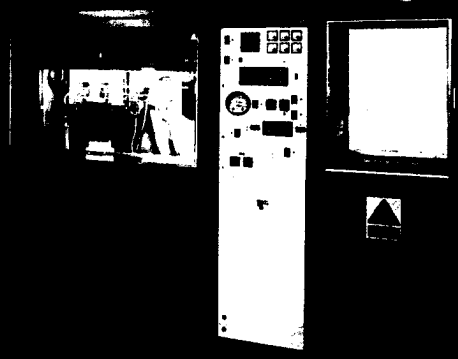

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