



Programme for UKNC Conference, Manchester

10th-11th January 2018

Wednesday 10th January

10.15-10.40: Arrival/Registration/Coffee

10.40-10.45: Opening remarks (Rachel Oliver / David Binks / Philip Shields)

10.45 – 12.45: Session 1 - Photonics and Nanostructures

10.45-11.30: *Integrated photonics with III-Nitrides on silicon*

Philippe Boucaud

Institut des sciences de l'ingénierie et des systèmes (INSIS), French National Centre for Scientific Research, Paris, France

11.30-11.45: *GaN Distributed Bragg Reflector Cavity for Sensing Applications*

S. Jia¹, E.Le.Boulbar², K.Balram¹, J.R. Pugh¹, T. Wang³, D.W.E. Allsopp², P.A. Shields² and M.J. Cryan¹

¹Department of Electrical and Electronic Engineering, University of Bristol,

²Department of Electrical and Electronic Engineering, University of Bath,

³Department of Electronic and Electrical Engineering, University of Sheffield

11.45-12.00: *Ultra-bright, ultra-pure single photons from InGaN QDs embedded in porous micropillars*

H.P. Springbett^{1,2}, K. Gao², T. Zhu¹, M. Holmes^{2,3}, Y. Arakawa^{2,3}, R.A. Oliver¹

¹Department of Materials Science and Metallurgy, 27 Charles Babbage Road, Cambridge, CB30FS, United Kingdom

²Institute of Industrial Science (IIS), The University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo, 153-8505, Japan

³Institute for Nano Quantum Information Electronics (NanoQuine), The University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo, 153-8505, Japan

12.00-12.15 *Built-in fields, electronic and optical properties of III-Nitride nanostructures: The role of nonlinear piezoelectric effects*

Saroj Kanta Patra^{1,2}, Stefan Schulz¹

¹Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland

²Department of Electrical Engineering, University College Cork, Cork, Ireland

12.15-12.30: *Hybrid top-down/bottom up fabrication of regular arrays of AlN/AlGaIn core-shell nanorods for deep-UV emission*

P.M. Coulon¹, G. Kusch², P. Fletcher³, P. Chausse¹, R.W. Martin², P.A. Shields¹

¹Dept. Electrical & Electronic Engineering, University of Bath, Bath, BA2 7AY, UK 0FS, UK

²Department of Physics, SUPA, University of Strathclyde, G4 0NG, UK

³Microscope and Analysis Suite, University of Bath, Bath, BA2 7AY, UK

12.30-12.45: *Monolithic multiple colour emission from InGaN/GaN MQWs grown on patterned non-polar (11-20) GaN*

Y. Gong, L. Jiu, P. Flecher, J. Bai, and T. Wang

Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield

12.45-13.45: Lunch

13.45-15.15: Session 2 - New nitride materials and processes

13.45-14.00: *High-temperature molecular beam epitaxy of hexagonal boron nitride for 2D and DUV applications.*

T.S. Cheng¹, A. Summerfield¹, J.D. Albar¹, A. Davies^{1,2}, C.J. Mellor¹, A.N. Khlobystov², L. Eaves¹, C.T. Foxon¹, P.H. Beton¹, S.V. Novikov¹

¹School of Physics and Astronomy, University of Nottingham, Nottingham NG7 2RD, UK

²School of Chemistry, University of Nottingham, Nottingham NG7 2RD, UK

14.00-14.15: *Structural and optical characterization of ScGaN grown using e-Beam PVD*
S. Pace^{1,2}, R.J. Davies², M.A. Moram^{1,2}

¹Cavendish Laboratory, Physics Department, University of Cambridge, Cambridge (UK)

²Department of Materials, Imperial College London, London (UK)

14.15-14.30: *Hysteretic photochromic switching in doubly doped GaN(Mg):Eu – a summary of recent results*

P.R. Edwards¹, K.P. O'Donnell¹, A.K. Singh^{1,2}, D. Cameron¹, K. Lorenz³, M. Yamaga⁴, J.H. Leach⁵, M.J. Kappers⁶ and M. Boćkowski⁷

¹SUPA Department of Physics, University of Strathclyde, 107 Rottenrow, Glasgow G40NG, Scotland, UK

²School of Materials Science and Technology, Indian Institute of Technology (B.H.U.), Varanasi 221005, India

³IST, Universidade de Lisboa, CTN, Estrada Nacional 102695-066 Bobadela LRS Portugal

⁴Department of Mathematical and Design Engineering, Gifu University, Gifu 501-1193, Japan

⁵KYMA Technologies, 8829 Midway West Rd. Raleigh, NC 27612, U.S.A.

⁶Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge CB30FS, England, UK

⁷Institute of High Pressure Physics PAS, Sokolowska 29/37, 01-142 Warsaw, Poland

14.30-14.45: *Mechanisms to form subsurface nanopores in GaN and AlGaN*
P.H. Griffin, T. Zhu, J.C. Jarman, B. Ding & R.A. Oliver
Department of Materials Science and Metallurgy, University of Cambridge, 27
Charles Babbage Road, Cambridge, CB3 0FS, United Kingdom

14.45-15.00: *Stacking Fault Related Photoluminescence in Zincblende GaN Epilayers*
S. A. Church¹, S. Hammersley¹, P. W. Mitchell¹, M. J. Kappers², L. Y. Lee², F.
Massabuau², S. L. Sahonta², M. Frentrop², D. Nilsson³, L. J. Shaw³, D. J.
Wallis^{2,4}, C. J. Humphreys², R. A. Oliver², D. J. Binks¹ and P. Dawson¹
¹Photon Science Institute & School of Physics and Astronomy, University of
Manchester.
²Department of Materials Science & Metallurgy, University of Cambridge.
³Anvil Semiconductors Ltd, Future Business Centre, King's Hedges Road,
Cambridge.
⁴Centre for High Frequency Engineering, University of Cardiff, 5 The Parade,
Newport Road, Cardiff, CF24 3AA

15.00-15.15: *X-ray diffraction studies of zincblende GaN epilayers grown on 3C-SiC/Si*
Martin Frentrop¹, Lok-Yi Lee¹, Suman-Lata Sahonta¹, Menno Kappers¹, Peter
W Mitchell², Rachel A Oliver¹, Colin J Humphreys¹ & David J Wallis^{1,3}
¹University of Cambridge, Department of Materials Science & Metallurgy, 27
Charles Babbage Road, Cambridge CB3 0FS, United Kingdom
²School of Physics and Astronomy, University of Manchester, M13 9PL
³Centre for High Frequency Engineering, University of Cardiff, 5 The Parade,
Newport Road, Cardiff, CF24 3AA

15.15-15.45: Tea

15.45-16.15 Session 3 – Optical characterisation

15.45-16.00: *Saturation of localised quantum well ground state as a mechanism for
efficiency droop*
George M. Christian¹, Stefan Schulz², Simon Hammersley¹, Menno J.
Kappers³, Colin J. Humphreys³, Rachel A. Oliver³, David J. Binks¹, Phil
Dawson¹
¹School of Physics and Astronomy, Photon Science Institute, University of
Manchester, Manchester M13 9PL, UK
²Tyndall National Institute, Lee Maltings, Cork, Ireland
³Department of Materials Science and Metallurgy, 27 Charles Babbage Road,
University of Cambridge, Cambridge CB3 0FS, UK

16.00-16.15: *Optical properties of In_xAl_{1-x}N and related III-N semiconductors across the full
range of composition*
Shahab N. Alam¹, Vitaly Z. Zubialevich¹, Stefan Schulz¹, Eoin P. O'Reilly^{1,2}
& Peter J. Parbrook^{1,3}
¹Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland
²Department of Physics, University College Cork, Cork, Ireland
³School of Engineering, University College Cork, Cork, Ireland

16.15-17.00 Special session

16.15-17.00 Invited talk: *Nitrides: past, present and future*

Colin Humphreys

Department of Materials Science and Metallurgy, 27 Charles Babbage Road,
University of Cambridge, Cambridge CB3 0FS, UK

17.00-18.00 AGM

19.15-22.30 Conference dinner at the Manchester Museum

Thursday 11th January

9.00-10.30: Session 4 - Electronic devices I

9.00-9.45: *Gallium Nitride Electronics: The Next Silicon*

Tomas Palacios

MIT Electrical Engineering & Computer Science, 77 Massachusetts Avenue,
Cambridge, MA 02139

9.45-10.00: *Extending the Cooling Limit for GaN-on-diamond Microwave Electronics*

J.W. Pomeroy¹, C. Yuan¹, Y. Zhou¹, C. Middleton¹, M.J. Uren¹, G. Zang², H. Cao², H. Navarro², Y. Ding², and M. Kuball¹.

¹Centre for Device Thermography and Reliability (CDTR), H.H. Wills Physics Laboratory, University of Bristol, UK.

²School of Chemical Engineering, University of Birmingham, UK

10.00-10.15: *Effects of silicon nitride stoichiometry on the performance of AlGaN/GaN HEMTs for power electronic applications*

Zaffar H. Zaidi, Kean B. Lee, Penglei Li, Jeng S. Cheong, Hongtu Qian, Sheng Jiang, and Peter A. Houston

Department of Electronic and Electrical Engineering, The University of Sheffield, Mappin Street, S1 3JD Sheffield, United Kingdom

10.15-10.30: *High-Power-Density GaN HEMT Amplifiers for Millimeter-Wave Applications*

K. Makiyama^{1,2}, T. Ohki^{1,2}, S. Ozaki^{1,2}, Y. Niida², N. Okamoto^{1,2}, Y. Minoura^{1,2}, M. Sato^{1,2}, Y. Kamada^{1,2}, T. Ishiguro², K. Joshin^{1,2} and N. Nakamura^{1,2}

¹Fujitsu Limited

²Fujitsu Laboratories Ltd., 10-1 Morinosato-Wakamiya, Atsugi, 243-0197, Japan

10.30-11.00: Coffee

11.00-12.45: Session 5 - Electronic Devices 2

11.00-11.15: *Self-compensation of Carbon in AlGaN*

B. Rackauskas¹, M. J. Uren¹, S. Stoffels², M. Zhao², S. Decoutere², M. Kuball¹

¹Center for Device Thermography and Reliability, University of Bristol, UK

²Inter-University Micro-Electronics Centre, Belgium

- 11.15-11.30:** *Temperature dependence leakage currents in AlGaIn/GaN high electron mobility transistors*
J. S. Cheong, K. B. Lee, Z. H. Zaidi, P. Li, H. Qian, S. Jiang, and P. A. Houston
Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield S1 3JD, UK
- 11.30-11.45:** *“Kink” in AlGaIn/GaN-HEMTs: Floating Buffer Model*
Manikant¹, Michael J Uren¹, Trevor Martin², Serge Karboyan¹ and Martin Kuball¹
¹Centre for Device Thermography and Reliability School of Physics, University of Bristol, U.K
²IQE Europe, St Mellons, Cardiff, U.K.
- 11.45-12.00:** *Field Plate Design in All-GaN Integrated Cascode Configurations*
S. Jiang¹, K. B. Lee¹, I. Guiney², Z. H. Zaidi¹, J. S. Cheong¹, P. Li¹, H. Qian¹, D. J. Wallis^{2,5}, C. J. Humphreys², A. J. Forsyth³, M. J. Uren⁴, M. Kuball⁴ and P. A. Houston¹
¹Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, S1 3JD Sheffield, UK
²Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, CB3 0FS Cambridge, UK
³School of Electrical and Electronic Engineering, University of Manchester, M13 9PL, Manchester, UK
⁴H.H. Wills Physics Laboratory, Tyndall Avenue, Bristol BS8 1TL, UK
⁵Centre for High Frequency Engineering, University of Cardiff, 5 The Parade, Newport Road, Cardiff, CF24 3AA
- 12.00-12.15:** *Aluminium doped Ga₂O₃ on GaN for HEMT technology*
Leanne Jones¹, James T. Gibbon², Joseph Roberts³, Paul R. Chalker³, Vinod R. Dhanak², Ivona Z. Mitrovic¹
¹University of Liverpool, Department of Electrical Engineering & Electronics, Liverpool L69 3GJ, UK
²University of Liverpool, Dept. of Physics & Stephenson Institute for Renewable Energy, Liverpool L69 7ZF, UK
³University of Liverpool, Department of Engineering, Brownlow Hill, Liverpool L69 3GH, UK
- 12.15-12.30:** *Characterization of AlGaIn/GaN HFETs Knee Walkout under RF Excitation*
H. Hirshy, M. A. Casbon, and P.J. Tasker
Centre of High Frequency Engineering, School of Engineering, Cardiff University, Cardiff CF24 3QR, UK
- 12.30-12.45:** *Monolithically Integrated GaN High-Frequency Surface Acoustic Wave (SAW) Filters for Future 5G Networks*
Krishna C. Balram and Martin J. Cryan
Department of Electrical and Electronic Engineering, University of Bristol
- 12.45-14.15: Lunch and Poster Session**

14.15-16.00: Session 6 - Devices and systems

14.15-14.30: *Video-Rate 3D Imaging Using LED Luminaires*

Jonathan J.D. McKendry¹, Johannes Herrnsdorf¹, Mark Stonehouse¹, Laurence Broadbent², Glynn C. Wright², Martin D. Dawson¹ and Michael J. Strain¹

¹Institute of Photonics, Department of Physics, University of Strathclyde, Glasgow, G1 1RD

²Aralia Systems, Bristol Robotics Laboratory, Bristol BS16 1QY

14.30-14.45: *GaN-on-Silicon Microcantilevers for Sensing Applications*

A.Qamar¹, J. R. Pugh², J. Vicary⁵, F. Scarpa³, T. Wang⁴, T. Dinh¹, H-P. Phan¹, D. V. Dao¹, K. Balram² and M. J. Cryan²

¹Queensland Micro- and Nanotechnology Centre, Griffith University, Queensland, Australia

²Department of Electrical and Electronic Engineering, University of Bristol, UK

³Aerospace Engineering, Bristol

⁴Electrical Engineering, Sheffield, UK

⁵Nunano, Bristol, UK

14.45-15.00: *Few-photon visible light communications using nitride LEDs*

Alexander D. Griffiths¹, Johannes Herrnsdorf¹, Robert Henderson², Michael J. Strain¹, and Martin D. Dawson¹

¹Institute of Photonics, University of Strathclyde, Glasgow

²CMOS Sensors & Systems Group, University of Edinburgh, Edinburgh

15.00-15.15: *A highly efficient photoelectrode using micro-stripped GaN on Si*

Z. A. Syed, Y. Hou, X. Yu, S. Shen, M. Athanasiou, J. Bai and T. Wang

Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, S1 3JD

15.15-15.30: *Design, performance and application of GaN-based micro-LED arrays with individually addressable cathodes*

Enyuan Xie,¹ Mark Stonehouse,¹ Ricardo Ferreira,¹ Jonathan J. D.

McKendry,¹ Johannes Herrnsdorf,¹ Xiangyu He,¹ Sujan Rajbhandari,²

Hyunchae Chun,² Aravind V. N. Jalajakumari,³ Oscar Almer,³ Grahame

Faulkner,² Ian M. Watson,¹ Erdan Gu,¹ Robert Henderson,³ Dominic

O'Brien,² Martin D. Dawson¹

¹Institute of Photonics, Department of Physics, University of Strathclyde, Glasgow, G1 1RD, UK

²Department of Engineering Science, University of Oxford, Oxford, OX1 3PJ, UK

³CMOS Sensors and Systems Group, University of Edinburgh, Edinburgh, EH9 3JL, UK

15.30-16.00: Tea

16.00–17.00: Session 7 – Materials Characterisation

16.00-16.15: *Optical and compositional study of InAlGaN layers*

Gunnar Kusch¹; Johannes Enslin²; Lucia Spasevski¹, Tolga Teke²; Christoph Reich²; Bettina Neuschulz²; Tim Wernicke²; Michael Kneissl²; Robert W. Martin¹

¹Department of Physics, SUPA, University of Strathclyde, 107 Rottenrow East, Glasgow G4 0NG, United Kingdom

²Technische Universität Berlin, Institute of Solid State Physics, Hardenbergstr. 36, 10623, Berlin, Germany

16.15-16.30: *Composition-dependence of carrier localisation at dislocations in InGaN*

F.C-P. Massabuau¹, M.K. Horton², E. Pearce¹, P. Chen¹, M.S. Zielinski³, M.J. Kappers¹, M.A. Moram⁴, C.J. Humphreys¹, P. Dawson⁵, R.A. Oliver¹

¹Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK

²Materials Science and Engineering, University of California Berkeley, Berkeley, US

³Attolight AG, EPFL Innovation Park, Lausanne, Switzerland

⁴Department of Materials, Imperial College London, London, UK

⁵School of Physics and Astronomy, Photon Science Institute, University of Manchester, Manchester, UK

16.30-16.45: *Study of a strain evolution during an overgrowth process of (11-20) non-polar GaN on patterned templates on sapphire*

L. Jiu, Y. Gong, and T. Wang

Department of Electronic and Electrical Engineering, University of Sheffield

16.45-17.00: *Behaviour of Nitride threading dislocations contrast in the SEM*

Elena Pascal, Gunnar Kusch, Ben Hourahine, Gunasekar Naresh-Kumar, Carol Trager-Cowan

SUPA, Department of Physics, University of Strathclyde, Glasgow

17.00-17.05: Concluding remarks and prize-giving

List of Posters

1. Properties of Indium-free Transparent Ohmic Contacts to N-polar n-type GaN

M. A. Hopkins^a, S. Thornley^b, J. Dutson^b, I. Marozau^c, G. Christmann^c, K. Vaideeswaran^c, M. Dadras^c, O. Sereda^c, S. Nicolay^c, J. Niemela^d, M. Creatore^d, J. Pilkington^e, K. Stribley^c, D.W.E. Allsopp^a

^aDepartment of Electrical and Electronic Engineering, University of Bath, Bath, BA2 7AY, UK

^bPlasma Quest Ltd, Osbourne Way, Hook, Hampshire, RG27 9UT, UK

^cCSEM, Rue Jaquet-Droz 1, 2002 Neuchatel, Switzerland

^dDepartment of Applied Physics, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands

^ePlessey Semiconductors Ltd., Tamerton Road, Roborough, Plymouth, PL6 7BQ, UK

2. *Characterization of top down InAlGaN-based UV-B nanorods*
 Gunnar Kusch¹; Pierre-Marie Coulon²; Pierre Chausse²; Johannes Enslin³; Tim Wernicke³; Paul R. Edwards¹; Michael Kneissl³; Phillip A. Shields²; Robert W. Martin¹
¹Department of Physics, SUPA, University of Strathclyde, 107 Rottenrow East, Glasgow G4 0NG, United Kingdom
²Department of Electronic and Electrical Engineering, University of Bath, Bath BA2 7AY, United Kingdom
³Technische Universität Berlin, Institute of Solid State Physics, Hardenbergstr. 36, Berlin, 10623, Germany

3. *Determining the threading dislocation density of nPSS AlN templates in an environmental scanning electron microscope*
 Gunnar Kusch¹; Elena Pascal¹; Pierre-Marie Coulon²; Pierre Chausse²; Sebastian Walde³; Gunasekar Naresh-Kumar¹; Sylvia Hagedorn³; Phillip A. Shields²; Carol Trager-Cowan¹; Robert W. Martin¹
¹Department of Physics, SUPA, University of Strathclyde, 107 Rottenrow East, Glasgow G4 0NG, United Kingdom
²Department of Electronic and Electrical Engineering, University of Bath, Bath BA2 7AY, United Kingdom
³Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Str. 4, 12489 Berlin, Germany

4. *Photoconductive atomic force microscopy of InGaN*
 T. F. K. Weatherley, M. J. Kappers, F. C-P. Massabuau and R. A. Oliver
 Department of Materials Science & Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge CB3 0FS, UK

5. *Wet etching mechanism of semi-polar (11-22) GaN using hydroxide-based etchant*
 H. Qian¹, K. B. Lee¹, I. Guiney², James Griffiths², Z. H. Zaidi¹, S. Jiang¹, D. J. Wallis^{2,3}, J. S. Cheong¹, P. Li¹, C. J. Humphreys², and P. A. Houston¹
¹Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield S1 3JD, UK
²Department of Material Science and Metallurgy, University of Cambridge, Cambridge CB3 0FS, UK
³Centre for High Frequency Engineering, University of Cardiff, 5 The Parade, Newport Road, Cardiff, CF24 3AA

6. *Band alignment of sputtered Al₂O₃, MgO and ZrO₂ on GaN for MIS-HEMTs*
 S.N. Supardan^a, P. Das^b, A.P. Shaw^a, J.D. Major^c, R. Valizadeh^d, A. Hannah^d, A.K. Chakraborty^e, R. Mahapatra^b, V.R. Dhanak^c, I.Z. Mitrovic^a
^aDept. of Electrical Engineering & Electronics, University of Liverpool, Liverpool L69 3GJ, UK
^bDept. of Electronics & Communication Engineering, National Institute of Technology Durgapur, Durgapur 713209, India
^cDept. of Physics and Stephenson Institute for Renewable Energy, University of Liverpool, Liverpool L69 7ZF, UK
^dASTeC Vacuum Science Group, STFC Daresbury Lab., Cheshire WA4 4AD, UK
^eDept. of Physics, National Institute of Technology Durgapur, Durgapur 713209, India

7. *Design, fabrication and characterisation of dual-colour micro-LED arrays for Visible Light Communication*
José F. C. Carreira, Enyuan Xie, Jonathan J. D. McKendry, Benoit Guilhabert, Erdan Gu, Ian M. Watson, Martin D. Dawson
Institute of Photonics, Department of Physics, University of Strathclyde, Glasgow, G1 1RD, UK
8. *Non-destructive Imaging of Extend Defects in III-nitride Thin film Structures Using Electron Channelling Contrast Imaging*
G. Naresh-Kumar, M. Nouf-Allehiani, D. Thomson, E. Pascal, B. Hourahine and C. Trager-Cowan
Department of Physics, SUPA, University of Strathclyde, Glasgow G4 0NG, UK
9. *GaN-based series micro-light emitting diode arrays for visible light communication*
Xiangyu He,¹ Enyuan Xie,¹ Mohamed Sufyan Islam,² Mark Stonehouse,¹ Stefan Videv,² Jonathan J. D. McKendry,¹ Ian M. Watson,¹ Erdan Gu,¹ Harald Haas,² Martin D. Dawson¹
¹Institute of Photonics, Department of Physics, University of Strathclyde, Glasgow, G1 1RD, UK
²Li-Fi R&D Centre, the University of Edinburgh, Institute for Digital Communications, King's Buildings, Mayfield Road, Edinburgh EH9 3JL, UK
10. *Photoluminescence Spectroscopy of Green InGaN/GaN Quantum Well Structures with a Varying Number of Quantum Wells*
L. Jim¹, P. W. Mitchell¹, P. Dawson¹, M. J. Kappers², C. J. Humphreys², R. A. Oliver², D. J. Binks¹
¹School of Physics and Astronomy & Photon Science Institute, The University of Manchester, Manchester M13 9PL, UK
²Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge CB3 0FS, UK
11. *Polarised Photoluminescence of Zincblende InGaN/GaN Quantum Wells*
S. A. Church¹, P. W. Mitchell¹, M. J. Kappers², L. Y. Lee², F. Massabuau², S. L. Sahonta², D. Nilsson³, L. J. Shaw³, D. J. Wallis^{2,4}, C. J. Humphreys², R. A. Oliver², D. J. Binks¹ and P. Dawson¹
¹Photon Science Institute & School of Physics and Astronomy, University of Manchester.
²Department of Materials Science & Metallurgy, University of Cambridge.
³Anvil Semiconductors Ltd, Future Business Centre, King's Hedges Road, Cambridge.
⁴Centre for High Frequency Engineering, University of Cardiff, 5 The Parade, Newport Road, Cardiff, CF24 3AA
12. *GPU Accelerated Monte Carlo Simulations of GaN*
Lee Smith¹, Daniel R. Naylor², Warren Viant¹, Angela Dyson²
¹University of Hull
²Newcastle University
13. *Nano-engineering of III-Nitride materials*
P.M. Coulon¹, P. Chausse¹, P.A. Shields¹

14. *Thermal Properties of Diamond Thin Film Heat Spreaders Grown on GaN HEMTs*
Yan Zhou¹, James Pomeroy¹, Rajesh Ramaneti^{2,3}, Svetlana Korneychuk⁴, Joff Derluyn⁵, Johan Verbeeck⁴, Ken Haenen^{2,3}, and Martin Kuball¹

¹Center for Device Thermography and Reliability (CDTR), H. H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, United Kingdom.

²Institute for Materials Research (IMO), Hasselt University, Wetenschapspark 1, 3590 Diepenbeek, Belgium.

³IMOMECA, IMEC vzw, Wetenschapspark 1, 3590 Diepenbeek, Belgium.

⁴Electron Microscopy for Material Science (EMAT), University of Antwerp, Groenenborgerlaan 171, 2020 Antwerp, Belgium

⁵EpiGaN NV, 3500 Hasselt, Belgium.

Posters to be confirmed:

15. *Carrier transport in the multi-quantum well region of c-plane InGaN/GaN light emitting diodes*

D.W.E. Allsopp and M.A. Hopkins

Dept. of Electronic and Electrical Engineering, University of Bath, UK

16. *Investigation of Defects Introduced into GaN Schottky Diodes by Sputter Deposition of Contacts*

S. Hammersley¹, V. Markevich¹, A. Peaker¹, I. Crowe¹, T. Martin², M.P. Halsall¹

¹Department of Electronic and Electrical Engineering, University of Manchester, Manchester, M13 9PL

²IQE, Pascal close, Cardiff, CF3 0LW

17. *In-situ Auger spectroscopy analysis of an atomic layer etching process for GaN/AlGaIn-based power device fabrication*

Xu Li¹, Sung-Jin Cho¹, Konstantinos Floros¹, Dilini Hemakumara¹, Haiping Zhou¹, Ivor Guiney², David Moran¹, Colin Humphreys² and Iain G Thayne¹

Directions to meeting venue

The meeting will be held in the Renold Building on the Sackville Street area of the campus (UMIST for those who remember) that is indicated by the flag symbol on map 1.

For those arriving by train at Piccadilly Station the Sackville Street area of the campus is within five minutes walk. *Do not leave the station via the main exit, which will send you in the wrong direction.* Instead, leave the station via the exit to the taxi rank/Metrolink, go down two escalators, cross London Road (A6) to the Bulls Head pub, and down South Pump Street followed by Echo Street. Then turn right and go past the Barnes Wallis Building to the Renold Building.

For those travelling by car, parking is available in the Charles Street car park - this is indicated by *the star* on map 1. The cost is £10 per day.

See <http://www.estates.manchester.ac.uk/services/operationalservices/carparking/>

Accommodation

The locations of the suggested accommodation are shown on map 1.

Conference Dinner

The dinner will be held from 7.15 pm in the Manchester Museum which is a 17 minute walk from the conference venue see map 2. The easiest route to the Museum is to go down Charles Street to Oxford Road and then walk down Oxford Road to the museum.

Look for the ‘Manchester Museum’ sign (see below left) and go through the arch unto Coupland Street (see below right):



Immediately on your left you will see the entrance to the Living Fossils Gallery, where the drinks reception will be held (see below):



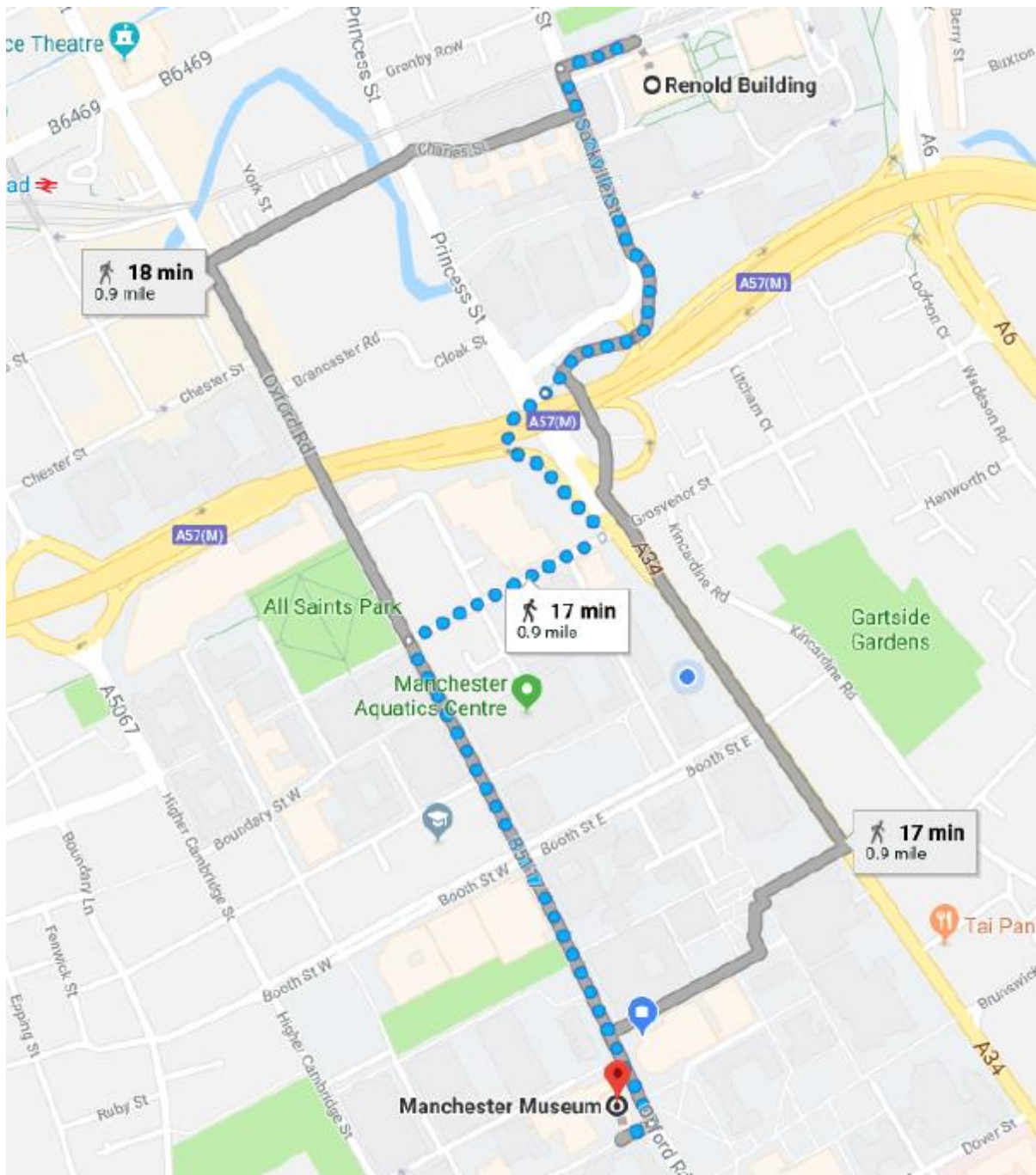
After dinner venues you may like to consider are the Sandbar on Grosvenor Street a popular venue for students who will still be on vacation with good choice of beer, the Lass O Gowrie on Charles Street, nice pub with good beers, Bulls Head on London Road good beers and traditionally the “UMIST pub” (see Map 3) and the Kro Bar on Oxford Road (opposite the Museum) “trendy” student pub with good choice of beers.

Map 1 - Hotels

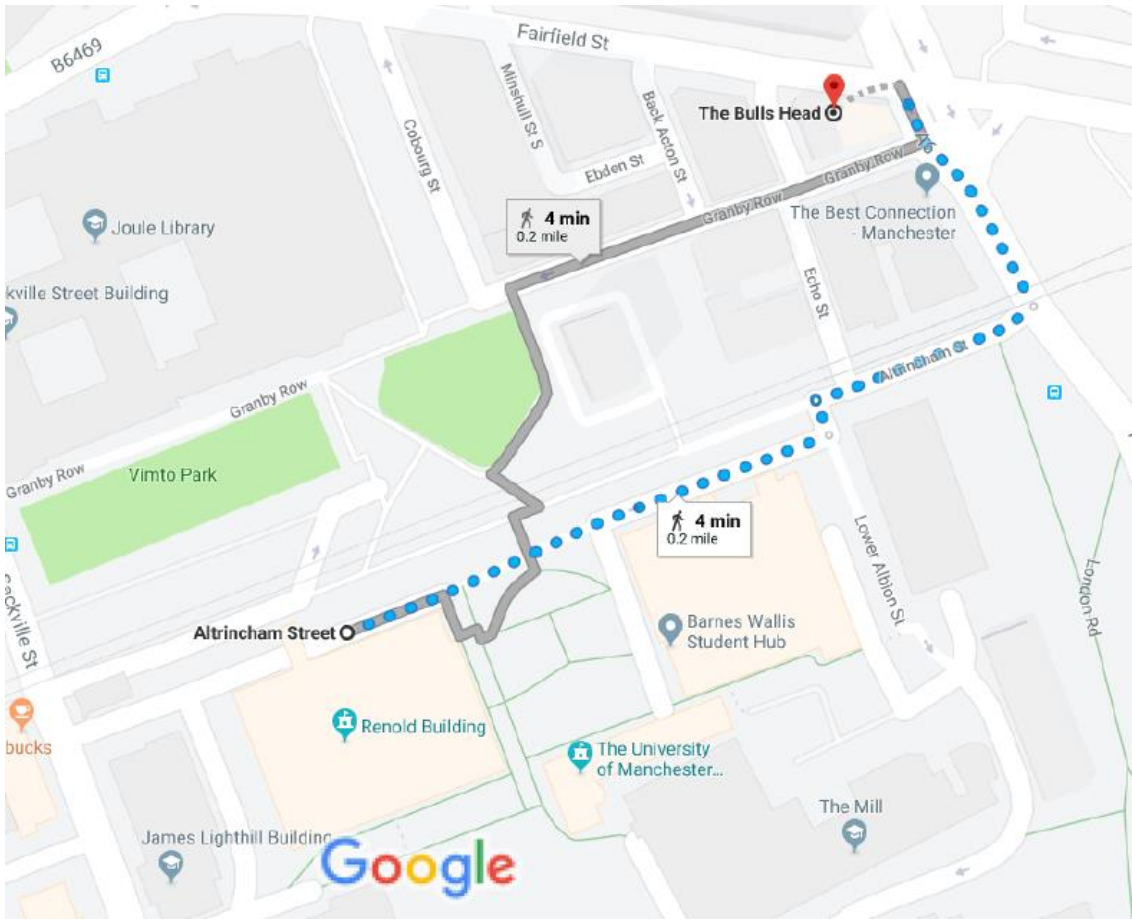
- 1 Holiday Inn Express Manchester Oxford Road
- 2 Ibis budget Manchester Pollard Street
- 3 Ibis Hotel Manchester - Portland Street Hotel
- 4 Ibis Hotel Manchester - Princess Street
- 5 Ibis Styles Manchester Portland Street Hotel
- 6 Pendulum Hotel
- 7 The Principal Manchester
- Meeting venue, Renold Building 
- Charles Street Car Park 



Map 2 – Conference dinner venue



Map 3 – A ‘Manchester Local’ Pub



Information for Presenters **(Campus Venues)**

The Conference & Venues department looks forward to welcoming you to The University of Manchester. We hope the following information is helpful to you in preparing your presentation:-

Standard equipment in all of our venues

Data projectors and speakers are included in all meeting rooms, your conference organiser will be able to confirm what additional equipment has been arranged.

Presentation Remotes (Clickers)

Please note that these devices are not provided as standard at our venues. If you require a remote clicker then please advise your conference organiser prior to arrival so that this can be arranged. If you are bringing your own clicker please note that if 'driver software' needs to be installed on our machines then this may not be possible at short notice.

Using your own laptop or Mac to connect to our projectors

Please note that all of our venues support VGA connections whilst some of our rooms that have been recently upgraded to also support a HDMI connection. If your device does not have a VGA connection then please ensure that you bring the relevant adaptor with you to facilitate its use.

Computers supplied in our venues

All our computers have a Windows 7 operating system along with Microsoft Office Professional Plus 2010. Please note that preparing your presentation in a newer version of Microsoft Office may cause compatibility issues when it comes to uploading your presentation on to our PC's. We would recommend that your presentation is compatible with Microsoft Office 2010.

All computers have wired data connections for access to the Internet etc