MONDAY 2\textsuperscript{nd} April 2012

1800 Onwards REGISTRATION: Aberdare Hall

1900 Onwards DINNER: Aberdare Hall

TUESDAY 3\textsuperscript{rd} April 2012: Redwood Building, Cardiff University

0900 Session 1: Photodiodes

1. AllnP PHOTODIODES FOR BLUE-GREEN WAVELENGTHS
   JSL Ong, JS Ng, AB Krysa and JPR David
   Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK

2. ABSORPTION CHARACTERISTICS OF GaAs\textsubscript{1-x}Bi\textsubscript{x}/GaAs DIODES IN THE NEAR-INFRARED
   CJ Hunter\textsuperscript{1}, F Bastiman\textsuperscript{1}, AR Mohmad\textsuperscript{1,2}, R Richards\textsuperscript{1}, JS Ng\textsuperscript{1}, SJ Sweeney\textsuperscript{3}, and JPR David\textsuperscript{1}
   \textsuperscript{1}Department of Electronic and Electrical Engineering, University of Sheffield, Sir Frederick Mappin Building, Mappin Street, Sheffield S1 3JD, UK
   \textsuperscript{2}Institute of Microengineering and Nanoelectronics, Universiti Kebangsaan Malaysia (UKM), 43000 Bangi, Selangor, Malaysia
   \textsuperscript{3}Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey GU2 7XH, UK
3. TEMPERATURE DEPENDENCE OF GAIN AND EXCESS NOISE IN InAs ELECTRON AVALANCHE PHOTODIODES
   PJ Ker, JPR David and CH Tan
   Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK

4. EFFECTS OF RAPID THERMAL ANNEALING ON GaAsBi ALLOYS
   AR Mohmad, F Bastiman, CJ Hunter, RD Richards, SJ Sweeney and JS Ng
   1Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, S1 3JD, UK
   2Institute of Microengineering and Nanoelectronics, National University of Malaysia (UKM), 43000 Bangi, Selangor, Malaysia
   3Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey, GU2 7XH, UK

5. PLANAR InAs PHOTODIODES FABRICATED USING He Ion IMPLANTATION
   I Sandall, C Hing Tan, A Smith and R Gwilliam
   1Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK
   2Ion Beam Centre, University of Surrey, Guildford, Surrey, GU2 7XH, UK

6. EXCESS NOISE CHARACTERISTICS OF THIN AIAsSb APDs
   J Xie, S Xie, RC Tozer and CH Tan
   Department of Electronic and Electrical Engineering, University of Sheffield, S1 3JD, Sheffield, UK

1030 COFFEE

1100 Session 2: Functional Devices

7. ORGANIC SEMICONDUCTOR LASERS FOR SENSING APPLICATIONS
   S Klinkhammer, C Vannahme, N Heussner, T Mappes and U Lemmer
   a Light Technology Institute (LTI), Karlsruhe Institute of Technology
   b Center for Functional Nanostructures (CFN), Karlsruhe Institute of Technology
   c Institute of Microstructure Technology (IMT), Karlsruhe Institute of Technology, 76128 Karlsruhe, Germany

8. CONTINUOUSLY TUNABLE ORGANIC SEMICONDUCTOR LASERS
   S Klinkhammer, X Liu, T Woggon, C Vannahme, T Mappes and U Lemmer
   a Light Technology Institute (LTI), Karlsruhe Institute of Technology
   b Center for Functional Nanostructures (CFN), Karlsruhe Institute of Technology
   c Institute of Microstructure Technology (IMT), Karlsruhe Institute of Technology, 76128 Karlsruhe, Germany
9. INVESTIGATING THE CAUSE OF EFFICIENCY DROOP IN BLUE-GREEN InGaN LEDs
   BG Crutchley, IP Marko and SJ Sweeney
   Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey, GU2 7XH, UK

10. DEVELOPMENT OF HIGH-PERFORMANCE AND LOW-VOLTAGE AMORPHOUS/MICROCRYSTALLINE TANDEM Si THIN-FILM SOLAR MODULES
    Chin-Yi Tsai, Department of Applied Physics, National University of Kaohsiung, Kaohsiung 811, Taiwan
    Chin-Yao Tsai, Auria Solar, Da-Ye 1st Rd 9, Sinshih, Tainan 74146, Taiwan

11. RADIATION HARDNESS OF InAs QUANTUM DOT LASER MATERIAL
    I O’Driscoll¹, P Blood¹, PM Smowton¹, A Sobiesierski¹ and R Gwilliam²
    ¹ School of Physics and Astronomy, Cardiff University, The Parade, Cardiff, CF24 3AA, UK
    ² ATI, FEPS, University of Surrey, Guildford, Surrey, GU2 7XH, UK

1230 LUNCH

1400 Session 3: QDS

12. ROLE OF CARRIER LIFETIMES FOR OPTICAL AND ELECTRICAL MODULATION PROPERTIES OF QUANTUM-DOT LASERS
    K Lüdge, B Lingnau, J Pausch, C Otto and E Schöll, Institut für Theoretische Physik, Technische Universität Berlin, 10623 Berlin, Germany

13. MEASUREMENT OF CARRIER TEMPERATURE IN InAs QUANTUM DOTS
    M Hutchings, I O’Driscoll, PM Smowton and P Blood, School of Physics and Astronomy, Cardiff University, Queens Buildings, The Parade, Cardiff, CF24 3AA, UK

14. TEMPERATURE DEPENDENCE OF λ IN InP QUANTUM DOT LASERS
    S Shutts, SN Elliott and PM Smowton, School of Physics and Astronomy, Cardiff University, The Parade, Cardiff, CF24 3AA, UK
    AB Krysa, EPSRC National Centre for III-V Technologies, University of Sheffield, Sheffield, S1 3JD, UK

16. EFFECTS OF STRAIN IN InP/GaInP QUANTUM DOT LASERS
    SN Elliott⁵, PM Smowton⁵ and AB Krysa⁶
    ⁵ School of Physics and Astronomy, Cardiff University, Cardiff, CF24 3AA, UK
    ⁶ EPSRC National Centre for III-V Technologies, University of Sheffield, Sheffield, S1 3JD, UK
17. FAR-FIELD DIVERGENCE ON InP QUANTUM DOT LASERS
M Kasim¹, PM Smowton¹, SN Elliott¹ and AB Krysa²
¹ School of Physics and Astronomy, Cardiff University, Cardiff, CF24 3AA, UK
² EPSRC National Centre for III-V Technologies, University of Sheffield, Sheffield, S1 3JD, UK

1530 TEA

1600  Session 4: Dynamics

18. MODULATION RESPONSE OF SEMICONDUCTOR QUANTUM DOT-LASERS
C Wang¹, F Grillot¹,² and J Even¹
¹ Université Européenne de Bretagne, INSA, CNRS, FOTON, 20 avenue des buttes de Coesmes, 35708 Rennes Cedex 7, France
² Telecom ParisTech, Ecole Nationale Supérieure des Télécommunications, CNRS LTCI, 46 rue Barrault, 75013 Paris, France

19. COMPARISON OF BANDWIDTH-ENHANCED CHAOS IN VERTICAL-CAVITY SURFACE-EMITTING LASERS WITH OPTICAL FEEDBACK AND INJECTION
Y Hong, PS Spencer and KA Shore, School of Electronic Engineering, Bangor University, Bangor, Gwynedd, LL57 1UT, UK

20. POLARIZATION CHARACTERISTICS OF VCSELS WITH CIRCULARLY POLARIZED OPTICAL FEEDBACK
AA Qader, Y Hong and KA Shore, Bangor University, School of Electronic Engineering, Dean Street, Bangor, Gwynedd, LL57 1UT, UK

21. MODELING INJECTION-LOCKED QUANTUM NANOSTRUCTURE SEMICONDUCTOR LASERS FOR ULTRA-BROADBAND APPLICATIONS
F Grillot¹,² and P Gallion²
¹ Université Européenne de Bretagne, INSA, CNRS FOTON, 20 Avenue des Buttes de Coesmes, 35708 Rennes Cedex 7, France
² Telecom ParisTech, Ecole National Supérieure des Télécommunications, CNRS LTCI, 75634 Paris Cedex, France

22. ENHANCED TEMPERATURE PERFORMANCE OF A QUANTUM DOT NANOSTRUCTURE MODE LOCKED LASER OPERATING UNDER EXTERNAL CONTROL
R Raghunathan¹, F Grillot²,³, MT Crowley¹, V Kovanis⁴, NG Usechak⁴ and LF Lester¹
¹ Center for High Technology Materials, University of New Mexico, 1313 Goddard SE, Albuquerque, NM 87106, USA
² Université Européenne de Bretagne, INSA, FOTON, 20 Avenue des Buttes de Coesmes, 35708 Rennes Cedex 7, France
³ Telecom ParisTech, Ecole National Supérieure des Télécommunications, CNRS LTCI, 75634 Paris Cedex, France
⁴ US Air Force Research Laboratory, 2241 Avionics Circle, Wright-Patterson AFB, Dayton, OH 45433 USA
23. OPTIMAL OPERATING CONDITIONS FOR OPTICAL CHAOS COMMUNICATION SYSTEMS USING EXTERNAL CAVITY SEMICONDUCTOR LASERS
S Priyadarshi, I Pierce, Y Hong and KA Shore
Bangor University, School of Electronic Engineering, Dean Street, Bangor, Gwynedd, LL57 1UT, UK

24. A COMBINATION SCHEME OF CPWPM AND BPSK FOR DIGITAL COMMUNICATION
NX Quyen, V Van Yem and TM Hoang
School of Electronics and Telecommunications, Hanoi University of Science and Technology, Hanoi, Vietnam

1900 40TH ANNIVERSARY DRINKS RECEPTION

2000 CONFERENCE DINNER

WEDNESDAY 4th April 2012

0900 Session 5: Integration and Applications

25. MULTIMODE TRAVELING-WAVE MODEL FOR SEMICONDUCTOR RING LASERS
N Zhang, X Cai and S Yu
Photonic Group, Merchant Ventures School of Engineering, University of Bristol, UK

26. LASING CONDITION IN CYLINDRICAL SEMICONDUCTOR NANO-LASERS
ZA Sattar and KA Shore
Bangor University, School of Electronic Engineering, Dean Street, Bangor, Gwynedd, LL57 1UT, UK

27. METAMATERIALS RING RESONATORS FOR OPTICAL SENSING APPLICATIONS
N Abujnah1 and R Letizia2
1 Faculty of Advanced Technology, Univ. of Glamorgan, Pontypridd CF37 1DL, UK
2 Engineering Department, Lancaster University, LA1 4YR, UK

28. DEVELOPMENT OF HIGH EFFICIENCY LASER POWER CONVERTORS FOR OPTICAL POWER TRANSFER APPLICATIONS
J Mukherjee, SD Jarvis and SJ Sweeney, Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey, GU2 7XH, UK
M Perren, EADS ASTRIUM, 6 rue Laurent Pichat, 75016 Paris, France
29. THE ROLE OF SILICON SURFACE ORIENTATION ON THE PERFORMANCE OF Ga(NAsP)/(Bga)(AsP) QW LASERS ON (001) Si
N Hossain, G Read an SJ Sweeney, Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey, GU2 7XH, UK
S Liebich, M Zimprich, P Ludewig, K Volz, B Kunert and W Stolz, Material Sciences Center and Faculty of Physics, Philipps-University, 35032 Marburg, Germany
*NasP III/V GmbH, Am Knechtacker 19, 35041 Marburg, Germany

30. $B_xGa_{1-x}P$: A NOVEL STRAIN COMPENSATING LAYER FOR LATTICE MATCHED MONOLITHIC INTEGRATION OF LASERS ON SILICON
N Hossain, TJ Hosea* and SJ Sweeney, Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey, GU2 7XH, UK
*Ibnu Sina Institute for Fundamental Science Studies, Universiti Teknologi Malaysia, Malaysia
S Liebich, M Zimprich, P Ludewig, K Volz, B Kunert* and W Stolz, Material Sciences Center and Faculty of Physics, Philipps-University, 35032 Marburg, Germany
*NasP III/V GmbH, Am Knechtacker 19, 35041 Marburg, Germany

1030 COFFEE

1100 Session 6: MIR/THz

31. MID-INFRARED SPECTROSCOPY OF SILICON DOPED WITH HELIUM-LIKE SULPHUR DOUBLE DONORS
SA Lynch1, YA Astrov2, VB Shuman2, LM Portsel2 and AN Lodygin2
1 School of Physics and Astronomy, Cardiff University, CF24 3AA, UK
2 Ioffe Physico-Technical Institute, Politekhnicheskaya 26, St Petersburg, Russia

32. COHERENT QUANTUM CONTROL OF HYDROGEN-LIKE PHOSPHORUS DONORS IN SILICON USING THz PULSES
SA Lynch1, PT Greenland2, AFG van der Meer3, BN Murdin4, CR Pidgeon5, B Redlich3, NQ Vinh6 and G Aeppli2
1 School of Physics and Astronomy, Cardiff University, CF24 3AA, UK
2 London Centre for Nanotechnology, University College London, WC1H 0AH, UK
3 FOM Institute for Plasma Physics, Rijnhuizen, PO Box 1207, NL-3430 BE, Nieuwegein, The Netherlands
4 ATI, University of Surrey, Guildford, Surrey, GU2 7XH, UK
5 Heriot-Watt University, Department of Physics, Edinburgh, EH14 4AS, UK
6 UC Santa Barbara, Institute for Terahertz Science and Technology, Santa Barbara CA, 93106-4170, USA
33. InGaBiAs/InP SEMICONDUCTORS FOR MID-INFRARED APPLICATIONS
IP Marko, K Hild, Z Batool, S Jin, N Hossain, TJC Hosea* and SJ Sweeney
Advanced Technology Institute and Department of Physics, University of Surrey,
Guildford, Surrey, GU2 7XH, UK
*Ibnu Sina Institute, Universiti Teknologi Malaysia, Johor Bahru, Malaysia
JP Petropoulos, Y Zhong, PB Dongmo and JMO Zide
Materials Science and Engineering, University of Delaware, Newark, Delaware
19716, USA

34. GaAs-BASED MONOLITHIC HIGH CONTRAST GRATINGS FOR MID-
INFRARED VCSELS
Y Laaroussi¹, O Gauthier-Lafaye¹, T Taliercio², L Cerutti², C Chevallier³, N
Fressengeas, F Genty³, G Almuneau¹
¹CNRS; LAAS; 7 avenue du colonel Roche, Université de Toulouse; UPS, INSA,
ISEA; LAAS; F-31077 Toulouse, France
²Institut d’Electronique du Sud, Université Montpellier II, 34095 Montpellier, France
³SUPELEC, 2 rue Edouard Belin, Metz, France

35. TEMPERATURE DEPENDENT BLUE-SHIFT IN MID-IR QUANTUM DOTS
M Lewis¹, J Hosea¹², X Tang³ and SJ Sweeney¹
¹Advanced Technology Institute and Department of Physics, University of Surrey,
Guildford, Surrey, GU2 7XH, UK
²Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia
³Nanyang Technological University, 50 Nanyang Avenue, Singapore, 639798

36. TEMPERATURE AND PRESSURE DEPENDENT PERFORMANCE OF λ ~ 3.6
µm InGaAs/AlAsSb QUANTUM CASCADE LASERS
A Aldukhayel¹, SR Jin¹, I Marko¹, SY Zhang², DG Revin³, JW Cockburn³ and
SJ Sweeney¹
¹Advanced Technology Institute and Department of Physics, University of Surrey,
Guildford, Surrey, GU2 7XH
²EPSRC National Centre for III-V Technologies, University of Sheffield, S1 3JD
³Department of Physics and Astronomy, University of Sheffield, Sheffield, S3 7RH

1230 LUNCH

* END OF 40th ANNIVERSARY CONFERENCE *