

**International Conference on Extended Defects in Semiconductors  
University of Sussex at Brighton**

**Monday 20<sup>th</sup> September**

**Session 1: Dislocations**

- 9.00** Laurent Pizzagalli  
*Core dislocations in silicon: new aspects from numerical simulations*
- 9.50** Jean-Luc Demenet  
*Effect of electronic doping on the plasticity of homoepitaxied 4H-SiC single crystals*
- 10.10** Nelly Burle  
*Multiple vectors dislocation sources in SiGe/Si studied by X-ray imaging and TEM*

**10.30** COFFEE

**Session 2: Microscopy**

- 11.00** Nigel Browning  
*High spatial and temporal resolution studies of semiconductor systems*
- 12.00** Bernard Pichaud  
*Investigation of non-decorated glide dislocations in silicon by infra-red light scattering tomography*
- 12.20** Yuki Tokumoto  
*Effects of phosphorus doping and annealing on dislocation structure in silicon*
- 12.40** Yutaka Ohno  
*Doping effects on the stacking fault energy in Czochralski-grown silicon*

**13.00** LUNCH

**Session 3: Mechanical Properties**

- 14.00** Johann Michler  
*Sample size dependent brittle-ductile transition in semiconductors in uni-axial micro-compression experiments*
- 14.50** Vassiliki Gountsidou  
*Modeling multilayers composed of inorganic and organic materials via nanoindentation*
- 15.10** Ingmar Ratschinski  
*Indentation-induced dislocations and cracks in (0001) GaN*

**15.30** TEA

**Session 4: Devices**

- 16.00** Oleg Vyvenko  
*Dislocation network in the space charge region of Schottky-diode in silicon: Electrical levels and cathodoluminescence*
- 16.25** Oleg Vyvenko  
*Giant Poole-Frenkel effect for the shallow dislocation-related hole traps in silicon*
- 16.50** Isabella Mica  
*Crystal defects and doping profiles in shallow  $p^+/n$  junctions*
- 17.10** Marek Skowronski  
*Correlation of charge and leakage current induced by threading edge and screw dislocations in 4H-SiC*

**17.30** Posters

**19.30** Dinner

**21.00** Posters

**Tuesday 21<sup>st</sup> September****Session 5: Defects and Diffusion****9.00** Nick Cowern*Defects and diffusion in Ge - a comparison with Si***9.50** Eterpi Kalesaki*Indium adsorption and incorporation on polar AlN***10.10** Amy Gandy*A transmission electron microscopy study of fluorine implantation induced damage in silicon***10.30**

COFFEE

**Session 6: III-N and II-VI****11.00** George Dimitrakopoulos*Interfacial sources of extended defects in nonpolar and semipolar III-nitride heteroepitaxy***12.00** Eugene Yakimov*EBIC investigation of InGaN/GaN multiple quantum well structures irradiated with low energy electrons***12.20** Horst Strunk*PhotoLuminescence from Al<sub>x</sub>In<sub>1-x</sub>N layers doped with Tb<sup>3+</sup> ions***12.40** Toby Young*A qualitative semi-classical treatment of an isolated semi-polar quantum dot***13.00**

LUNCH

**Session 7: Nanostructures and Quantum Dots****14.00** Rob Hull*Use of controlled surface defects to engineer assembly of epitaxial semiconductor nanostructures***14.50** Riccardo Gatti*Simulation of dislocation patterning in epitaxial Ge islands on Si(001)***15.10** George Dimitrakopoulos*Structural characteristics and strain state of semipolar (11-22) GaN quantum dots in AlN matrix***15.30**

TEA

**16.00** Thomas Kehagias*Morphology and interfacial structure of InGaN nanodisks grown in GaN nanorods***16.25** Uschi Bangert*Er-environments in Er-silicon/silica light emitting nanostructures***16.50** Bo Yang*Green's function-based multiscale modeling of lattice defects in Si-Ge multilayer heterostructures***17.10** Francesca Bolioli*Dislocation engineering in SiGe heteroepitaxial film on patterned Si (001) substrates***17.30****Free evening**

**Wednesday 22<sup>nd</sup> September****Session 8: Interfaces and Grain Boundaries 1**

- 9.00** Manfred Reiche  
*Structure and properties of dislocations in interfaces of bonded silicon wafers*
- 9.50** Pirouz Pirouz  
*Deformation twinning in bulk and nanocrystalline silicon*
- 10.10** Edward Steinman  
*Extended defect luminescence of polycrystalline SiC films grown by vapor phase reaction*

**10.30** COFFEE

**Session 9: Optical**

- 11.00** Ichiro Yonenaga  
*The susceptibility of optical properties of GaN and ZnO to fresh dislocations*
- 12.00** Alexey Tereshchenko  
*Radiation properties of dislocations created by plastic deformation of Si under high pressure and low temperature*
- 12.20** Tzanimir Arguirov  
*Room temperature luminescence from germanium*

**12.40** EARLY LUNCH

**13.30** **CONFERENCE OUTING.**  
Arundel Castle, Arundel

**18.00** Reception and special lecture  
Wiston House, Steyning  
(tennis and croquet possible if weather permits)

**20.00** **Dinner, Wiston House**

**22.30** Coaches back to University

**Thursday 23<sup>rd</sup> September****Session 10: Interfaces and Grain Boundaries 2**

**9.00** Jun Chen (Tsukuba)

*Electrical, optical and mechanical properties of GBs in mc-Si*

**9.50** Jany Thibault-Penisson

*Measurement of the strain field induced by a periodic distribution of dislocations superimposed on a  $\Sigma=9$  grain boundary in Si*

**10.10** Jean-François Barbot

*Propagation and interactions of cracks in Si induced by H supply into He-filled cracks*

**10.30**

**COFFEE**

**Session 11: Diamond**

**11.00** Bob Jones

*Point and Extended defects in brown and nano-crystalline diamonds*

**12.00** Iain Godfrey

*Imaging vacancy clusters in natural diamond using aberration corrected high angle annular dark field and bright field scanning transmission electron microscopy*

**12.20** Jacques Rabier

*Dislocation dipole annihilation in diamond and silicon*

**12.40** Nick Davies

*Effect of off-axis growth on dislocations in CVD diamond grown on {001} substrates*

**13.00**

**LUNCH**

**Session 12: Graphite**

**14.00** Bo Yang

*Nanoscale continuum calculation of basal dislocation core structures in graphite*

**14.50** James Boone

*Neutron irradiation induced folds in graphite*

**15.10** Jean-Jo Adjizian

*Extended sulfur defects in graphite – effects on electrical properties and graphitisation*

**15.30**

**TEA**

**Session 13 p.t.o.**

**Session 13: the Jones zone**

- 16.00** Patrick Briddon  
*Developments in the first principles modelling of defects*
- 16.30** Jonathan Goss  
*Self-interstitial precipitates in group-IV materials: the application of high speed DFT simulations*
- 16.50** Alexandra Carvalho  
*Stages of oxygen aggregation in germanium*
- 17.10** Simon Kraeusel/Ben Hourahine  
*Global optimisation of dislocation core structures in InN*
- 17.30** Chris Ewels  
*Progress in nanotube-related extended defects*
- 17.50** Alexander Blumenau  
*Atomistic modelling of dislocations in semiconductors*
- 18.10** Discussion
- 19.30** **Conference dinner**

**Friday 24<sup>th</sup> September****Session 14: III-V Semiconductors**

- 9.00** Michelle Moram  
*Dislocation movement in the III-nitrides*
- 9.50** Darius Chrobak  
*Nanoindentation of semiconductors: experiment and atomistic simulations*
- 10.40** **COFFEE**

**Session 15: Implantation**

- 11.10** Heidi Nordmark  
*H-initiated extended defects from plasma treatment: Comparison between c-Si and mc-Si*
- 12.00** Gabrielle Regula  
*Getter of Au by He-implantation-induced defects in 4H-SiC epitaxial layers*
- 12.20** Lee Chow  
*Microstructure and magnetism of silicon co-implanted with manganese and carbon ions*
- 12.40** *Discussion and Close*
- 13.00** **LUNCH**
- Departure**

