

PROGRAMME
The 64th Diamond Conference
University of Warwick
Monday 8th – Thursday 11th July 2013

Monday 8th July: Registration and Evening Session

1500 Registration, Conference Reception

TUTORIAL

Physics Lecture Theatre

1630 T1 **Theory**

J. P. Goss

School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne,
NE1 7RU, United Kingdom

1800 Dinner, Rootes Restaurant

Physics Lecture Theatre

Chairman: John Field

1920 Welcome and Notices: *Mark Newton*

INVITED LECTURE

Physics Lecture Theatre

1930 I1 **Diamond Electrochemistry and Sensors**

Julie Macpherson

Department of Chemistry, University of Warwick, Coventry CV4 7AL

2030 Physics Drinks Reception

Tuesday 9th July: Morning Session (Physics Lecture Theatre)

INVITED LECTURE

Chairman: Ian Friel

Physics Lecture Theatre

0900 12 **Microwave Plasma Assisted CVD Diamond Synthesis: Reactor Design and Associated Process Methods for Robust, Safe, and Efficient Diamond Synthesis.**

J. Asmussen^{1,2}

¹Michigan State University, Department of Electrical & Computer Engineering, East Lansing, MI 48824

²Fraunhofer USA, Center for Coatings and Laser Applications, East Lansing, MI 48826

SYNTHESIS OF CVD DIAMOND

Physics Lecture Theatre

1000 O1 **On the mechanisms of diamond chemical vapour deposition from microwave activated C/H/N and C/H/O plasmas**

*M. N. R. Ashfold*¹, *M. W. Kelly*¹, *S. Halliwell*¹, *J. Pattle*¹ and *Y. A. Mankelevich*²

¹School of Chemistry, University of Bristol, Bristol BS8 1TS, UK

²Nuclear Physics Institute, Moscow State University, Russia.

1020 O2 **CVD-Diamond-Coated Carbon Nanotube 'Teepees' as Long-Life Field Emitters**

*P. W. May*¹, *Y. Zou*², *S. M. C. Vieira*³, *N. A. Fox*¹ and *M. Z. Othman*¹

¹School of Chemistry, University of Bristol, Bristol BS8 1TS, UK

²School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing 210094, China

³Instituto de Engenharia de Sistemas e Computadores, 1000-029 Lisboa, Portugal

1040 Coffee Break

SPECTROSCOPY AND COLOUR CENTRES

Chairman: Alan Collins

Physics Lecture Theatre

1120 O3 **Is CO₂ in diamond covalently bonded to the lattice?**

*C. D. Latham*¹, *M. I. Heggie*¹, *R. Jones*² and *P. R. Briddon*³

¹Department of Chemistry, University of Surrey, Guildford, GU2 7XH, UK

²Department of Physics, University of Exeter, Exeter, EX4 4QL, UK

³School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK

1140 O4 **Computational determination of oscillator strength for the N₃VH model of the 3107 cm⁻¹ defect and related centres in diamond.**

*J. P. Goss*¹, *P. R. Briddon*¹, *R. Jones*² and *M. J. Rayson*³

¹School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, United Kingdom

²Department of Physics, University of Exeter, Exeter EX4 4QL, United Kingdom

³Department of Mathematics, Lulea University of Technology, Lulea S-97187, Sweden

1200 O5 **Identification of the neutral di-nitrogen-vacancy-hydrogen defect in diamond**

*C. B. Hartland*¹, *B. L. Green*¹, *M. E. Newton*¹, *R. U. A. Khan*² and *B. L. Cann*²

¹Department of Physics, University of Warwick, UK

²DTC Research Centre, De Beers (UK) Ltd

1220 O6 **The N₃ centre revisited.**

*B. Green*¹, *M. E. Newton*¹, *D. Fisher*² and *J. Hansen*³

¹Department of Physics, University of Warwick, UK

²DTC Research Centre, De Beers (UK) Ltd

³Element Six, South Africa

1240 Buffet Lunch, Physics Concourse

Tuesday 9th July: Afternoon Session (Physics Lecture Theatre)

SPECTROSCOPY AND COLOUR CENTRES

Chairman: Jon Goss

Physics Lecture Theatre

- 1400 O7 **Optical characterizations of NV centres by sensitive techniques for the determinations of NV⁰ and NV⁻ ground states**
E. Bourgeois¹, V. Petrakova², J. Sturza³, P. Cigler⁴, M. Ledvina⁴, Ken Haenen^{1,5} and M. Nesladek^{1,5}
¹Institute for Materials Research (IMO), Hasselt university, Belgium.
²Faculty of biomedical engineering, Czech Technical University, Prague.
³Institute of Nuclear Physics, Czech Academy of Sciences, Prague.
⁴Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague.
⁵IMOMECE, IMEC vzw, Belgium.
- 1420 O8 **Theory of diffusion and aggregation of nitrogen in diamond**
R. Jones¹, H. Pinto¹, D. W. Palmer¹, J. P. Goss² and P. R. Briddon²
¹Department of Physics, University of Exeter, Exeter, EX4 4QL.
²School of Electrical, Electronic and Computer Engineering, Newcastle School of Electrical, Electronic and Computer Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU.
- 1440 O9 **Ab-initio characterization of a Ni-related defect in diamond: the W8 center**
Thomas Chanier and Adam Gali
Wigner Research Centre for Physics, Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary.
- 1500 O10 **Microfocus X-ray and PL laser Continuous wave (CW) and Time resolved (TR) fluorescence, analytical and mapping techniques, applied to Diamond**
R. P. Taylor^{1,2}, A. A. Finch¹, J. F. W Mosselmans² and P. D. Quinn²
¹Dept. of Earth Sciences, St Andrews, KY16 9AL, UK.
²Diamond Light Source, Didcot, OX11 0DE, UK.
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Poster Session 1

Chairman: Riz Khan

Physics Concourse

- 1520 Poster Session with afternoon Tea and Coffee
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GRAPHENE AND QUANTUM TECHNOLOGIES

Chairman: Simon Lawson

Physics Lecture Theatre

- 1640 O11 **Heralded entanglement between solid-state qubits separated by 3 meters**
H. Bernien¹, B. Hensen¹, W. Pfaff¹, G. Koolstra¹, M. S. Blok¹, L. Robledo¹, T. H. Taminiau¹, M. Markham¹, D. J. Twitchen², L. Childress³ and R. Hanson¹
¹Kavli Institute of Nanoscience Delft, Delft University of Technology, P.O. Box 5046, 2600 GA Delft, The Netherlands
²Element Six Ltd., Kings Ride Park, Ascot, Berkshire SL5 8BP, United Kingdom
³McGill University Department of Physics, 3600 Rue University, Montreal, QC H3A 2T8, Canada
- 1700 O12 **Quantum optics in the solid state with diamond nanophotonics**
Nathalie P. de Leon^{1,2}, Yiwen Chu¹, Ruffin E. Evans¹, Brendan J. Shields¹, Birgit J. M. Hausmann³, Michael J. Burek³, Hongkun Park^{1,2}, Marko Loncar³, Mikhail D. Lukin¹
¹Harvard University, Department of Physics
²Harvard University, Department of Chemistry and Chemical Biology
³Harvard University, School of Engineering and Applied Sciences
- 1720 O13 **Theoretical modelling of graphene formation on diamond (111) using a High-Temperature sublimation process under various gaseous and doping conditions**
Karin Larsson and Yang Song
Dept. of Chemistry - Ångström Laboratory, Uppsala University, Sweden
- 1740 O14 **Epitaxial graphene on diamond (111) and diamond (001)**
S. P. Cooil¹, G. T. Williams², R. E. Cross¹, S. Evans¹, D. P. Langstaff¹ and D. A. Evans¹
¹Institute of Mathematics and Physics, Aberystwyth University, UK
²Element Six Ltd., Ascot, UK
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- 1900 BBQ
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Wednesday 10th July: Morning Session (Physics Lecture Theatre)

INVITED LECTURE

Physics Lecture Theatre

Chairman: Philip Martineau

0900 13 **The morphology of natural and synthetic diamonds: Remaining challenges**

Emmanuel Fritsch

Institut des Matériaux Jean Rouxel (I.M.N.) Université de Nantes, UMR CNRS 6502 , 2, rue de la Houssinière BP 32229, 44322 NANTES Cedex 3, France.

SYNTHETIC GEM DIAMOND

1000 O15 **Distribution maps of optical defects in gem-quality CVD synthetic diamonds measured by Raman-photoluminescence spectroscopy**

B. Willems, E. Biermans and A. Anthonis

HRD Antwerp - Research, Hoveniersstraat 22, BE 2018, Antwerpen, Belgium

1020 O16 **CVD Synthetic Diamonds from Scio Diamond Technology Corporation**

Ulrika F. S. D'Haenens-Johansson¹, Christopher M. Breeding² and Wuyi Wang¹

¹Gemological Institute of America, New York Laboratory, 580 Fifth Avenue, Suite 200, New York, NY 10036, USA.

²Gemological Institute of America, Carlsbad Laboratory, 5355 Armada Drive, Carlsbad, CA 92008, USA

1040 Coffee Break

SPECTROSCOPY AND X-RAY

Physics Lecture Theatre

Chairman: Andy Bennett

1120 O17 **Electron microscopy and spectroscopy of graphene: atomic-scale landscapes, single atom action and collective electron motion**

U. Bangert¹, W. Pierce¹, D. M. Kepaptsoglou², Q. Ramasse², R. Zan¹, A. Scott³, C. Seabourne³, T. Hardcastle³, C. Boothroyd⁴, J. Amani⁵, and H. Hofsäss⁵

¹School of Materials, The University of Manchester, Manchester M13 9PL, United Kingdom

²SuperSTEM Laboratory, STFC Daresbury Campus, Daresbury WA4 4AD, United Kingdom

³Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Peter Gruenberg Institute Research Centre Juelich, D-52425 Juelich, Germany

⁴Institute for Materials Research, SPEME, University of Leeds, Leeds LS2 9JT, UK

⁵II. Physikalisches Institut, Georg-August-Universität Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen, Germany

1140 O18 **Colour Measurement and Colour Grading of Coloured Diamonds by the Dual Integrating Sphere Spectrometer**

Yan Liu

Liu Research Laboratories, 9824 Rush Street, South El Monte, CA 91733, USA

1200 O19 **Investigation of diamond single crystals for XFEL monochromators**

L. Samoylova¹, S. Rutishauser², C. David², Y. Shvyd'ko³, S. Stoupin³, J. Härtwig⁴, M. Sprung⁵ and H. Sinn¹

¹European XFEL GmbH, Notkestrasse 85, 22607 Hamburg Germany

²Paul Scherrer Institut, 5232 Villigen PSI, Switzerland

³Advanced Photon Source, Argonne National Laboratory, Argonne, Illinois 60439, USA

⁴European Synchrotron Radiation Facility, BP-220, F-38043, France

⁵Deutsches Elektronen-Synchrotron, DESY, Notkestrasse 85, 22607 Hamburg Germany

1220 O20 **High-efficiency, nanofocusing x-ray lenses made from polycrystalline diamond**

O. J. L. Fox^{1,2}, L. Alianelli², I. Pape², P. W. May¹, and K. J. S. Sawhney²

¹School of Chemistry, University of Bristol, Bristol, BS8 1TS, UK.

²Diamond Light Source Ltd., Harwell Science & Innovation Campus, Didcot, Oxfordshire, OX11 0DE, UK

1240 Buffet Lunch, Physics Concourse

Wednesday 10th July: Afternoon Session (Physics Lecture Theatre)

GEOLOGY

Physics Lecture Theatre

Chairman: Thomas Stachel

- 1400 O21 **The origin of colour of C centre containing natural diamonds**
T. Hainschwang¹, E. Fritsch², F. Notari¹, B. Rondeau³, and A. Katrusha⁴
¹GGTL Laboratories - GEMLAB (Liechtenstein)/GemTechLab, Gnetsch 42, 9496 Balzers, Liechtenstein and 2bis route des Jeunes, Geneva, Switzerland
²Université de Nantes – CNRS Institut des Matériaux Jean Rouxel (IMN), UMR 6502, 2 rue de la Houssinière, BP32229, F-44000 Nantes, France.
³Université de Nantes – CNRS Laboratoire de Planétologie et Geodynamique de Nantes (LPGN), UMR 6112, 2 rue de la Houssinière, BP92208, F-44000 Nantes, France
⁴Bakul Institute for Superhard Materials, National Academy of Sciences of Ukraine, Kiev, Ukraine
- 1420 O22 **Quantifying the rate of platelet degradation in natural diamonds**
S. C. Kohn, C. B. Smith, G. P. Bulanova, E. Wibberley and M. J. Walter
School of Earth Sciences, University of Bristol, Wills Memorial Building, Queen's Road, Bristol.
- 1440 O23 **Fluid involvement in the growth of mono crystalline octahedral diamonds**
Y. Weiss^{1,2}, I. Kiflawi^{2†}, N. Davies³, W.L. Griffin⁴ and O. Navon²
¹Lamont-Doherty Earth Observatory, Columbia University, USA,
²The Institute of Earth Sciences, the Hebrew University of Jerusalem, Israel
³DTC Research Centre, Belmont Road, Maidenhead, Berkshire, UK
⁴GEMOC, Macquarie University, NSW, Australia.
[†]Deceased; our good friend Dr. Itzhak Kiflawi died on the 12th of February 2013.
- 1500 O24 **Evidence for deep mantle convection and primordial heterogeneity from nitrogen and carbon stable isotopes in diamond**
Mederic Palot^{1,2}, Pierre Cartigny¹, Jeff. Harris³, Thomas Stachel², and Felix Kaminski⁴
¹IPG-Paris, France
²Canadian Centre for Isotopic Microanalysis, Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, AB, Canada T6G 2E3
³School of Geographical and Earth Sciences, University of Glasgow, G12 8QQ, UK
⁴KM Diamond Exploration Ltd.
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Poster Session 2

Physics Concourse

Chairman: Tim Mollart

1520 Poster Session with afternoon Tea and Coffee

GEOLOGY

Physics Lecture Theatre

Chairman: David Fisher

- 1640 O25 **Diamonds from the Argyle mine (Australia): are they worldwide unique?**
T. Stachel¹, J. W. Harris², L. Hunt¹, and K. Muehlenbachs¹
¹Canadian Centre for Isotopic Microanalysis, Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, AB, Canada T6G 2E3
²School of Geographical and Earth Sciences, University of Glasgow, G12 8QQ, UK
- 1700 O26 **Exploration of PT stability for lonsdaleite, hexagonal diamond.**
Adrian Jones¹, Moreton Moore², David Dobson¹, Robin Wylie¹, Rebecca Southworth¹, Judith Milledge¹, Paul DeCar³ and Fabrizio Nestola⁴
¹Department of Earth Sciences, University College London, Gower Street, London, WC1E 6BT, UK.
²Department of Physics, Royal Holloway, University of London, Egham, Surrey, TW20 0EX
³SRI International, California USA
⁴Università di Padova, Dipartimento di Geoscienze, Padova, Italy
- 1720 O27 **Natural Type Ib diamonds from Dachine (French Guiana): origin and thermal history**
Antony D. Burnham, Simon C. Kohn, Galina P. Bulanova, Chris B. Smith, Mike J. Walter
School of Earth Sciences, University of Bristol, Wills Memorial Building, Queen's Road, Bristol.
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1900 Drinks Reception

1930 Conference Dinner, Chancellor's Suite

Thursday 11th July: Morning Session (Physics Lecture Theatre)

INVITED LECTURE

Physics Lecture Theatre

Chairman: Adrian Wilson

0900 I4 **Polycrystalline Diamond in Oil and Gas Drilling Applications: An Element Six Overview**
Roger Nilen
Element Six Oil & Gas, Global Innovation Centre, Harwell, UK

DEVICES AND APPLICATIONS

Physics Lecture Theatre

1000 O28 **Post synthesis treatments for improved diamond performance**

Richard Bodkin, N. Perkins, H. J Gallon and S. L. Liggins

Element Six, Global Innovation Centre, Harwell, UK

1020 O29 **Charge Transport in Diamond below 77K**

Jan Isberg¹, Markus Gabrysch¹, Johan hammersberg¹, Saman Majidi¹, Kiran Kumar Kovi¹ and Daniel Twitchen².

¹Division for Electricity, Uppsala University, Box 534, S-751 21 Uppsala, SWEDEN

²Element Six Ltd, King's Ride Park, Ascot, Berkshire, SL5 8BP, UK

1040 O30 **Can graphene succeed where diamond has failed?**

Alan T Collins

Physics Department, King's College London, Strand WC2R 2LS

1100 Coffee Break

DEVICES AND APPLICATIONS

Physics Lecture Theatre

Chairman: Mark Newton

1140 O31 **Single crystal CVD diamond and synchrotron X-ray beam monitoring**

J. Morse¹, J. Härtwig¹, M Pomorski², K. Desjardins³ and J. Smedley⁴

¹European Synchrotron Radiation Facility, Grenoble, 38043, France

²Commissariat à l'Energie Atomique et aux Energies Alternatives, Gif-sur-Yvette, 91191, France

³Synchrotron Soleil, Gif-sur-Yvette, 91191, France

⁴Instrumentation Division, Brookhaven National Laboratory, Upton, NY, USA

1200 O32 **Performance of Nd:YVO₄ and Yb:KYW synthetic diamond hybrid structures in a quasi-microchip laser configuration**

Rolf Birch, Vasili Savitski, Elisabeth Fraczek and Alan Kemp

Institute of Photonics, University of Strathclyde, SUPA, 106 Rottenrow, Glasgow, G4 0NW, UK

1220 O33 **In-situ pH Generation using Boron Doped Diamond Electrodes: From Concept to Applications**

Eleni Bitziou¹, Mark E. Newton² and Julie V. Macpherson¹

¹Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

²Department of Physics, University of Warwick, Coventry, CV4 7AL, UK

1240 O34 **High Temperature Electrochemistry**

James Iacobini¹, Mark E. Newton² and Julie V. Macpherson¹

¹Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

²Department of Physics, University of Warwick, Coventry, CV4 7AL, UK

1300 Conference Closing

1315 Lunch, Rootes Restaurant

Posters (Physics Concourse)

Number		Presenting Author
P1	<p>Atomistic modelling of polarisation of nitrogen centres in diamond <i>Mohammed K Atumi, J. P. Goss, Patrick Briddon and Fadi Shrif</i> School of EEE, Merz Court, Newcastle University, NE1 7RU, UK</p>	Mohammed K Atumi
P2	<p>Identifying Diamonds by UV Fluorescence Spectra Measured by the Dual Integrating Sphere Spectrometer under Room Temperature <i>Yan Liu</i> Liu Research Laboratories, 9824 Rush Street, South El Monte, CA 91733, USA</p>	Yan Liu
P3	<p>STED Imaging of Defects in CVD Diamond <i>H. Sinclair¹, R. U. A. Khan², M. O. Lenz¹, C. Dunsby¹, M. A. A. Neil¹ and P. M. W. French¹</i> ¹Photonics Group, Department of Physics, Imperial College London, SW7 2AZ. ²DTC Research Centre, Belmont Road, Berkshire SL6 6JW.</p>	Hugo Sinclair
P4	<p>Hyperspectral optical imaging for light emission and scattering in diamond <i>R. E. Cross, A. G. McGlynn, S. P. Cooil, S. Evans, D. P. Langstaff, M. Gunn, and D. A. Evans</i> Institute of Mathematics and Physics, Aberystwyth University, UK</p>	Rachel Cross
P5	<p>Progress in Diamond-based Microplasma Arrays <i>P. W. May¹, M. D. Bowden², N. A. Fox¹, M. Zeleznik¹, R. Stevens³, S. Mitea² and J. N. Hart¹</i> ¹School of Chemistry, University of Bristol, Bristol BS8 1TS, UK ²Dept of Physics, Open University, Milton Keynes, UK ³Dept of Physics, Nottingham Trent University, Nottingham, UK</p>	Paul May
P6	<p>Neutron irradiation and the production of the negative nitrogen-vacancy centre <i>M. W. Dale, C. Welbourn and M. E. Newton</i> Department of Physics, University of Warwick, Coventry, CV4 7AL</p>	Matthew Dale
P7	<p>Improving the accuracy of quantitative Electron Paramagnetic Resonance <i>B. G. Breeze¹, B. L. Cann², M. W. Dale¹, B. Green¹, C. B. Hartland¹ and M. E. Newton</i> ¹Department of Physics, University of Warwick, Coventry, CV4 7AL ²DTC Research Centre, Belmont Road, Maidenhead, Berkshire, SL6 6JW</p>	Ben Breeze
P8	<p>Diamond Microfluidic Devices for Electrochemical Analysis <i>Jonathan Newland¹, Patrick R. Unwin¹, Mark. E. Newton² and Julie V. Macpherson¹</i> ¹Department of Chemistry, University of Warwick, Coventry, CV4 7AL ²Department of Physics, University of Warwick, Coventry, CV4 7AL</p>	Jonathan Newland
P9	<p>In situ Control of Local pH using a Boron Doped Diamond Ring-Disc Electrode: Optimising Heavy Metal Detection in Neutral Solutions <i>Tania L. Read¹, Eleni Bitziou¹, Maxim B. Joseph¹, Mark E. Newton² and Julie V. Macpherson¹</i> ¹Department of Chemistry, University of Warwick, Coventry, CV4 7AL ²Department of Physics, University of Warwick, Coventry, CV4 7AL</p>	Tania Read
P10	<p>A carbon and nitrogen isotope study of natural mixed crystal habit diamonds <i>R. E. Southworth^{1,2}, D. Howell³, S. Mikhail⁴, A. B. Verchovsky², and A. P. Jones¹</i> ¹Department of Earth Sciences, University College London, Gower Street, London, WC1E 6BT, UK. ²Department of Physical Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. ³CCFS ARC Center of Excellence, and GEMOC, Macquarie University, Sydney, NSW 2109, Australia. ⁴Geophysical Laboratory, Carnegie Institute of Washington, 5251 Broad Branch Road NW, Washington DC, 20015, USA.</p>	Rebecca Southworth

Posters (Physics Concourse)

Number		Presenting Author
P11	<p>EPR studies of the negatively charged NVN defect (H2) <i>B. Green¹, M. E. Newton¹, D. Fisher² and J. Hansen³</i> ¹Department of Physics, University of Warwick, UK ²DTC Research Centre, De Beers (UK) Ltd ³Element Six, South Africa</p>	Mark Newton
P12	<p>Chemical Mechanical Polishing of Nanocrystalline Diamond <i>Evan L. H. Thomas and Oliver A Williams</i> Cardiff School of Physics and Astronomy, Cardiff University, Queens Building, The Parade, Cardiff, CF24 4JX, United Kingdom.</p>	Evan Thomas
P13	<p>Identification of CVD Synthetic Loose and Mounted Diamond in China <i>Song Zhonghua, Shen Meidong, Lu Taijin, Lan Yan and Ke Jie</i> National Gems & Jewelry Technology Administrative Center, National Gemstone Testing Center, 21-22F, C Building, Global Trade Center, 36# North 3rd Ring East Road, Beijing 100013, P.R. China</p>	Song Zhonghua
P14	<p>Point defects: an historical reflection. Some anniversaries and near anniversaries. The diamond anniversary of the first EPR point defect in diamond. <i>J. M. Baker</i> Oxford Physics, Clarendon Laboratory, Parks Road, Oxford, OX1 3PU, UK.</p>	Michael Baker
P15	<p>Diamond oxygen geochemistry <i>Pierre Cartigny</i> IPG-Paris, France</p>	Pierre Cartigny
P16	<p>Calculation of monolayer metal coverage of on the electronic and structural properties of diamond (001) surfaces. <i>Bryan McMahon¹, Amit K. Tiwari¹, J. P. Goss¹, P. R. Briddon¹, Nick G. Wright¹, Alton B. Horsfall¹ and M J Rayson²</i> ¹School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK ²Department of Mathematics, Lulea University of Technology, Lulea S-97187, Sweden</p>	Amit Tiwari
P17	<p>A diamond from the Rand Banket <i>R. E. Southworth, A. P. Jones, A. B. Verchovsky and H. J. Milledge</i> Department of Earth Sciences, University College London</p>	Rebecca Southworth
P18	<p>Study of growth of intrinsic and doped NCD layers on organic based substrates <i>Andrew Taylor¹, Vaclav Petrak¹, Ladislav Fekete¹, Pavel Hubík¹, Jan Mistrík² and Miloš Nesládek³</i> ¹Institute of Physics, ASCR, v. v. i, Prague, Czech Republic ²Departement of Physics, Pardubice University, Czech Republic ³IMOMECH, IMEC, Institute for Materials Research, University Hasselt, Wetenschapspark 1, B3590, Belgium</p>	Andrew Taylor
P19	<p>Etching of diamond and graphite in hydrogen plasmas as an insight into the CVD growth mechanism <i>S. C. Halliwell, P. W. May, N. A. Fox, W. J. Rodgers, J. N. Harvey and J. King</i> School of Chemistry, University of Bristol, Bristol BS8 1TS, UK</p>	Sarah Halliwell
P20	<p>Application of GPU in visualizing diamond inclusions <i>Jayshree Panjekar¹, Rupali Deshpande² and Aatish Panjekar¹</i> ¹PANGEMTECH- Panjekar Gem Research & Tech Institute, 10 Sangeeta Building, Tadiwala Road, Pune 411001, India ²NVIDIA Panchshil TechPark Plot 4 S.No 1678 to 1683 Shivaji Nagar Pune 411001 India</p>	Jayshree Panjekar

Posters (Physics Concourse)

Number		Presenting Author
P21	Preliminary studies on the estimation of remnant pressure on inclusions in Indian diamond using strain birefringence <i>Jayshree Panjekar and Aatish Panjekar</i> PANGEMTECH- Panjekar Gem Research & Tech Institute, 10 Sangeeta Building, Tadiwala Road, Pune 411001, India	Jayshree Panjekar
P22	Thermoluminescence properties of natural and HPHT-treated type IaB gem diamonds <i>Christopher M. Breeding and David Nelson</i> Gemological Institute of America, Carlsbad, CA USA	Mike Breeding