

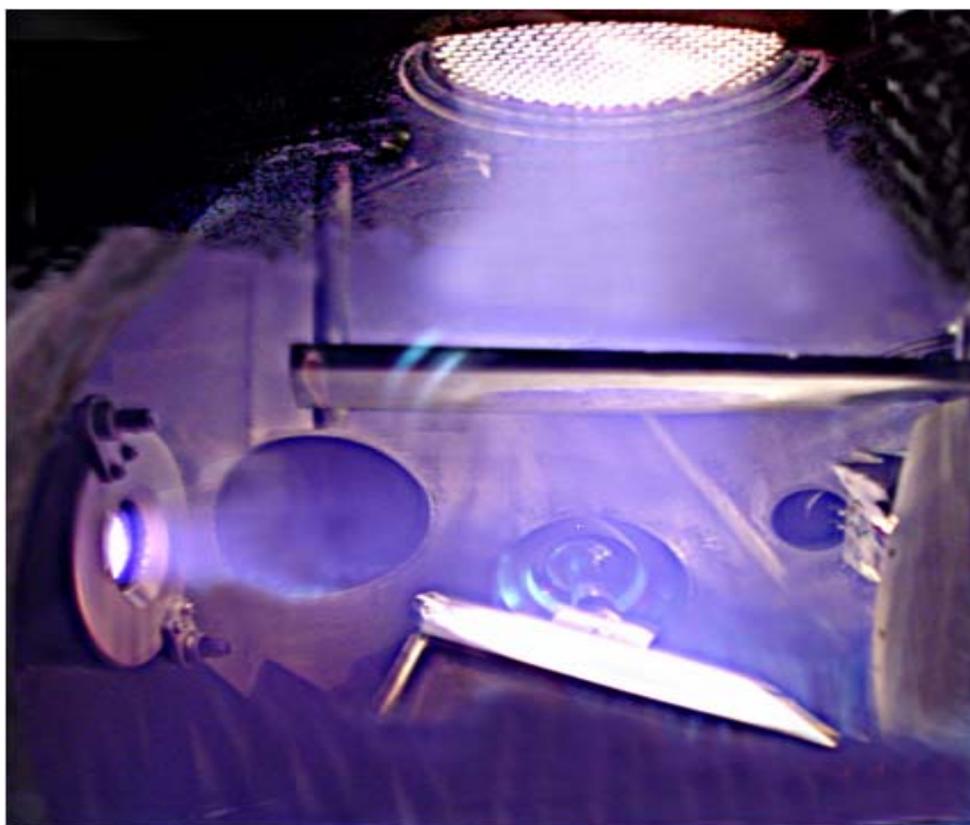
IOP | Institute of Physics

Ion and Plasma Surface Interactions Group

<http://ipsi.iop.org>

NEWSLETTER

March 2010



The chamber of the Ion Beam Assisted Deposition System at Manchester Metropolitan University

Welcome to the Ion and Plasma Surface Interactions (IPSI) Group Newsletter

This Newsletter contains reports of recent meetings and details of forthcoming events which will be of interest to Group members. Also, we include tips on the benefits of group membership, and details of student bursaries available for attendance at International conferences.

The organization and support of a range of scientific meetings and conferences is one of the most important tasks of the Group. We organize meetings ourselves, co-sponsor others in our fields of interest, and bring others to the attention of group members. Please let us know if you have an idea for an event, or know of any conferences or meetings which might be of interest to IPSI Group members.

We are always keen to welcome new Committee members. Do contact us if you'd like to know more about Committee membership – we typically meet about 3 times per year, at the Institute in London. You would be able to have your say on how the Group runs, and even get involved in more general Institute of Physics affairs.

Please encourage colleagues, contacts and students to join the Group, and to get involved with Group activities. Through a large and active group membership we can promote our interests, support those working in the area, and have a clear voice in the scientific community.

Zoe Barber (IPSI Group Committee Chairman)

Thin Film Photovoltaics a Roaring Success!

This one day event, on 16th September 2009, was organised by Professor Mike Walls and Dr Alf Smith, and was attended by approximately 120 delegates. The key speakers included Professor Larry Kazmerski (NREL, USA) speaking on the current state and future of thin film photovoltaics; Professor Victor Karpov, who gave a fascinating talk on the physics of thin film photovoltaics; and Professor Subhendu Guha (United Solar Inc, USA) who gave an excellent overview of advances in amorphous and nano-crystalline silicon PV technology.

Other talks included discussion of the synthesis of CIGS in combination with CZTS or CdTe, and recent developments in flexible solar cells and nano-crystalline composite cells. The lectures were informative, inspirational and of remarkably high standard, attracting enormous attention by the audience.

The poster session included a host of excellent papers from a variety of academic and industrial authors including a number of graduate and post-doctoral researchers. The exhibition was also well attended by companies, promoting various products including deposition systems, diagnostics, and characterisation tools.

The event was very topical and an extraordinary success by any measure. It was co-sponsored by the Thin Films & Surfaces Group, the Vacuum Group, the Printing & Graphic Science Group, and by the Applied Physics & Technology Division of the Institute of Physics.

Joint meeting of the Solar Energy Society and PV NET

This is the premium UK annual event on photovoltaics, on this occasion the meeting taking place at Glyndwr University, North Wales on 1 - 3 April 2009.

The event was attended by approximately 200 delegates. A total of 75 papers were presented at the meeting, the majority of which represented the current state of research at various academic institutions in the UK. There was an excellent attendance by young graduate and postgraduate scientists, some of whom presented exceptionally impressive papers.

The topics included the status of the UK PV market, large scale evaluation of PV technologies, as well as research and development of various PV related materials. The materials technologies included high efficiency crystalline silicon, amorphous silicon, cadmium telluride & related technologies, dye sensitized cells, concentrators, various transparent conducting oxides (TCOs), absorbers, as well as photovoltaic systems, including system modelling, design and components.

There were further reports on the applications of different deposition methods (including large area deposition systems), characterisation methods, testing and performance measurements, touching upon policy issues including economics, market development and the environment .

This is a very important event in the UK, providing an excellent route for exchange of information and ideas in the PV community, particularly amongst the young scientists. The conference will, however, benefit from further contributions from Europe, the American institutions and also from industry.

The conference was sponsored by The Carbon Trust, EPSRC, PV Crystalox and the IOP.

Forthcoming Meetings

Group AGM, 16 June 2010, Institute of Physics. The AGM will be held at the Institute of Physics in the lunch break of the Plasmas Surfaces and Thin Films meeting (see below). New committee members will be needed – please give us your ideas for nominations.

37th IOP Annual Conference on Plasma Physics, 29 March – 1 April 2010, The Low Wood Hotel, Windermere, UK, <http://plasma10.iopconfs.org/>

Novel Aspects of Surfaces and Materials (NASM 3), 11-15 April 2010, Chancellor's Hotel and Conference Centre, Manchester, UK, <http://nasm.iop.org/> This conference, organised by the Institute's Applied Physics & Technology Division, is interdisciplinary and interactive, to be delivered in a format that highlights new developments and promotes opportunities for new collaborations on funding applications and networking. The conference will include presentations on current applied physics challenges, developments and approaches to surfaces and materials. The invited speakers will share their vision and knowledge on contemporary research and technology.

Plasmas Surfaces and Thin Films, Wednesday 16 June 2010, Institute of Physics
http://www.iop.org/Conferences/y/10/plasma/page_38089.html This one day meeting is a popular annual event providing a forum for those involved in using plasmas and ion beams for surface modification, surface analysis and thin film deposition. Topics covered include modelling of fundamental atomic collisions in solids through to new techniques for high throughput industrial processes. This year's event includes presentations on HIPIMS technology from Prof. Ulf Helmersson (Linköping University), and from Dr Arutiun Ehasarian (Sheffield Hallam), as well as roll-to-roll deposition for industrial applications, modelling of film growth and optical thin films.

12th International Conference on Particle Induced X Ray Emission, 27 June – 2 July 2010, University of Surrey,
<http://www.surreybc.ac.uk/PIXE12/> This will be the 12th conference in the triennial series and will focus on new developments in PIXE techniques and the growing range of PIXE applications, ranging from archaeometry to planetary exploration.

The 1st International Conference on HIPIMS 2010 6-7 July 2010, Sheffield, UK www.shu.ac.uk/hipims This event, on novel High Power Impulse Magnetron Technology, is organised by Sheffield Hallam University and the Network of Excellence INPLAS in Germany, and is the successor of the HIPIMS Days organised at Sheffield Hallam University for the last 6 years. This year the conference will be supported by the Society of Vacuum Coaters in the USA who are offering two full-day tutorial courses on the topics of "Thin Film Growth and Microstructure Evolution" by Prof. Joe Greene and "Sputter Deposition in Manufacturing" by Dr. David Glocker.

The oral and poster contributions will address plasma diagnostics in oxygen-containing atmosphere, new discharge modes and mechanisms of ignition. Hardware development, process control in oxygen atmosphere and deposition of Si- and Ti- oxides will be reported. A number of contributions will focus on microstructure formation and properties of transition metal nitrides, carbides and carbo-nitrides including single layers, nanolayers and nanocomposite structures. Applications to high-temperature oxidation, wear protection and fuel cells as well as industrial scale processing will be discussed.

Thin Film PhotoVoltaics 15 September 2010, Institute of Physics

Plasma Surface Engineering, Garmisch-Partenkirchen, Germany: 13-17 September 2010, <http://www.pse2010.net>

European Conference on Applications of Surface and Interface Analysis: 4-11 September 2011, Cardiff UK,
<http://www.ecasia11.org/>

Benefits of joining the IPSI Group

- [Fast access to news](#) in the ion and plasma surface interactions community; notification of upcoming meetings and conferences.
- Conference [bursaries and prizes](#) for students
- [Links](#) with researchers with similar interests
- [Funding and general support](#) for conferences and public engagement events
- Great for your [career](#) development
- Group Membership is [free](#) with your IOP membership, so join today!

What does the IPSI Group do?

- Provides a forum for researchers working in ion and plasma surface interactions, allowing them to meet others with similar interests
- Supports the interests of these researchers on IoP Committees
- Organises and supports conferences related to ion and plasma surface interactions
- Sponsors students to go to conferences and gives prizes
- Communicates advances in plasma surface interactions to the community

IPSI Sends Students to Premier International Conferences

The IPSI committee awarded a £250 bursary to Jaydeep Mody from the University of Surrey to give a talk at SIMS XVII in Toronto Canada, the premier conference in the field. Jaydeep said:



"It was wonderful to have the opportunity to deliver an oral presentation myself, thereby having presentation practice and being able to raise awareness of our work in the wider SIMS community.... I would like to thank the Institute of Physics for the grant, which allowed me to have this great experience"

A bursary of £250 was also awarded to Matthew Christopher, from the University of Surrey to attend IBA 2009 in Cambridge to present his work on "Glass fragment identification for forensic case work using ion beams" Matt said



"It was especially interesting to attend this conference in the series as it marked the 100th anniversary of the first backscattering experiment in the laboratory of Lord Ernest Rutherford... This was the first international conference that I have attended and gave me the opportunity to meet some of the authors of papers I have been reading for my literature review and to get their feedback on my particular research area".

The Research Student Conference Fund can provide financial support to research student members to attend international conferences and major national meetings. Apply for up to £250 during the course of your PhD. If you would like to apply, please visit:

http://www.iop.org/activity/groups/subject/ipsi/Student_Bursaries/page_7242.html

The Committee

Chairman

Zoe Barber University of Cambridge, zb10@cam.ac.uk

Hon. Secretary

Melanie Bailey University of Surrey m.bailey@surrey.ac.uk

Treasurer

Adrian Leyland University of Sheffield

Hazel Assender University of Oxford
Ashley Knowles York Photonic Technology Limited
Vladimir Vishnyakov Manchester Metropolitan University
James Walsh University of Loughborough
Philip Martin University of Manchester
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Karen Kirkby University of Surrey
Richard Hurley University of Belfast
Gregory Clarke Pilkington Technology Management Ltd
Morgan Alexander University of Nottingham
Alf Smith Dalmatian Technology Ltd
Graham Cooke Hiden Analytical
Michael Walls Loughborough University

Ideas for future meetings: The Group welcomes ideas from members for topics for future events, including conferences, meetings and workshops. Please contact the Chairman or Secretary.

This newsletter is also available on the web and in larger print sizes

The contents of this newsletter do not necessarily represent the views or policies of the Institute of Physics, except where explicitly stated.

The Institute of Physics, 76 Portland Place, W1B 1NT, UK.

Tel: 020 7470 4800

Fax: 020 7470 4848