

## **1 THE IOP PGS STUDENT CONFERENCE**

The Institute of Physics (IoP) Printing and Graphics Science (PGS) Group Student Conference was held at Swansea University in October 2007. This meeting is a forum where work recently completed or in progress in the group's subject areas at postgraduate level (MSc, MPhil or PhD) is presented. It is on a good scale for this with 30 registered delegates. The speakers did very well competing against the building work going on just outside the meeting room!

The conference is a good opportunity to meet students from around the UK who are working in these fields and provides an indication of the research directions of various groups.

### **1.1 Swansea University**

The Welsh Centre for Printing and Coating were our hosts for the day so not surprisingly they fielded a strong contingent.

A paper on misting from offset printing inks on roller trains showed an interesting adaptation of a tack tester to visualise the mist. A further paper (which was judged best at the conference) looked at aspects of the rheology of contact printing ink under extension. It contained a good analysis of the problem, new instrument development and a neat way of developing information on inks for this application. The treatment of errors also appeared sound. All in all, very good work on the dynamic behaviour of ink.

Also from Swansea, but this time from the Department of Civil and Computational Engineering, was a paper modelling the design of easy-open-end cans. It was interesting to see this physics/engineering interface, modelling the material science of steel constructions.

#### **1.1.1 Tour of the department**

During lunch we were given a tour of the facilities. They are extensive with a large number of staff and students. In particular they are lead partner in the Print Training Consortium, part of a project to raise the skill level and sustainability of Welsh commerce.<sup>1</sup>

### **1.2 Department of Colour Chemistry, University of Leeds**

The papers from Leeds showed the breadth of work going on in this department. There was an interesting paper explaining the factors influencing carton box compression strength. This showed some good physics investigating the physical parameters of cardboard, both across and with machine direction. A paper on lithographic printing blankets showed the active cross over of polymer chemistry into the physics of printing going on in this department. A further paper on the characterisation and optimisation of gravure printing inks showed some very good cross sections of prints but this work is still in early days.

There was also a paper on the factors influencing perceived image quality of large displays.

### **1.3 University of Manchester**

A good paper from the Organic Materials Innovation Centre (OMIC) examined some aspects of the problems faced when inkjet printing concentrated polymer solutions. The work is being conducted with support from the Eastman

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Chemical Company European Technology Centre in Kirby. This is an indication of the sort of technology build going on at OMIC.

## **1.4 University of Westminster**

This is a group I know well through my involvement with the Royal Photographic Society Imaging Science Group. They presented an interesting paper on colour errors in the camera – LCD display imaging chain. This was a good example of colour management experiments. The paper was also shown at a Royal Photographic Society Imaging Science Group Digital Futures conference.<sup>2</sup>

## **1.5 University of Birmingham**

An interesting paper from the School of Mathematics at Birmingham showed some early work on the modelling of impact and subsequent spreading of printed inkjet drops. This work, being funded by Kodak at Cambridge is still at an early stage. It will be interesting to see where this work, supervised by Prof. Shikhmurzaev, leads.<sup>3</sup>

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## 2 **REFERENCES**

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<sup>1</sup> See [http://www.swansea.ac.uk/printing/Print\\_Training\\_Consortium/index.htm](http://www.swansea.ac.uk/printing/Print_Training_Consortium/index.htm) .

<sup>2</sup> See <http://www.rps-isg.org/docs/DF2007programme.pdf> .

<sup>3</sup> For more details on the research interests of Prof. Y.D.Shikhmurzaev see <http://web.mat.bham.ac.uk/Y.D.Shikhmurzaev/>.