



Workshop: Printing of Bio-Systems and Electronics: the Next Generation of Bionics

The advent of Desk top ink jet printing revolutionized the world of personalized printing. The advent of laboratory based ink jet printers is revolutionizing the world of advanced materials and fabricated structures containing them. The ability to design and create novel structures and devices with micron resolution on a range of substrates is having a major impact on fields as diverse as:

- chemical/biosensors
- electrochromic displays
- plastic electronics
- wearable sensor technologies
- RFID tags, and even,
- Biomaterials and NanoBionics

Recent advances in nanotechnology has enabled many highly functional materials to be more processable including improved printability. This workshop will examine the fundamental biological, physical and chemical properties of solutions/dispersions that are required to enable the merging of biology and electronics using the most recent advances in printing.

In addition, the most recent advances in fabricating practical devices by ink jet printing will be presented by each of our invited speakers.

Speakers include:

- ❖ Prof. James Yoo (Wake Forrest, USA)
- ❖ Prof. Paul Calvert (UMass, Dartmouth, USA)
- ❖ Prof. Gyoujin Cho (Sunchon National University, Korea)
- ❖ Dr Nick Samaris (Labcyte Inc)
- ❖ Mr Clive Davenport (CSIRO Future Manufacturing Flagship)
- ❖ Dr Rosie Hicks (Australian National Fabrication Facility)

The organisers, Dr Marc in het Panhuis, Prof. Paul Calvert and Prof. Gordon Wallace are looking forward to seeing you in Wollongong.



Sponsored by



Australian Government
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The Venue

The workshop will be held on campus grounds at the University of Wollongong. It is a University of international standing with an enviable record of achievement in teaching and research. It is also located in one of the most beautiful settings in Australia, just an hour's drive south of Australia's largest city, Sydney. Our students and staff come from diverse backgrounds, many from overseas. The University aims to make the experience of visiting the campus a rewarding one, and your host, ACES, is ready to deliver this to participants in our Ink Jet Printing of Bio-Systems and Electronics workshop.

Yours Hosts: IPRI and ACES

The ARC Centre of Excellence for Electromaterials Science (ACES) brings together eminent scientists to develop the nano-science and nano-technology related to the movement of electric charge within and between materials. ACES studies these processes as they are fundamentally important to a diverse array of phenomena important in many biological and industrial processes. The host node of ACES is the Intelligent Polymer Research Institute (IPRI), located at the University of Wollongong's Innovation Campus. IPRI's competencies lie in the design and synthesis of novel intelligent materials, with the team renowned for expertise in the electrochemistry of organic conductors; especially in the applications of artificial muscles, photovoltaics, batteries, biomedical and nanobionics applications.

Accommodation

Please book directly

Beach Park Motor Inn [Ph: (02) 42261577]

Boat Harbour Motel [Ph: (02) 42289166]

Normandie Motel [Ph: (02) 4229 4833]

Novotel Northbeach Wollongong [Ph: (02) 42263555]

Airport Transfers (from Sydney or Wollongong Airport)

Please book directly

Leisure Coast Limousine Service [Ph: (02) 42617393]

Registration Form

Please register your attendance by completing and returning the form below before October 15th, 2009

Please Fax to (02) 42213114

Name: _____

Address: _____

Affiliation: _____

Email: _____

Registration Cost \$250

I would like to attend Yes No

Payment is by cheque or credit card only – invoices can not be issued. Registrations are on a first in first served basis – we can not guarantee places. You will be informed within two days if your registration cannot be accepted.

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Draft Program for Printing of Bio-systems and Electronics: the next generation of bionics

Thursday December 3rd 2009

- 11:00am-11:15am Welcome: “Ink Jet Printing – Importance to Bionics”
Prof. Gordon Wallace (UoW)
- 11:15am-12:30pm to be announced
Prof. James Yoo (USA)
- 12:30pm-1:30pm ***Sandwich Lunch***
- 1:30pm-2:15pm Bio-inkjet printing
Prof Paul Calvert (USA)
- 2:15pm-3:00pm Conducting Hydrogels
Dr Marc in het Panhuis (UoW)
- 3:00pm-3:30pm ***Coffee***
- 3.30pm-4.00pm Building Inkjet Printers
Mr Charles Mire (UoW)
- 4.00pm-4.30pm Characterisation of inkjet printed structures
Dr Michael Higgins (UoW)
- 4:30pm-4:50pm to be announced
Dr Nick Samaris (Labcyte Inc)
- 4.50pm-5.10pm to be announced
Dr Rosie Hicks (Australian National Fabrication Facility)
- 5.10pm-5.30pm to be announced
Mr Clive Davenport (CSIRO Future Manufacturing Flagship)
- 6:00pm-8:00pm ***BBQ***

Friday December 4th 2009

- 9:00am-9:45am Demonstration of Dimatix and UoW InkJet Printers
Mr Charles Mire
- 9:45am-10:30am Demonstration of Deerac Fluidics Equator and UoW Extrusion printers
Mr Cameron Ferris and Mr Charles Mire
- 10:45am-11:15am ***Morning Tea***
- 11:15am-12:00pm Printing RFID Tags
Prof. Gyoujin Cho (Korea)
- 12:00pm-12:10pm ***Closing Remarks*** – Prof. Gordon Wallace
Sandwich Lunch
- 1:00pm Lab Tour of IPRI/ACES