



Manufacture and Sustainability of E-Textiles

Thursday 16th January, 09.30-16.30

Hartley Suite, Building 38, University Road, University of Southampton SO17 1BJ

9.30	Registration & Coffee
10.00	Welcome and Introduction
10.05	Textile Manufacturing Methods: Spinning, Knitting, Weaving and Finishing - Prof. Chris Carr, School of Design, University of Leeds <i>This presentation covers the traditional textile materials and manufacturing processes including yarn spinning, weaving/knitting, dyeing and finishing.</i>
10.25	Large Area Electronics Manufacture using Printing Techniques - Prof. Tim Claypole, Swansea University <i>Advanced manufacture by printing of large area electronics requires the application of complex fluids (inks and coatings) using complex flows. The main volume printing processes are briefly described through considering the ink flow and looking at the merits of each process. Advanced rheology to measure the flow and viscoelastic properties for formulation and process control is then considered. This can enable quicker optimisation of formulations using less inks than required for printing trials and it can also be used for quality assurance of the ink.</i>
10.45	Manufacturing E-Textiles and Smart Garments - Cath Rogan, Smart Garment People <i>This presentation covers the materials (e.g. yarns, fabrics, printable inks) and associated electronic components (e.g. batteries, controllers, connectors) used to manufacture e-textiles. It also includes different manufacturing methods used in e-textile construction and examples of smart garments involving apps & data collection. Challenges to scale will be presented at the end of the talk.</i>
11.05	Panel Discussion – Q&A and General Discussion
11.15	Facilitated Workshop Session: <ol style="list-style-type: none"> 1. What manufacturing processes can be used to add electronic functionality to textiles/textile products? 2. What are the technical obstacles preventing the mass production of e-textiles? 3. What are the research challenges/questions that must be addressed to enable the mass manufacture of e-textiles?
12.30	Lunch and Networking



2.00	<p>Dealing with Electronic Waste - Prof. Ian Williams, University of Southampton</p> <p><i>Prof Ian Williams will outline the history and trends behind our global e-waste problem. He will explain some of the jargon and terminology associated with e-waste. He will then briefly describe and explain the impacts of e-waste; describe selected systems used for e-waste management and regulation and highlight future challenges.</i></p>
2.20	<p>Sustainability in the Textile/Fashion Industry - Prof. Sandy Black, Centre for Sustainable Fashion, London College of Fashion</p> <p><i>The textile/fashion industry is acknowledged as one of the most polluting industries, but sustainability in both textiles and fashion is a wicked problem – with many complex issues to be reconciled throughout the textile lifecycle, in addition to the systemic problems within the fashion business model. This presentation gives an overview of current activities and strategies across the sector that are beginning to address some of the key problems.</i></p>
2.40	<p>Repair, Recycling and Disposal of E-Textiles - Dr Dorothy Hardy, Freelance Research Communicator</p> <p><i>Dorothy Hardy led a team who discovered wide variations in E-textile design for recycling and disposal; plus difficulties in placing E-textiles into the existing electronics or textiles waste streams. She gives details in her presentation; showing how attendees can optimise E-textile designs, to ensure that future E-textiles can be repaired and separated into components suitable for recycling.</i></p>
3.00	Panel discussion – Q&A and General Discussion
3.10	<p>Facilitated Workshop Session</p> <ol style="list-style-type: none"> 1. What does the requirements for sustainability mean for the design and manufacture of e-textiles? 2. What are the technical obstacles to making e-textiles sustainable? 3. What are the research challenges/questions that must be addressed to enable e-textiles to become sustainable products?
4.25	Wrap Up and Next Steps
4.30	Close