The University of Sheffield
Sheffield, UK

1st-3rd September 2010

IIMM 2010

International Conference on

Interfaces and Interphases in Multicomponent Materials

Conference Programme

1st September 2010		
0915	**Opening**	
INTERPHASES AND INTERFACES FIBRE COMPOSITES		
0930	**L T Drzal** , Michigan State University, USA (Plenary)	*Engineering the Fibre-matrix Interphase for Mechanical Properties and Manufacturing Ability*
1015	**Coffee**	
1040	**G R Lomax,** Baxenden Chemicals Ltd, UK (Keynote)	*Isocyanate Chemistry for Adhesion to Fibre Surfaces*
1110	**Surface Treatments for Adhesion**	
	Pieter de Lange, Tejin Aramid BV, The Netherlands	*Adhesion activation of Twaron aramid fibers: Chemical versus Plasma Treatment*
	Jacqueline Yim, Drexel University, USA	*Influence of Functional Groups on Interfacial Adhesion in PE-Epoxy Composites*
	Jack Howarth, University of Sheffield, UK	*Interface Optimisation of Recycled Carbon Fibre Composites Using Plasma Treatment*
	Tim Swait, University of Sheffield, UK	*Plasma polymerization: A gas phase sizing technique for the molecular engineering of interphases and the locus of failure of fibre composites*
1230	**Lunch**	
1330	**T Peijs** QMW (Keynote)	*Interfaces in All-cellulose and all-Aramid composites*
1400	**Quantification and Analysis of Interfaces in Composites**	
	Cate Brinson Northwestern University, USA	*Effects of Interface, Interphase and Substrate on Mechanical Properties of Polymers via Experiments and Simulations of Nanoindentation.*
	Tim Young, National Physical Laboratory,UK	*Identification of Measurement Artefacts in the Characterisation of Interfaces in Micro- and Nano-composites*
	R.T. Durai Prabhakaran *, Risø National laboratory, Denmark	*Interface characterization of coated steel fibre/polymer using pull-out test*
	Zheng Liu, University of Sheffield, UK	*Six Image Phase Stepped Photoelasticity for the Quantification of the Stress Field around Thin Fibres.*
1520	**Tea**	
1540	**Modelling of Interfacial Micromechanics**	
	Stergios Goutianos, Risø National Laboratory, Denmark	*Measurement of Interface Cohesive Laws using Digital Image Correlation*
	Charles Lord, University of Sheffield, UK	*Linearized Material Properties of Nonlinear Interfacial Contact of Layered Composites*
	Dimitrios Myriounis, Sheffield Hallam University, UK	*Role of Interfacial Properties on the Mechanical Behaviour of Al/SiC$_p$ Composites*
1640	**Poster Session and Reception**	

2nd September 2010

INTERFACES IN NANO AND BIOCOMPOSITES

0900	**H D Wagner,** Weizmann Institute, Israel (Plenary)	*The Mechanics of Small Objects: Selected Experiments from Various Landscapes*
0945	**Nano Sheet Composites**	
	Hatsuo Ishida, Case Western Reserve University, USA	*Graphene-oxide reinforced polybenzoxazine nanocomposites*
	Tokuji Myashita, Tohoku University, Japan	SiO_2 Ultrathin Film Formation using Silsesquioxane Copolymer Nanosheet Assembly
	Robert Young, University of Manchester	*Interfacial Stress Transfer in Graphene Monolayer Nanocomposites*
10.45	**Coffee**	
	Interfaces in Bio and Natural Fibre Composites	
11.15	**Steve Eichhorn,** University of Manchester, UK (Keynote)	*Natural Fibre Composites Promising Materials from Renewable Sources*
	Asa Barber, Queen Mary University of London, UK	*Evaluating Nanoscale Interfacial Mechanics in Bone Material using Single Collagen Fibril Pullout Testing*
11.45	**Franck Quero,** University of Manchester, UK	*Effect of Chemical Modification on the Stress-Transfer Properties of Bacterial Cellulose/Poly(L-lactic) Acid Nanocomposites*
	Julianne Holloway, Drexel University, USA	*Characterization of the Fiber-Matrix Interface in UHMWPE-PVA Hydrogel Composites for Synthetic Meniscal Replacement*
	Rafeadah Rusli, University of Manchester, UK	*Molecular Deformation of Tunicate and Cotton Whisker Polymer Nanocomposites using Raman Spectroscopy*
12.55	**Lunch**	
14.00	**David Porter**, University of Oxford, UK (Keynote)	*Silkworm Cocoons as Models for Mechanical Properties of Multicomponent Materials*
14.30	**Interfaces in Particulate Composites**	
	Bela Pukanszky, Budapest University of Technology and Economics, Hungary	*Quantitative Determination of Interfacial Adhesion in Composites with Strong Bonding*
	Clint Bainbridge, Manchester Metropolitan University, UK	*A Novel Approach to Polyolefin Recycling*
	Mustapha Kaci, Université Abderrahmane Mira, Bejaia, Algeria	*Influence of Ethylene-Butyl Acrylate-Glycidyl Methacrylate Terpolymer on Compatibility of Ethylene Vinyl Acetate Copolymer/Olive Husk Flour Composites*
	Siamak Moradian , Amirkabir University of Technology, Iran	*Disperseability, Dyeability and Thermal Properties of Polyethylene Terephthalate/Silica Nanocomposites Modified with Hydrophilic or Hydrophobic Nanosilica*
15.50	**Tea**	
16.15	**Interfaces in Multicomponent Polymers**	
	John Torkelson, Northwestern University, USA	*Gradient Copolymers: Novel Multicomponent Materials that are all Interphase in Bulk and Provide a new means of Tuning Interfacial Properties in Blends*
	Andrea Pucci, University of Pisa, Italy	*Luminescent Biodegradable Multiphase Materials as Smart Indicators to Thermal Stress*
	Amy Peterson, Drexel University, USA	*Thermoreversible and Remendable Interfaces for Polymer Composites*
17.15	**PLUEDDEMANN AWARD LECTURE**	
1800	**Reception**	
1830	**Conference Dinner and Bar-B-Que**	

3rd September 2010		
THE ROLE OF INTERFACES IN COMPOSITE MANUFACTURE		
0900	**H Hamada** Kyoto Institute Technology, Japan (Plenary)	*Recent Interfacial problems related to composite manufacturing*
0945	**Jim Thomason,** University of Strathclyde, Scotland (Keynote)	*Interfacial Strength of Fibre Reinforced Thermoplastics*
1015	**Coffee**	
1045	**Interfaces in Functional Composites**	
	Shigeji Konagaya, Nagoya University, Japan	*Conductivity of Conductive Polymer Composites and Nano-particles*
	Nobuo Ikuta, Shonan Institute of Technology, Japan	*Filling Effect of Physisorbed Silane on Magnetic Particulate Composites*
	Kazuaki Sanada, Toyama Prefectural University, Japan	*Finite Element Analysis of Effective Electric Conductivity of Conducting Polymer Composites with TiO_2 Nanoparticles*
	Seira Morimune, Kobe University, Japan	*Structure and Properties of Poly(vinyl alcohol) Composites with Nanodiamond*
	J M García-Martínez, Instituto de Ciencia y Tecnología de Polímeros. CSIC, Spain	*A dynamic mechanical analysis study of the interfacial changes induced from both the reinforcement and the matrix sides in polypropylene/surface modified talc composites.*
	Alma Hodzic, University of Sheffield, UK	*Optimisation of Thermo-electrical Properties of Carbon Fibre Reinforced Composites Modified with Carbon Nanotubes*
12.45	**Closing Remarks**	
13.00	**Lunch**	