University of Birmingham

Dr Géraldine Oliveux Eur Ing, PhD

Research Fellow

School of Chemical Engineering (/schools/chemical-engineering/index.aspx)

Contact details

Telephone +44 (0) 121 414 5081 (tel:+44 121 414 5081)

Email g.oliveux@bham.ac.uk (mailto:g.oliveux@bham.ac.uk)

School of Chemical Engineering
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

About

Geraldine Oliveux is a Research Fellow at the School of Chemical Engineering in the field of recycling and remanufacturing of composite materials.

During her PhD, Geraldine studied the recycling of composite materials by hydrolysis at high temperatures and pressures. She was awarded for her study on the chemical mechanisms and kinetics of hydrolysis of unsaturated polyesters reinforced with glass fibres. She also has a strong background as engineer and project manager in industry for the development of composite materials, from design to manufacturing and repair.

Qualifications

- PhD (distinction) in Physical Chemistry of Materials, University of Nantes, 2012
- Master's Degree in Engineering of the Institut Français de Mécanique Avancée (IFMA)

Biography

Geraldine was awarded a Master's Degree in Engineering from a French "Grande Ecole" in 2001. She started to work for the composites industry during about 8 years and this is during this experience that the problem of their recycling became a growing concern for her. She then seized the opportunity to contribute to the development of technologies to recycle the composite materials by doing a PhD. Her objective is now to go on to study and develop recycling and remanufacturing of composite materials until industrialization.

She is now joining the University of Birmingham in order to achieve this goal in the framework of an EPSRC funded project.

Research

Geraldine is currently working on the recycling of composite materials in the framework of the project EXHUME (Efficient X-sector use of HeterogeneoUs MatErials in Manufacturing). This work is done in collaboration with Exeter University, Cranfield University and the University of Manchester. It also involves companies like EADS, EnginSoft, LANNER, Kirton Kayaks, Meggitt Aircraft Braking Systems, TWI and the National Composites Centre (NCC) and the Environmental Sustainability and Materials KTNs. During this 3-years project, Geraldine will explore different techniques to transform thermoset and thermoplastic composite materials while retaining reinforcement properties of fibres and separating matrices as appropriate to produce fibre/resin classes of materials that can be used in remanufacture. The project will focus all classes of composite materials (GF, CF, polyester, epoxy, and thermoplastics).

Other activities

Peer reviewer for:

- Chemical Engineering Journal
- Composites Part A
- Composites Science and Technology
- Polymer
- Polymer Degradation and Stability

Publications

- Oliveux, G., Le Gal La Salle, E., Bailleul, J.L., (2010), Recycling by hydrolysis thermosetting composite materials of sustainable transport, AIP Conf. Proc. International Conference on Advances in Materials and Processing, 1315: 209-214
- Oliveux, G., Le Gal La Salle, E., Bailleul, J.L., Heard, P.J., Ball, R.J., Hallam K.R., Ghita, O., (2012), Recyclage par solvolyse des matériaux composites thermodurcissables du transport de surface, Matériaux et Techniques, 100 (5): 493-503
- Oliveux, G., Le Gal La Salle, E., Bailleul, J.L., (2012), Chemical recycling of glass fibre reinforced composites using subcritical water, Composites Part A, 43 (11): 1809-1818
- Oliveux, G., Bailleul, J.L., Le Gal La Salle, E., Lefèvre, N., Biotteau, G., (2013), Recycling of glass fibre reinforced composites using subcritical hydrolysis: Reaction mechanisms and kinetics, influence of the chemical structure of the resin, Polymer Degradation and Stability, 98 (3): 785-800

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