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Abstract

Interfacial Modification in Nanocomposites to Tailor Functionalities

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Abstract:

The talk will concentrate on various approaches being used to engineer materials at the nanoscale for diverse applications in future technologies. For instance, the case of clay, carbon nanostructures (e.g. nanotubes, graphene), metal oxides, bionanomaterials (cellulose, starch and chitin) will be used to highlight the challenges and progress. Several polymer systems will be considered such as rubbers, thermoplastics, thermosets and their blends for the fabrication of functional polymer nanocomposites. The interfacial activity of nanomaterials in compatibilising binary polymer blends will also be considered. Various self assembled architectures of hybrid nanostructures can be made using relatively simple processes. Some of these structures offer excellent opportunity to probe novel nanoscale behavior and can impart unusual macroscopic end properties. The talk will comprise various applications of these materials, taking into account their multifunctional properties. Some of the promising applications of clay, metal oxides, nanocellulose, chitin, carbon nanomaterials and their hybrids will be reviewed. Finally the effect of dewetting upon solvent rinsing of nanoscale thin films will also be discussed.

Biography:

Professor Sabu Thomas is currently Vice Chancellor of Mahatma Gandhi University. He is the Director od School of Energy Materials ,Kottayam. Kerala, India. He is also the former Director of School of Chemical Sciences of Mahatma Gandhi University, Kottayam, Kerala, India and the Founder Director and Professor of the

International and Interuniversity Centre for Nanoscience and Nanotechnology.

Publication of speakers:

1. Biofibres and biocomposites; MJ John, S Thomas.
2. A review on interface modification and characterization of natural fiber reinforced plastic composites; J George, MS Sreekala, S Thomas.
3. Dynamic mechanical analysis of banana fiber reinforced polyester composites; LA Pothan, Z Oommen, S Thomas.
4. Effect of chemical treatment on the tensile properties of short sisal fibre-reinforced polyethylene composites; K Joseph, S Thomas, C Pavithran.
5. Transport phenomena through polymeric systems; SC George, S Thomas.

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