

Interfacial modification in nanocomposites to tailor functionalities

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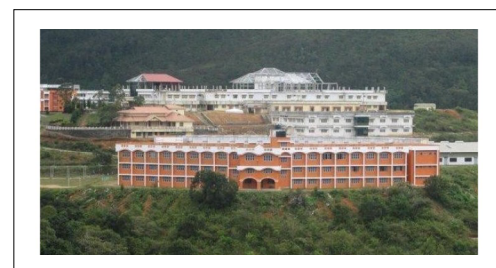


Abstract

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), and 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

Sabu Thomas is a highly committed teacher and a remarkably active researcher well-known nationally and internationally for his outstanding contributions in polymer science and nanotechnology. He has published over 1000 research articles in international refereed journals. And he also edited and written 140 books with an H-index of 106 and total citation of more than 53,000. He has received a large number of international and national awards and recognitions. Under the leadership of him, Mahatma Gandhi University has been transformed into a top University in the country where excellent outcome-based education is imparted to the students for their holistic development. The world ranking of Professor Thomas is 114 and is ranked number 2 in the area of Polymer Science from India.



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