



Polymer Nanocomposite Interfaces; Fabrication, Properties and Simulations

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Message from the Guest Editors

Although commodity polymers are abundant and easily processable, their use is limited due to low mechanical, thermal, and dielectric properties. Polymer nanocomposites, which mainly refer to polymer matrices reinforced with nanoscale fillers, have shown superior properties due to well-formed interfaces between the pure components. A typical fallacy nowadays is seen in the relevant studies that if two components of polymer and nanoparticles are utilized, the term “polymer nanocomposites” could be applicable without confirming the formation of interfaces. Taking into consideration avoiding this fallacy, research topics related to new and scalable fabrication methods based on the “bottom-up strategy” are shown, while their properties characterization based on the “top-down strategy” by newly-developed techniques may confirm the formation of interfaces. In some cases, the characterization is not cost-effective, and therefore, the use of simulations at different scales based on both continuum approaches and molecular-dynamic is proposed.





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