

Special Issue on  
**Particulate-Filled Advanced Polymer Composites**

# CALL FOR PAPERS

The interest in polymer composites research is due to a wide range of their applications. Polymer matrix is often low in stiffness and strength necessitating inclusion of compatible inorganic particulate fillers, such as  $\text{Al}_2\text{O}_3$ , glass, micro/nanosilica,  $\text{Mg}(\text{OH})_2$ , and  $\text{CaCO}_3$  particles including carbon nanotubes and layered silicates, and natural plant based fillers. These particulate fillers can also provide additional constitute phases towards improved performance of end products. These particles give polymers a number of desirable properties including increasing hardness, decreasing thermal expansion coefficient, and improving resistance to wear, creep, and fracture toughness. Another advantage of the fillers is that they are capable of modifying or optimizing properties to meet service conditions. However, difficulties in matrix-filler relationships in polymer composites are due to their structural complexity arising from the anisotropy induced in matrix by the filler. Besides, the inclusion of fillers may compensate some desirable properties. For an example, inclusion of stiff particles to a matrix can easily increase the stiffness since the rigidity of inorganic fillers is generally much higher than that of organic polymers, whereas strength properties can vary depending on type of loading and particle size of fillers. Bonding and compatibility between polymer matrices and particulate fillers often determine their behavior. Hence, stiffening, strengthening, and toughening mechanisms of these composites require further attention.

The main aim of this special issue is to provide a platform for the dissemination and discussion of recent research and achievements on particulate-filled advanced composites which address various issues from the theoretical and practical viewpoints. Articles on theoretical as well as experimental investigations are welcome. Reviews within the domain of this issue are also welcome.

Potential topics include but are not limited to the following:

- ▶ Synthesis and manufacturing (e.g., synthesis, process, and product optimization)
- ▶ Mechanical and thermal properties (e.g., characterization and optimization)
- ▶ Micromechanics and fracture analysis (e.g., theory, analysis and experimental verification)
- ▶ Recycling (e.g., techniques, use of waste materials for reduce carbon footprint, and hazard reduction).

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ijps/pfapc/>.

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