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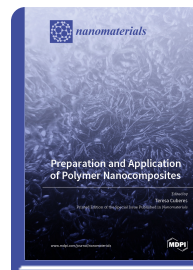
*Special Issue Reprint*

## **Preparation and Application of Polymer Nanocomposites**

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Teresa Cuberes

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This reprint focuses on the preparation of polymer nanocomposites for various fields, such as structural, electronic, sensing, energy harvesting, and biomedical applications. A wide variety of matrices have been considered, such as polymer-modified asphalt, ultra-high molecular weight polyethylene, polymethyl methacrylate, polydimethylsiloxane elastomer, polyvinylidene fluoride, polyvinyl amide, poly( $\epsilon$ -caloprolactone), and ureasyl polyether. The results corroborate that incorporating nanomaterials into polymeric matrices facilitates developing advanced materials with improved properties. Issues such as filler–matrix interactions, molecular organization and rearrangement, size-dependent functionality, etc., are addressed in detail. Advanced nanosensing, nanofabrication, and nanocharacterization procedures are advantageously applied.



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