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Polymers and Ionic Liquids: Shaping up a New Generation of High Performances Nanomaterials

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Message from the Guest Editors

In the last few years, the scientific community, including academic and industrial research, has put forward unprecedented efforts to develop new functional polymeric nanomaterials in terms of water or gas barriers, electrical, mechanical, fire retardancy, or self-healing properties. In order to achieve this, the introduction of organic–inorganic hybrids, based on silica, carbon nanotubes and layered silicates, or ionomers and block copolymers, have been widely reported in the literature. Very recently, ionic liquids that are organic salts have demonstrated their great potential as new components of advanced polymer materials. In fact, they can be used as interfacial agents of nanoparticles to develop high performance nanocomposites, as compatibilizing agents of polymer blends, as electrolytes in batteries, as flame retardant of polymer materials, as structuration and self-healing agents of thermoplastic and thermosets, and as processing aids of renewable resources. Thus, the main objective of this Special Issue is to highlight a glimpse of the real potential of ionic liquids in polymer nanoscience.



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Special Issue



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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal-organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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