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Current Status and Future Developments in Preparation and Application of Nonspherical Polymer Particles

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Abstract: Nonspherical polymer particles (NPPs) are nano/micro-particulates of macromolecules that are anisotropic in shape, and can be designed anisotropic in chemistry. Due to shape and surface anisotropies, NPPs bear many unique structures and fascinating properties which are distinctly different from those of spherical polymer particles (SPPs). In recent years, the research on NPPs has surprisingly blossomed in recent years, and many practical materials based on NPPs with potential applications in photonic device, material science and biomedical engineering have been generated. In this review, we give a systematic, balanced and comprehensive summary of the main aspects of NPPs related to their preparation and application, and propose perspectives for the future developments of NPPs.