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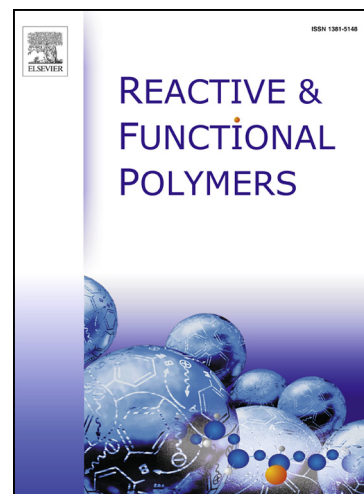
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Poly(ionic liquid)s with redox active counter-anions: All-in-one reactants and stabilizers for the synthesis of functional colloids

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Abstract

A family of all-in-one redox reactants and polymeric stabilizer or surfactant for the synthesis of functional colloids has been developed. For this purpose, poly(ionic liquid)s with cationic imidazolium or pyrrolidonium backbones and redox active counter-anions such as ReO_4^- , WO_4^{2-} , $\text{S}_2\text{O}_4^{2-}$, $\text{S}_2\text{O}_8^{2-}$, NO_3^- , BH_3CN^- were synthesized.

Poly(1-vinyl-3-ethylimidazolium) with BH_3CN^- reducing counter-anion have been used in order to synthesize silver and gold nanoparticles aqueous dispersions of 150-180 nm and ~ 20 nm respectively. On the other hand, poly(dimethyldiallylammonium) with $\text{S}_2\text{O}_8^{2-}$ oxidizing counter-anion is used to obtain PEDOT dispersions and a conventional acrylic polymer latex.

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