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Functional Materials from Polymeric Ionic Liquids RACHEL SEGALMAN, GABRIEL SANOJA, NICOLE MICHENFELDER-SCHAUSER, SAMIR MITRAGOTRI, RAM SESHADRI, UC Santa Barbara — Ionic liquids (IL's) have been suggested for applications as diverse as solubilizing cellulose, antimicrobial treatments, and electrolytes in batteries due to their molten salt properties. A polymeric cation (such as imidazolium) is an excellent host for *any* associated anion. As a result, polymerized ionic liquids are not just solid counterparts to IL's, but are shown to be vectors for the inclusion of a wide variety of functionalities ranging from multi-valent ions to magnetic anions. Moreover, PIL block copolymers allow orthogonal control over mechanical and morphological properties, ultimately leading to a conceptual framework for processable, tunable, multifunctional materials.

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