Flexible Electrochemical Displays Based on Ion Gels

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Ion gels composed of room temperature ionic liquids (ILs) and ABA triblock copolymers with IL insoluble A blocks and a IL soluble B block are attractive polymer gel electrolyte (PGE) materials owing to their outstanding ionic conductivity, high capacitance, negligible vapor pressure, and good solution processability. We functionalized ion gels to include electrochemiluminescence (ECL) and electrochromism (EC) by incorporating redox-active species. Utilizing these functionalized ion gels, we successfully demonstrated solution processable, low-voltage, flexible electrochemical displays on plastic.