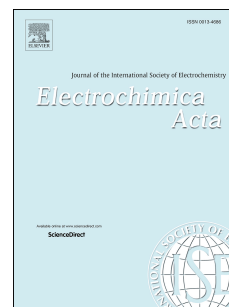


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Redox switching of polyoxometalate-doped polypyrrole films in ionic liquid media

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Abstract

The surface immobilization of the parent Dawson polyoxometalate (POM) as a counter-ion for the electropolymerization of polypyrrole (PPy) or as an electrode-adhered solid was utilized for voltammetric studies of the surface adhered POM in room temperature ionic liquids (RTIL). Illustrating the efficiency of intermediate stabilization, voltammetry at POM-modified electrodes in a PF₆-based RTIL revealed richer redox behaviour and higher stabilization in comparison with aqueous electrolytes and with BF₄-based RTIL, respectively. High stability of the POM-doped PPy towards continuous charge-discharge voltammetric redox cycles was confirmed by minor changes in film morphology observed after the cycling in RTILs.

Keywords: room temperature ionic liquid, polyoxometalate, voltammetry

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