

Abstract Submitted
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Charge transport in confined ionic liquids¹ JOSHUA SANGORO, CIPRIAN IACOB, WYCLIFFE KIPNUSU, FRIEDRICH KREMER, University of Leipzig — Charge transport and glassy dynamics in neat and polymerized ionic liquids confined in nanoporous silica are investigated in a wide frequency and temperature ranges by a combination of Broadband Dielectric Spectroscopy and Pulsed Field Gradient Nuclear Magnetic Resonance (PFG NMR). By applying the Einstein-Smoluchowski relations to the dielectric spectra, diffusion coefficients are obtained in quantitative agreement with independent PFG NMR. The impact of geometrical confinement as well as the pore wall-ionic liquid interactions on the overall ionic mobility is explored for diverse categories of ionic liquids. The results are discussed within the framework of dynamic glass transition assisted charge transport in ionic liquids.

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