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Charge transport and structural dynamics in nanoscale confined ionic liquids: role of the dimensionality of confinement¹ JOSHUA SANGORO, MAXIMILIAN HERES, TYLER COSBY, Univ of Tennessee, Knoxville — Charge transport and structural dynamics in systematic series of low molecular weight and polymerized ionic liquids (ILs) confined in nanopores and as thin films are investigated by broadband dielectric spectroscopy. Detailed analysis of the dielectric spectra of ILs confined in unidirectional nanopores with mean diameters down to 3 nm and ultra thin polymer films with thicknesses down to 5 nm reveal that the dimensionality of confinement plays a crucial role in determining the resultant ion transport properties in confined ionic liquids. In this talk, the impact of the dimensionality of confinement on ion transport and dynamics will be discussed within the framework of current theories of charge transport and glassy dynamics.

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