

Abstract Submitted  
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**Charge Transport and Dynamics in Confined Phosphonium-based Ionic Liquids**<sup>1</sup> TYLER COSBY, University of Tennessee, Knoxville, KATSUHIKO TSUNASHIMA, National Institute of Technology, Wakayama College, JOSHUA SANGORO, University of Tennessee, Knoxville — Charge transport and structural dynamics in a homologous series of phosphonium-based ionic liquids confined in silica nanopores are investigated by broadband dielectric spectroscopy and Fourier transform infrared spectroscopy. The impact of alkyl chain length and hydrophobic aggregation on the physicochemical properties as well as the interplay between confinement effects and pore-wall interactions through silica surface silanization are investigated. The results are discussed within the framework of current understanding of confinement effects in ionic liquid systems, especially in comparison to imidazolium-based ionic liquids.

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