

NMR Study Of Solvation Of Lithium Ion In Nitrobenzene/Water System - G. Moakes, L. Gelbaum, J. Leisen, and J. Janata (Georgia Institute of Technology)

Kinetics of the exchange of the solvation sphere of lithium ion transfer from nitrobenzene to water has been studied by ^7Li and ^1H NMR. It has been found that Li^+ transfers from water to nitrobenzene as fully hydrated species and exists in this form in nitrobenzene as quasi-stable species. Lithium bromide dissolved in dry nitrobenzene shows a well-separated resonance peak from the lithium bromide dissolved with nitrobenzene saturated with water. The conversion of the lithium ion species solvated with nitrobenzene to the one solvated with water happens on the time scale that allows evaluation of the kinetics of this exchange. A large surface area interface has been realized for study of ion transfer from water to nitrobenzene.