Empirical Polarity Parameters for Hexaalkylguanidinium-based Room-temperature Ionic Liquids

Milen G. Bogdanov\textsuperscript{a,c}, Ivan Svinarov\textsuperscript{a}, Helene Kunkel\textsuperscript{b}, Christine Steinle\textsuperscript{b}, Maria Arkhipova\textsuperscript{b}, Willi Kantlehner\textsuperscript{c}, and Gerhard Maas\textsuperscript{b}

\textsuperscript{a} Faculty of Chemistry, University of Sofia, 1, J. Bourchier Blvd., 1164 Sofia, Bulgaria
\textsuperscript{b} Institute of Organic Chemistry I, University of Ulm, Albert-Einstein-Allee 11, 89081 Ulm, Germany
\textsuperscript{c} Fakultät Chemie/Organische Chemie, Hochschule Aalen, Beethovenstraße 1, 73430 Aalen, Germany

Reprint requests to Prof. Dr. G. Maas. Fax: +49 731 5022803. E-mail: gerhard.maas@uni-ulm.de


The polarity of a series of 36 hexaalkylguanidinium-based room-temperature ionic liquids (RTILs), featuring different unbranched alkyl substituents in the cation and eight different anions, has been determined by means of Reichardt’s solvatochromic betaine dye; \(E_T(30)\) and the corresponding normalized \(E_T^N\) values are presented. The positively solvatochromic probe 5-dimethylamino-5′-nitro-2,2′-bithiophene was used to characterize unspecific solvent/solute interactions (effects of dipolarity/polarizability) of ten hexaalkylguanidinium and, for comparison, two 1-alkyl-3-methylimidazolium ionic liquids.

Key words: Ionic Liquids, Polarity, Hexaalkylguanidinium Salts, Reichardt’s Dye, 5-Dimethylamino-5′-nitro-2,2′-bithiophene