Supporting Information

Electrical Conductivities, Viscosities, and Densities of *N*-methoxymethyl- and *N*-butyl-*N*-methylpyrrolidinium Ionic Liquids with bis(fluorosulfonyl)amide anion

Takashi Makino,[†] Mitsuhiro Kanakubo,[†][*] Tatsuya Umecky,[†] Akira Suzuki,[†] Tetsuo Nishida,[‡] and Jun Takano[‡]

National Institute of Advanced Industrial Science and Technology (AIST), 4-2-1 Nigatake, Miyagino-ku, Sendai 983-8551, Japan, and Research and Development Department, Stella Chemifa Corporation, 1-41 Rinkai-cho, Izumiotsu, Osaka 595-0075, Japan

[†] National Institute of Advanced Industrial Science and Technology

[*] Corresponding author. e-mail: m-kanakubo@aist.go.jp, fax: +81-22-232-7002.
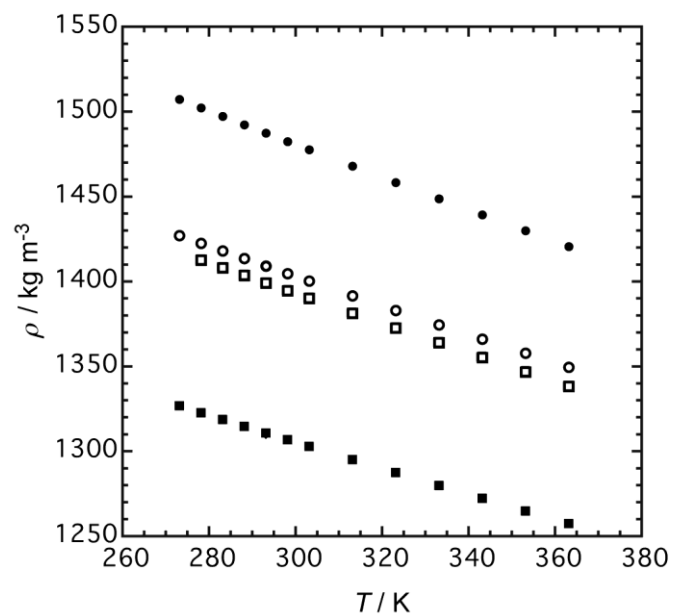
[‡] Stella Chemifa Co., Ltd.

Figure S1. Temperature T dependencies of the experimental density ρ_{exp}. Circle (open), [Pyr$_{1,1O1}$][FSA]; square (open), [Pyr$_{1,4}$][FSA]; diamond (filled), [Pyr$_{1,4}$][FSA] (ref. 4); circle (filled), [Pyr$_{1,1O1}$][NTf$_2$] (ref. 15); square (filled), [Pyr$_{1,4}$][NTf$_2$] (ref. 16). The data point of [Pyr$_{1,4}$][FSA] in ref. 4 is behind that of the present study.
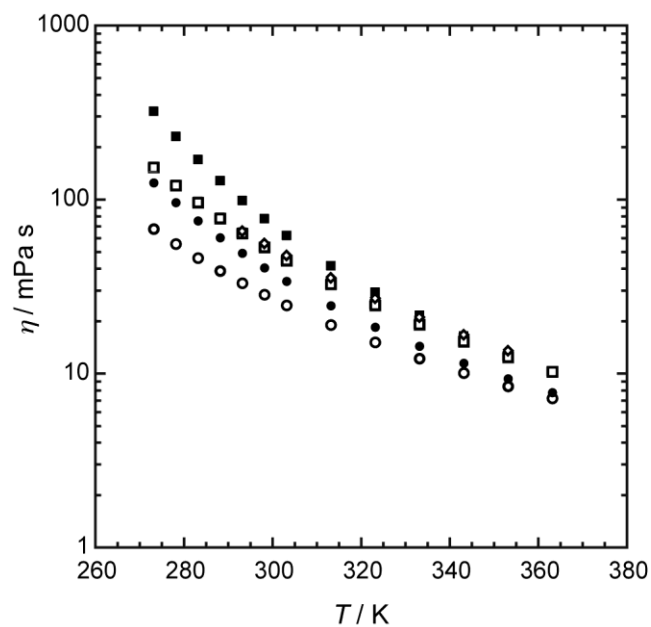
Figure S2. Temperature T dependencies of the experimental viscosity η_{exp}. Circle (open), [Pyr$_{1,1O1}$][FSA]; square (open), [Pyr$_{1,4}$][FSA]; diamond (open), [Pyr$_{1,4}$][FSA] (ref. 2); diamond (filled), [Pyr$_{1,4}$][FSA] (ref. 4); circle (filled), [Pyr$_{1,1O1}$][NTf$_2$] (ref. 15); square (filled), [Pyr$_{1,4}$][NTf$_2$] (ref. 16). The data point of [Pyr$_{1,4}$][FSA] in ref. 4 is behind those of the present study and ref. 2.
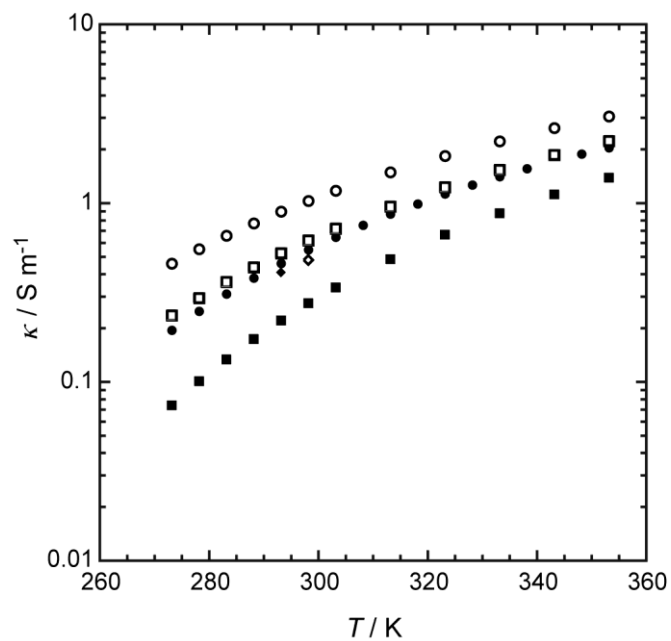
Figure S3. Temperature T dependencies of the experimental electrical conductivity κ_{exp}. Circle (open), [Pyr$_{1,1O1}$][FSA]; square (open), [Pyr$_{1,4}$][FSA]; diamond (open), [Pyr$_{1,4}$][FSA] (ref. 2); diamond (filled), [Pyr$_{1,4}$][FSA] (ref. 4); circle (filled), [Pyr$_{1,1O1}$][NTf$_2$] (ref. 15); square (filled), [Pyr$_{1,4}$][NTf$_2$] (ref. 16).
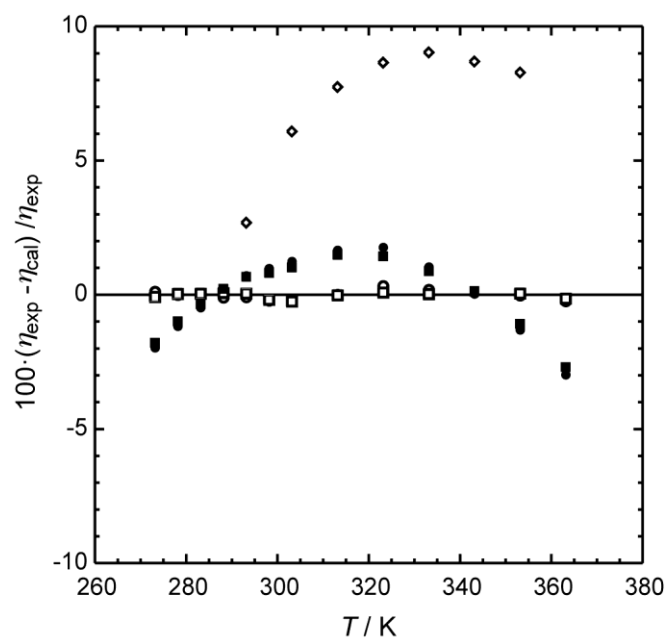
Figure S4. Overview of the residuals between the experimental viscosity η_{exp} and the calculated viscosity η_{cal} as a function of temperature T. Circle (open), [Pyr$_{1,1O1}$][FSA] for VFT; circle (filled), [Pyr$_{1,1O1}$][FSA] for Litovitz; square (open), [Pyr$_{1,4}$][FSA] for VFT; square (filled), [Pyr$_{1,4}$][FSA] for Litovitz; diamond (filled), [Pyr$_{1,4}$][FSA] (ref. 4) for VFT; diamond (open), [Pyr$_{1,4}$][FSA] (ref. 2) for VFT.
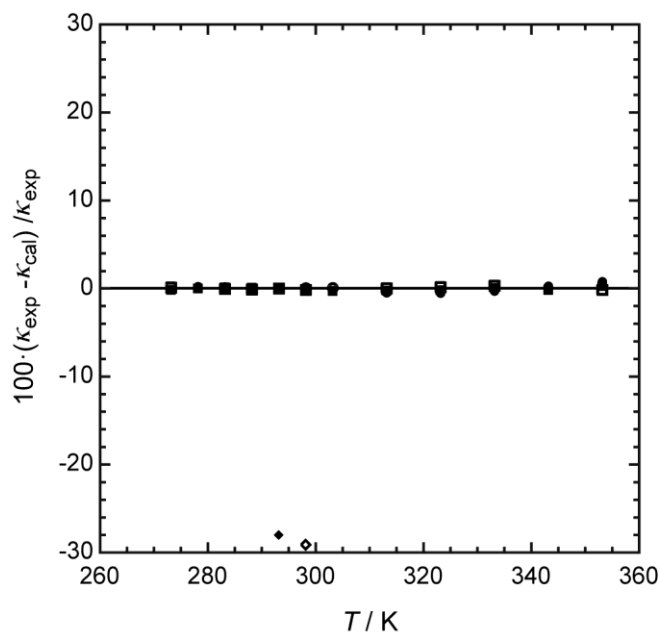
Figure S5. Overview of the residuals between the experimental electrical conductivity κ_{exp} and the calculated electrical conductivity κ_{cal} as a function of temperature T. Circle (open), [Pyr$_{1,1O1}$][FSA] for VFT; circle (filled), [Pyr$_{1,1O1}$][FSA] for Litovitz; square (open), [Pyr$_{1,4}$][FSA] for VFT; square (filled), [Pyr$_{1,4}$][FSA] for Litovitz; diamond (filled), [Pyr$_{1,4}$][FSA] (ref. 4) for VFT; diamond (open), [Pyr$_{1,4}$][FSA] (ref. 2) for VFT.