## Supporting Information

## The Liquid-Liquid Phase Behavior of Solutions of

 1,3-Diethylimidazolium Bis((trifluoromethyl) sulfonyl)amide in $n$-Alkyl AlcoholsMarisa A. A. Rocha, ${ }^{1, \#}$ Daniela Kerlé, ${ }^{1,2, s}$ Johannes Kiefer, ${ }^{1,2,3}$ Wolffram Schröer, ${ }^{4}$ and Bernd Rathke ${ }^{{ }^{*}}$<br>${ }^{1}$ Technische Thermodynamik, Universität Bremen, Badgasteiner Str. 1, D-28359 Bremen, Germany<br>${ }^{2}$ MAPEX Center for Materials and Processes, Universität Bremen, D - 28359 Bremen, Germany<br>${ }^{3}$ School of Engineering, University of Aberdeen, Fraser Noble Building, Aberdeen AB24 3UE, UK<br>${ }^{4}$ Institut für Anorganische und Physikalische Chemie, Leobener Str. NWII, D - 28359 Bremen, Germany<br>( ${ }^{*}$ Current address: NALCO Water, An Ecolab Company. Ir.G.Tjalmaweg 1, 2342 BV Oegstgeest, The Netherlands.)

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Figure S1: Isobaric phase diagrams at ambient pressure for a mixture of $\mathrm{C}_{2} \mathrm{C}_{2} \mathrm{imNTf}_{2}$ and octan-1-ol $\left(n-\mathrm{C}_{\mathrm{n}} \mathrm{OH}\right.$ with $\mathrm{n}=8$ ) (a) with $x_{\mathrm{IL}}$ as the mole fraction, and (b) with $w_{\mathrm{IL}}$ as the mass fraction of the IL (red symbols). For the sake of comparability, data from literature ${ }^{79}$ are shown (open symbols). In order to allow a direct view and a perception of analogies, data from prior work with $\mathrm{C}_{3} \mathrm{mimNTf}_{2}$ and $n$-alkyl alcohols are shown in black symbols. ${ }^{44}$ The lines are results from fitting the experimental data by equation (1) (solid line - ); equation (2) (dashed line - - ) and equation (3) (dashed dotted line - ..-..). The corresponding parameters are listed in Table 3. For data from literature $\left(\mathrm{C}_{3} \mathrm{mimNTf}_{2}\right)$ only the fits by eq 3 are shown.

## References (excerpt):

44. Shao, X. W.; Schröer, W.; Rathke, B., Liquid-Liquid Phase Behavior of Solutions of 1,3-Dimethylimidazolium- and 1-Methyl-3-propylimidazolium $\operatorname{Bis}\left((\right.$ trifluoromethyl $)$ sulphonyl)amide $\left(\mathrm{C}_{1,3} \operatorname{mimNTf}_{2}\right)$ in $n$-Alkyl Alcohols. J. Chem. Eng. Data 2014, 59, 225-233.
45. Domańska, U.; Rękawek, A.; Marciniak, A., Solubility of 1-Alkyl-3-ethylimidazolium-based Ionic Liquids in Water and 1-Octanol. J. Chem. Eng. Data 2008, 53, 1126-1132.
