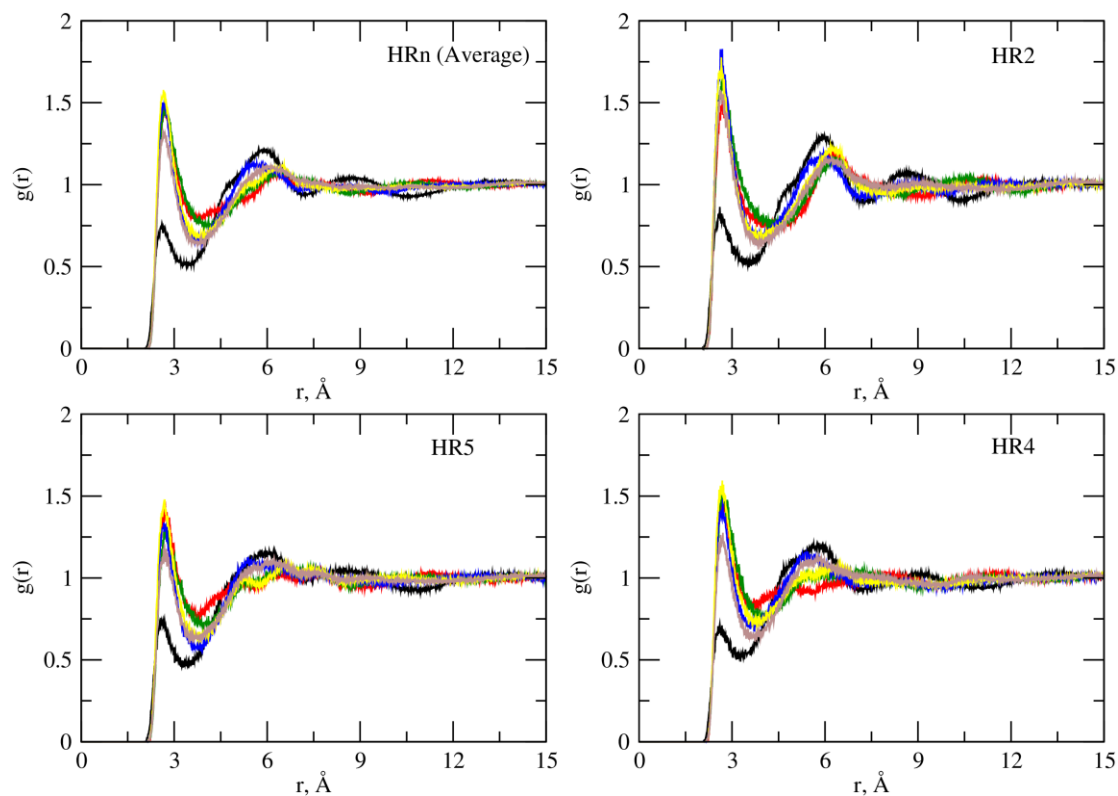


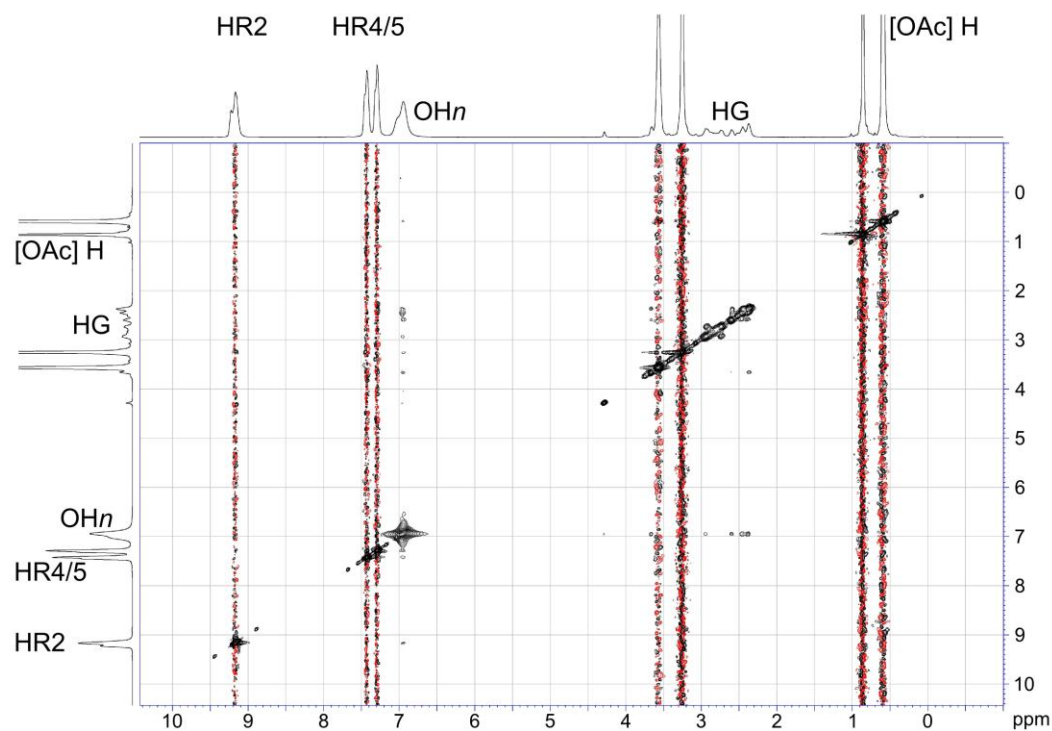
## Neutron Diffraction, NMR and Molecular Dynamics Study of Glucose Dissolved in the Ionic Liquid 1-Ethyl-3-methylimidazolium Acetate

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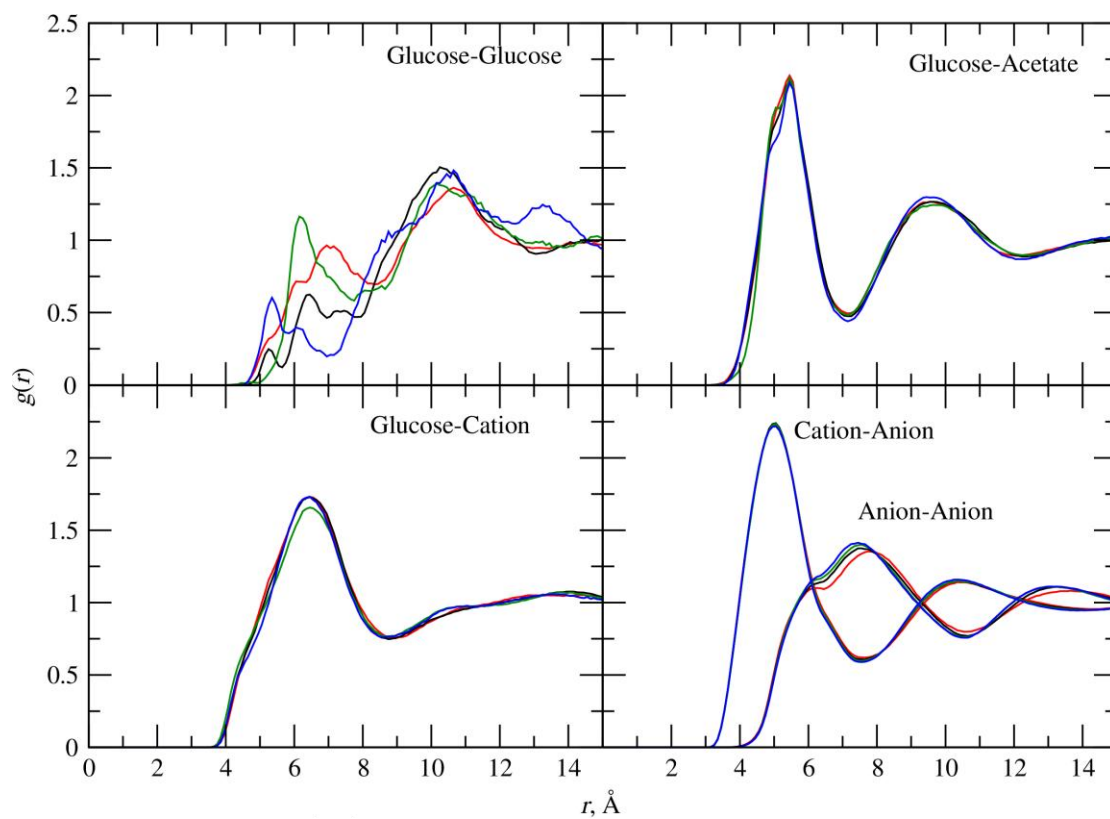
### Supporting Information



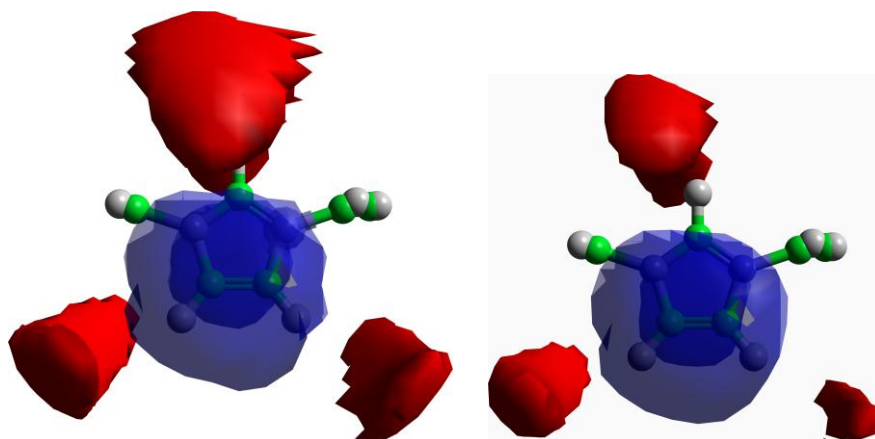
**Figure S1** Partial radial distribution functions between glucose oxygen atoms and aromatic protons of the [C<sub>2</sub>mim] cation in the 6:1 mole ratio system. Individual oxygen atoms are ring oxygen OG (black), O1 (green), O2 (blue), O3 (yellow), O4 (brown), and O6 (red).



**Figure S2** NOESY spectrum of fully protiated 6:1 mixture of  $[\text{C}_2\text{mim}][\text{OAc}]:\text{glucose}$ . The mixing time employed was 40 ms.



**Figure S3** Centre-of-mass RDFs between glucose molecules and ionic liquid ions for 4:1 (red), 6:1 (black), 8:1 (green) and 10:1 (blue) mole ratios of ionic liquid:glucose.



**Figure S4** Spatial distributions of anions (red) and cations (blue) around a central cation in the pure liquid (left) and 6:1 ionic liquid:glucose system (right). Isosurfaces are drawn to encompass six times the bulk density of anions and two times the bulk density of cations.