Supplementary Materials



Figure S1. Crystal morphology of the currently commercialized sucrose crystals recorded by using the video microscope.



Figure S2. PXRD patterns of sucrose crystals isolated from the MeOH extraction solution of *A. gigas* under a controlled solvent volume (3 mL) and BMImBF₄ anti-solvent concentration change conditions using crystallization techniques.



Figure S3. PXRD patterns of sucrose crystals produced from the MeOH extraction solution of *A. gigas* at a constant solvent volume of 3 mL under BMImPF₆ anti-solvent composition variation conditions using the crystallization method.



Figure S4. Video-microscope photographs of sucrose crystals obtained from the MeOH extraction solution of *A. gigas* (solvent volume of 3 mL) using, respectively, (**a**) BMImBF₄, (**b**) AEImBF₄, and (**c**) AAImBF₄ as anti-solvents (*A.* gigas extraction solution/ILs (1:1 v/v)).



Figure S5. DSC curves (heating rate: 10 °C/min) of sucrose crystals produced from the MeOH extraction solution of *A. gigas* at a constant solvent volume of 3 mL under BMImTFSI anti-solvent composition variation conditions using the crystallization method.



Figure S6. ¹⁹F-NMR spectrum of BMImPF₆ (solvent: D₂O).



Figure S7. ¹⁹F-NMR spectrum of sucrose crystals precipitated from BMImPF₆. (*A. gigas* extraction solution/ILs: 3 mL/3 mL (1:1 v/v), solvent: D₂O).