

Electronic Supplementary Information

“Dry Ionic Liquid” as a newcomer to “Dry Matter”

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METHODS

Hydrophobic fumed silica particle (HDK-H18, primary particle size:5-30 nm), the surface OH groups of which are modified with poly(dimethyl siloxane) by 75 %, was purchased from Wacker Asahikasei Silicone and used as received. Poly(tetrafluoro ethylene) (PTFE) powder (KTL-500F, ϕ :0.5 μ m) was kindly supplied by Kitamura Ltd and used as received. ILs ([emim][Tf₂N] (99%), [emim][TfO](99%), [bmim][I](>98%) and [ch][dhp]) were purchased from IoLi Tec GmbH and used as received. Their structures are given in Fig.S1. D-ILs were prepared by mixing ca. 7 g of an IL with different amounts of the hydrophobic particles in a blender (WARING J-SPEC Blender 7011 BUJ with a MC1 container (50 mL)) at 22500 rpm for 90s with two intervals of 10 s each to prevent the sample from overheat. DW was prepared by mixing HDK-H18 and deionized water in a blender (Vitamix Vita-prep3 with a 0.9L container) at a speed of 24000 rpm for 90s with two intervals of 10 s each. The feed ratio of the silica powder was varied from 1.0 to 20.0 wt% with the total amount kept constant (ca. 50 g). Among of the compositions tested, only one with 1.0 wt% silica failed to take in all the feed water as component of DW. Each sample was stored in a screw-capped polypropylene bottle. Morphology of D-ILs was observed with an optical microscope (Keyence, VHX-1000).

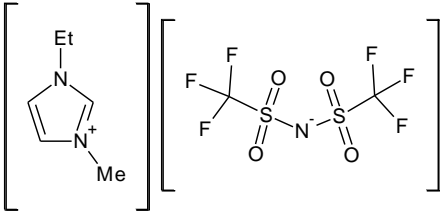
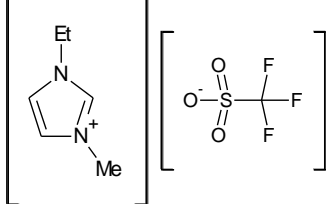
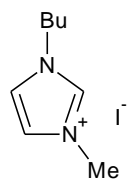
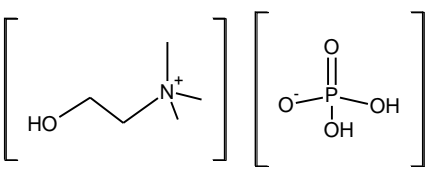
[emim][Tf ₂ N]	
[emim][TfO]	
[bmim]I	
[ch][dhp]	

Figure S1. Structure of ILs.