Electronic supplementary information

Ionic liquid microemulsions of 1-butyl-3-methylimidazolium hexafluorophosphate, *N,N*-dimethylformamide, and water

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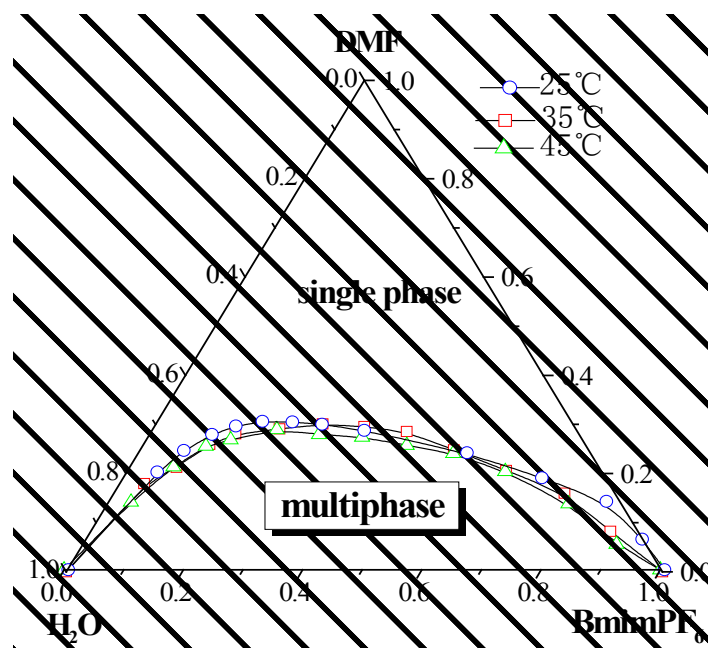
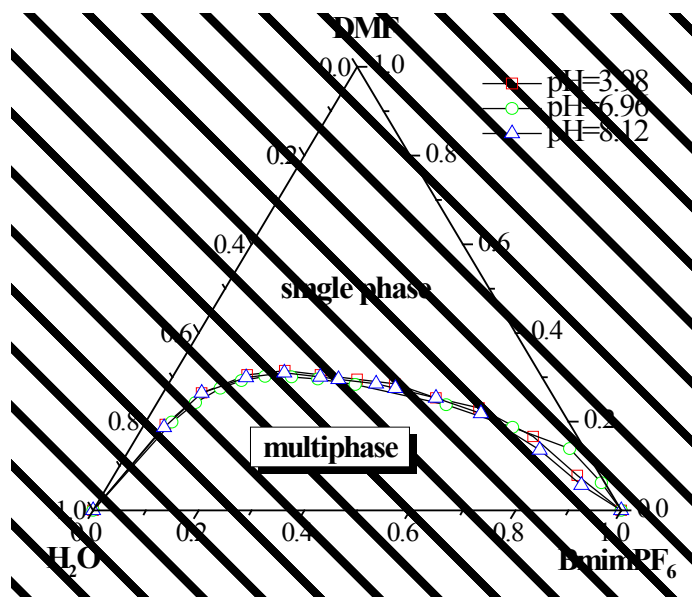**Fig. S1** Effect of temperature on the ternary phase diagram of bmimPF$_6$/DMF/H$_2$O system.

Fig. S2 Effect of pH on the ternary phase diagram of bmimPF$_6$/DMF/H$_2$O system.
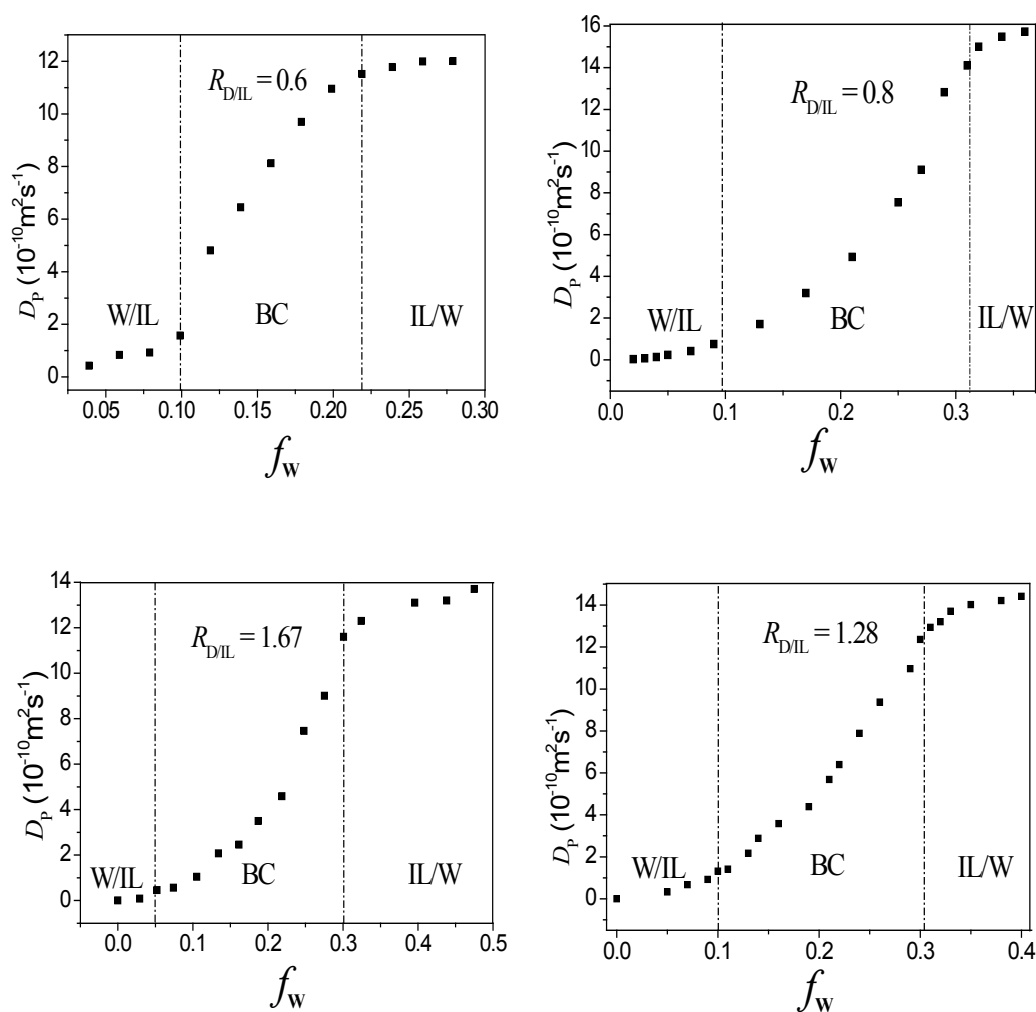

Fig. S3 Diffusion coefficient of K$_4$Fe(CN)$_6$ as a function of f_w at different $R_{D/IL}$ values as stated.
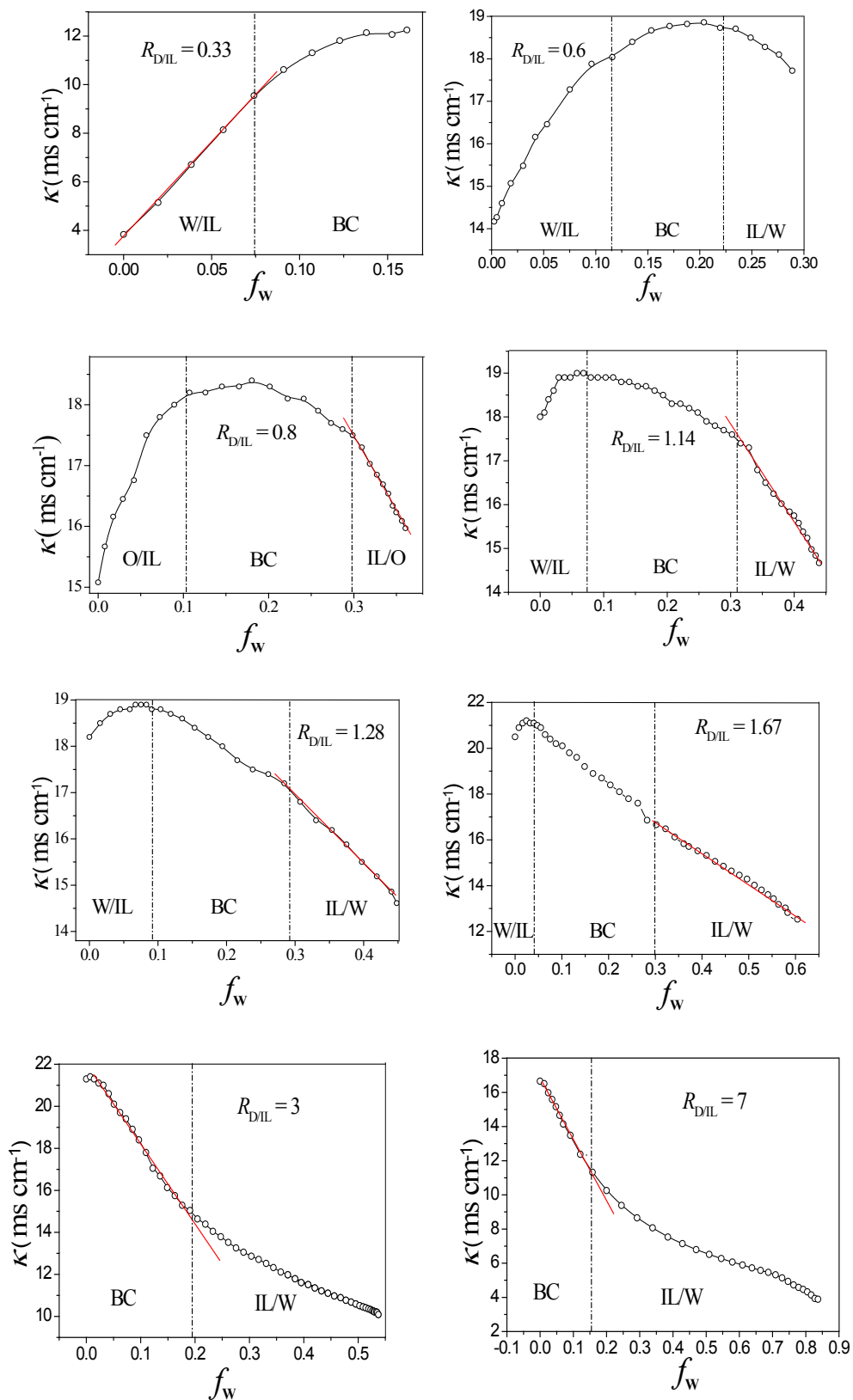
Fig. S4 Electric conductivity of the microemulsions as a function of f_w at different $R_{D/IL}$ values as stated.
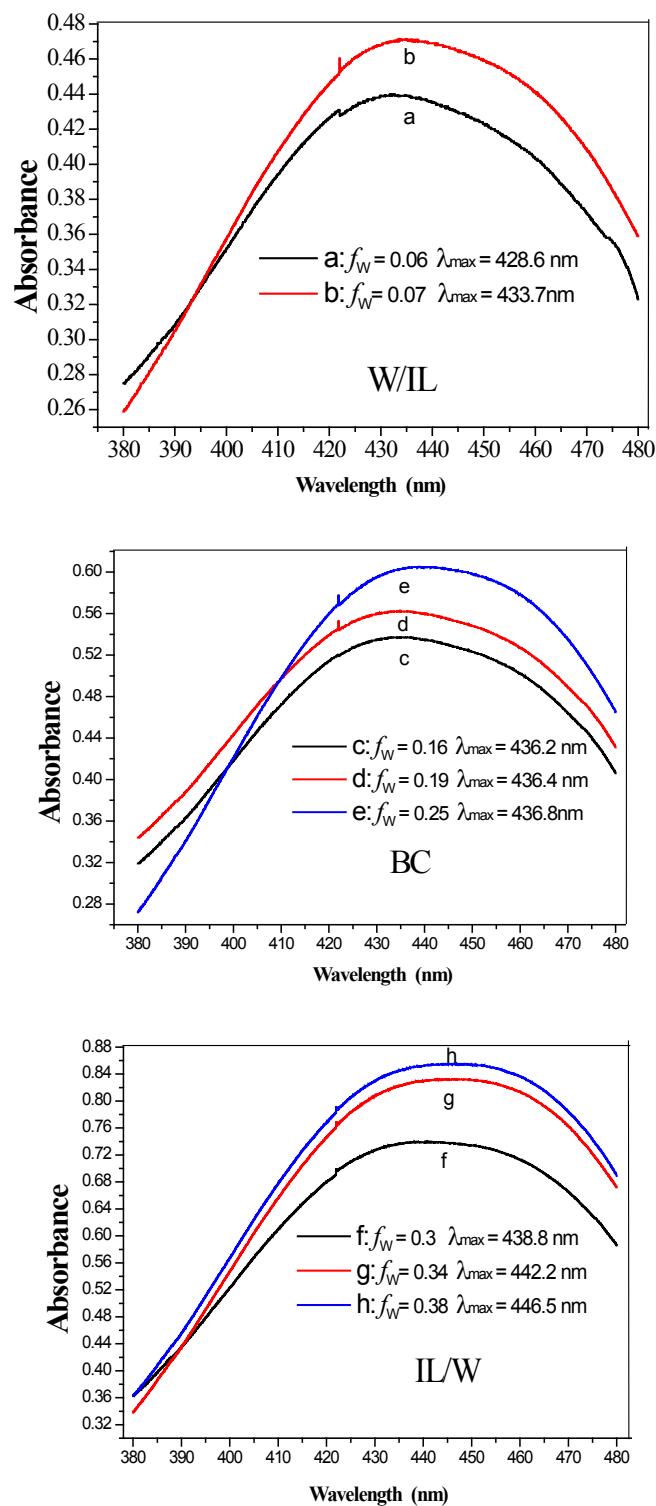
Fig. S5 The UV-vis absorption spectra of MO in bmimPF$_6$/DMF/H$_2$O microemulsion at $R_{D/IL} = 1$ with different water volume fraction f_W as stated, The MO concentration is 0.096 mmol·L^{-1}
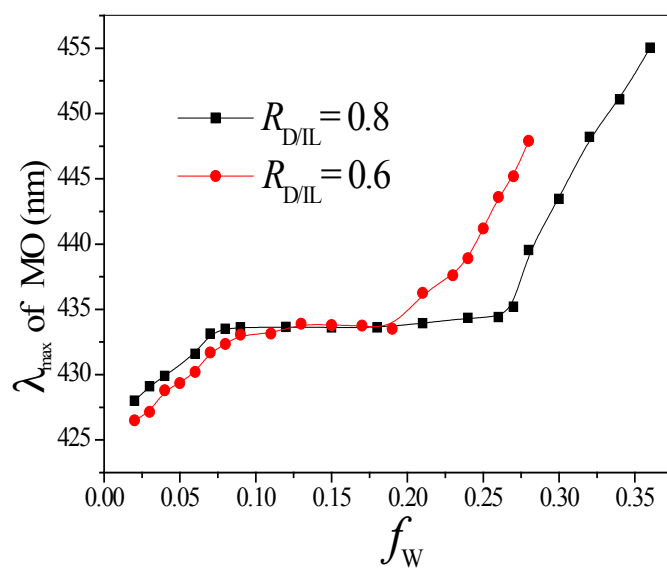
Fig. S6 λ_{max} of MO in bmimPF$_6$/DMF/H$_2$O microemulsion as a function of f_W at $R_{D/IL} = 0.6$ and 0.8. The MO concentration is 0.096 mmol·L^{-1}
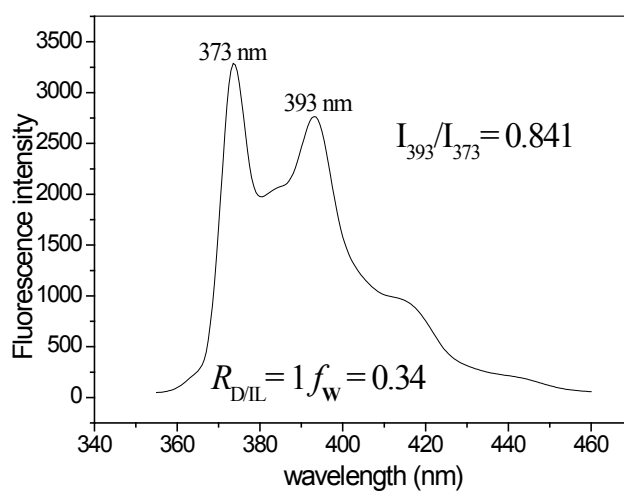

Fig. S7 Fluorescence emission spectrum of pyrene in the microemulsion with $R_{D/IL} = 1$ and $f_w = 0.34$.
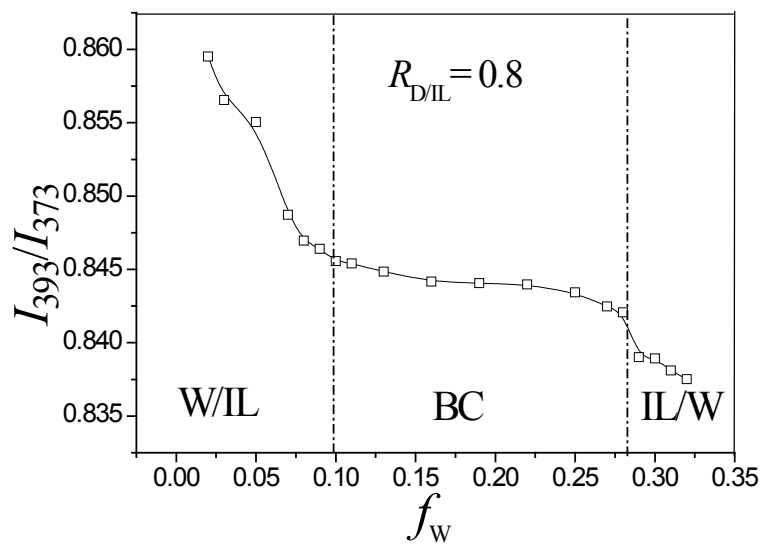
Fig. S8 Intensity ratio I_{393}/I_{373} of pyrene in bmimPF$_6$/DMF/H$_2$O microemulsions with $R_{D/IL} = 0.8$ as a function of f_w.