

SUPPLEMENTARY INFORMATION

Polyacrylic acid polymer modulates the UCST - type phase behavior of ionic liquid and water

Awanish Kumar, P. Madhusudhana Reddy and Pannuru Venkatesu*

Department of Chemistry, University of Delhi, Delhi – 110 007.

Refractive Index Setup.

Figure IS. Schematic representation of experimental set up to determine the critical coexisting curve using refractive index measurements.

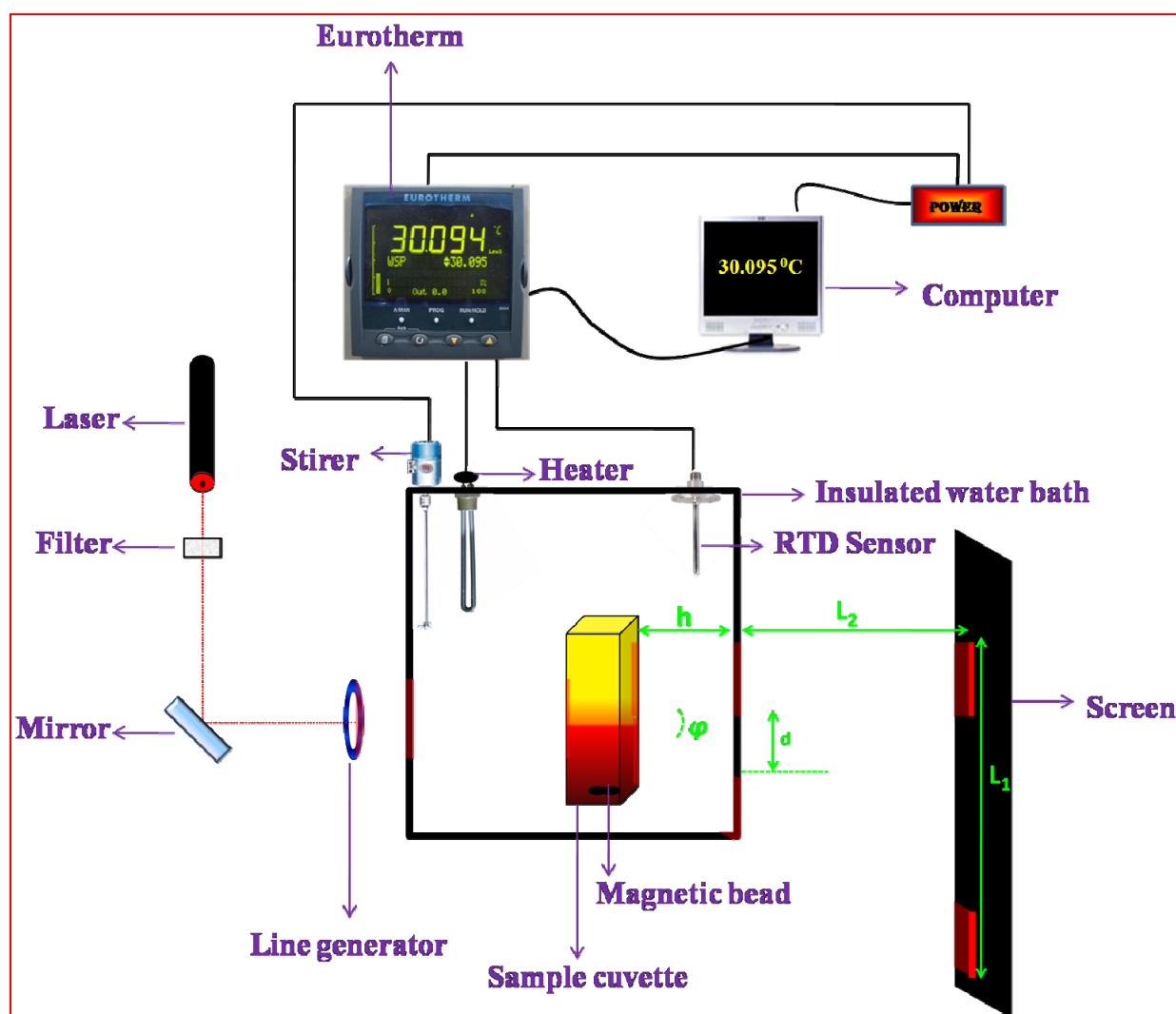


Table IS. Coexistence curve data for 1-Hexyl-3-methylimidazolium tetrafluoroborate and water with and without polyacrylic acid (PAA). The measured data are of the refractive indices of IL (n_1) and water rich phase (n_2), respectively, as a function of temperature (T).

0 mg/ml of PAA in ILW; $T_c=58.256\pm 0.002$ °C

T	n_1	n_2
50.796	1.39130	1.33208
51.249	1.39055	1.33194
51.678	1.38967	1.33250
52.322	1.38863	1.33334
53.170	1.38755	1.33467
53.723	1.38668	1.33556
54.574	1.38509	1.33717
55.250	1.38367	1.33868
56.115	1.38130	1.34121
56.803	1.37767	1.34338
57.427	1.37393	1.34619
57.836	1.37149	1.34865
57.984	1.37003	1.34988
58.103	1.36834	1.35112
58.158	1.36615	1.35141
58.181	1.36491	1.35193
58.208	1.36403	1.35316
58.219	1.36338	1.35262

58.238	1.36256	1.35395
58.256	1.36225	1.35414

0.5 mg/ml of PAA in ILW; $T_c=57.126\pm0.002$ °C

T	n₁	n₂
50.023	1.39190	1.33497
51.418	1.38937	1.33547
52.677	1.38703	1.33690
53.350	1.38558	1.33851
53.882	1.38395	1.33996
54.314	1.38287	1.34143
54.879	1.38108	1.34318
55.291	1.37963	1.34490
55.740	1.37837	1.34670
55.957	1.37729	1.34766
56.421	1.37566	1.35041
56.588	1.37439	1.35124
56.687	1.37313	1.35187
56.854	1.37205	1.35266
56.953	1.37026	1.35368
57.029	1.36767	1.35388
57.066	1.36592	1.35432
57.081	1.36589	1.35508
57.126	1.36502	1.35628

1.0 mg/ml of PAA in ILW; $T_c=56.084\pm0.002$ °C

T	n₁	n₂
50.043	1.38701	1.33291
51.008	1.38503	1.33415
52.019	1.38286	1.33672
52.608	1.38142	1.33852
52.973	1.38052	1.33960
53.548	1.37854	1.34159
54.058	1.37709	1.34357
54.489	1.37539	1.34510
54.908	1.37375	1.34681
55.150	1.37285	1.34806
55.459	1.37162	1.35033
55.689	1.37045	1.35197
55.898	1.36860	1.35422
55.945	1.36779	1.35464
55.985	1.36710	1.35495
56.054	1.36417	1.35652
56.028	1.36546	1.35615
56.055	1.36420	1.35722
56.084	1.36355	1.35809

1.5 mg/ml of PAA in ILW; $T_c=55.168\pm 0.002$ °C

T	n₁	n₂
50.628	1.38061	1.33592
51.265	1.37933	1.33697
52.077	1.37744	1.33858
52.686	1.37631	1.34067

53.075	1.37534	1.34200
53.558	1.37431	1.34409
54.016	1.37235	1.34633
54.188	1.37128	1.34712
54.262	1.37089	1.34793
54.452	1.36956	1.34870
54.656	1.36817	1.35042
54.888	1.36688	1.35243
54.954	1.36632	1.35333
55.041	1.36523	1.35436
55.083	1.36449	1.35496
55.118	1.36288	1.35545
55.15	1.36200	1.35615
55.158	1.36120	1.35648
55.162	1.36038	1.35677
55.168	1.35977	1.35699