Electronic Supplementary Information (ESI)

Effect of lithium salt on fluorescence quenching in glycerol: a comparison with ionic liquid/deep eutectic solvent

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Table S1: Quantitative comparison of parameters obtained from regression analysis of density (ρ) vs T (K) plots for different Li-salt added systems, i.e. LiCl-added 1 wt% water in glycerol (m_{LiCl} = 0.0 – 3.0 mol.kg^{-1}), LiCl-added ChCl:Urea (m_{LiCl} = 0.000 – 2.093 mol.kg^{-1}) and $LiTf_2N$ added [emim][Tf_2N] (x_{LiTf2N} = 0.00 – 0. 40) within the investigated range, 298.15 – 358.15 K. Standard deviations are given as ± in parenthesis.

1 wt% water in glycerol			**ChCl:Urea**			**[emim][Tf_2N]**		
m_{LiCl} **(mol.kg^{-1})**	ρ_o **(g.cm^{-3})**	**(-) a (K^{-1}) × 10^{-4}**	m_{LiCl} **(mol.kg^{-1})**	ρ_o **(g.cm^{-3})**	**(-) a (K^{-1}) × 10^{-4}**	x_{LiTf2N}	ρ_o **(g.cm^{-3})**	**(-) a (K^{-1}) × 10^{-4}**
0.0	1.46(±0.00_5)	6.78(±0.16)	0.000	1.38(±0.00_1)	6.22(±0.21)	0.00	1.79(±0.01)	9.20(±0.20)
0.5	1.47(±0.00_6)	6.74(±0.19)	0.419	1.40(±0.00_1)	6.40(±0.20)	0.05	1.78(±0.01)	8.40(±0.33)
1.0	1.48(±0.00_7)	6.69(±0.22)	0.832	1.40(±0.00_1)	6.21(±0.27)	0.10	1.79(±0.01)	8.40(±0.33)
1.5	1.48(±0.00_8)	6.64(±0.25)	1.256	1.40(±0.00_1)	6.17(±0.29)	0.20	1.83(±0.01)	8.60(±0.32)
2.0	1.49(±0.00_9)	6.60(±0.27)	1.675	1.41(±0.00_1)	6.17(±0.31)	0.30	1.87(±0.01)	8.87(±0.00_1)
2.5	1.50(±0.00_9)	6.56(±0.30)	2.093	1.42(±0.00_1)	6.10(±0.33)	0.40	1.91(±0.01)	9.07(±0.33)
3.0	1.50(±0.01)	6.53(±0.32)	-	-	-	-	-	-

Table S2: Quantitative comparison of parameters obtained from regression analysis of density (ρ) vs m_{LiCl} (mol.kg^{-1}) plots for LiCl added-1 wt% water in glycerol and LiCl added ChCl:Urea systems. Regression analysis shows the data is best fit according to the equation: $\rho = \rho_o + bm_{LiCl}$. Standard deviations are given as ± in parenthesis.

T (K)	**1 wt% water in glycerol**		**ChCl:Urea[19]**	
	ρ_o **(g.cm^{-3})**	**b (g^2.cm^{-3}.mol^{-1}) × 10^3**	ρ_o **(g.cm^{-3})**	**b (g^2.cm^{-3}.mol^{-1}) × 10^3**
298.15	1.26(±0.00$_1$)	16.70(±0.00$_1$)	1.19(±0.00$_1$)	18.20(±0.00$_2$)
313.15	1.25(±0.00$_1$)	17.20(±0.00$_1$)	1.18(±0.00$_1$)	18.20(±0.00$_2$)
328.15	1.24(±0.00$_1$)	17.50(±0.00$_1$)	1.18(±0.00$_1$)	19.00(±0.00$_2$)
343.15	1.23(±0.00$_1$)	17.40(±0.00$_1$)	1.17(±0.00$_1$)	18.90(±0.00$_2$)
358.15	1.22(±0.00$_1$)	17.20(±0.00$_1$)	1.16(±0.00$_1$)	18.90(±0.00$_2$)

Table S3: Parameters obtained from regression analysis of density (ρ) vs m_{LiCl} plots for $LiTf_2N$ added-[emim][Tf_2N]. Regression analysis shows the data is best fit according to the equation: $\rho = \rho_o + bx_{LiTf2N} + cx^2_{LiTf2N}$. Standard deviations are given as ± in parenthesis.

T (K)	**[emim][Tf$_2$N][20]**		
	ρ_o **(g.cm^{-3})**	**b (g.cm^{-3})**	**c (g.cm^{-3})**
298.15	1.52(±0.00$_1$)	0.26(±0.01)	0.15(±0.02)
313.15	1.50(±0.00$_1$)	0.26(±0.01)	0.14(±0.02)
328.15	1.49(±0.00$_1$)	0.27(±0.01)	0.10(±0.03)
343.15	1.47(±0.00$_1$)	0.28(±0.02)	0.08(±0.04)
358.15	1.46(±0.00$_1$)	0.28(±0.02)	0.08(±0.04)

Table S4: Recovered excited-state intensity decay parameters for double-exponential decay of pyrene (10 μM; excitation wavelength at 340 nm using nano LED source; emission wavelength collected at 373 nm) dissolved in the investigated system comprising of 1 wt% water in glycerol solution at varying concentration of LiCl in the temperature range 298.15 – 358.15 K. Error associated with decay times is $\leq\pm$ 5%. Decay times (τ) are in nanosecond (ns) and α are in %.

T (K) \ m_{LiCl} (mol.kg^{-1})		**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**
298.15	**τ_1 (α_1)**	1.7 (0.1)	1.1 (0.1)	1.3 (0.1)	95.3 (0.1)	1.6 (0.1)	1.8 (0.1)	2.3 (0.1)
	τ_2 (α_2)	241.9 (99.9)	241.1 (99.9)	239.3 (99.9)	234.3 (99.9)	228.3 (99.9)	226.3 (99.9)	220.6 (99.9)
	χ^2	1.10	1.12	1.10	1.11	1.14	1.13	1.10
313.15	**τ_1 (α_1)**	204.9 (1.6)	91.9 (0.2)	0.7 (0.6)	0.5 (0.6)	0.7 (0.5)	0.5 (3.2)	1.8 (0.5)
	τ_2 (α_2)	235.7 (98.4)	233.7 (99.8)	222.6 (99.4)	217.4 (99.4)	213.7 (99.5)	206.9 (96.8)	206.8 (99.5)
	χ^2	1.02	1.10	1.03	1.07	1.09	1.10	1.05
328.15	**τ_1 (α_1)**	1.9 (0.1)	1.9 (0.1)	1.3 (0.1)	1.6 (0.1)	1.0 (0.1)	1.0 (0.1)	1.4 (0.1)
	τ_2 (α_2)	216.9 (99.9)	210.2 (99.9)	205.0 (99.9)	202.7 (99.9)	199.1 (99.9)	194.7 (99.9)	192.7 (99.9)
	χ^2	1.06	1.04	1.10	1.07	1.03	1.08	1.02
343.15	**τ_1 (α_1)**	1.7 (0.5)	1.4 (0.7)	1.6 (0.1)	1.6 (0.1)	1.0 (0.5)	0.6 (1.0)	1.2 (0.6)
	τ_2 (α_2)	201.9 (99.5)	195.2 (99.3)	195.1 (99.9)	194.1 (99.9)	186.9 (99.5)	185.8 (99.0)	180.6 (99.4)
	χ^2	1.04	1.07	1.08	1.08	1.05	1.09	1.07
358.15	**τ_1 (α_1)**	2.1 (0.5)	83.7 (3.8)	1.6 (0.5)	80.6 (2.9)	0.8 (0.4)	1.2 (0.6)	0.8 (0.7)
	τ_2 (α_2)	189.8 (99.5)	187.6 (96.2)	178.4 (99.5)	178.5 (97.1)	170.2 (99.6)	170.4 (99.4)	167.2 (99.3)
	χ^2	1.05	1.12	1.11	1.14	1.08	1.01	1.10

Table S5: Recovered excited-state intensity double-exponential decay parameters for pyrene (10 μM; excitation wavelength at 340 nm using a nano LED source; emission collected at 373 nm) dissolved in the investigated system comprising of 1 wt% water in glycerol solution at varying concentrations of quencher (CH_3NO_2) and LiCl concentrations at different temperatures in the range 298.15 – 358.15 K. Error associated with decay times is $\leq\pm$ 5%. Decay times (τ) are in nanosecond (ns) and α are in %.

For T = 298.15 K

$[CH_3NO_2]$ (M) \ m_{LiCl} **(mol.kg⁻¹)**		**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**
0.00	**τ_1 (α_1)**	1.7 (0.9)	1.1 (0.5)	1.3 (0.4)	1.6 (0.9)	1.6 (0.4)	1.8 (1.4)	2.3 (0.9)
	τ_2 (α_2)	241.9 (99.1)	241.1 (99.5)	239.3 (99.5)	234.3 (99.1)	128.3 (99.6)	226.3 (98.6)	220.6 (99.1)
	χ^2	1.08	1.08	1.07	1.12	1.06	1.11	1.07
0.05	**τ_1 (α_1)**	1.9 (1.4)	1.5 (0.8)	2.0 (0.8)	1.9 (0.5)	2.3 (0.6)	0.8 (2.0)	3.0 (0.9)
	τ_2 (α_2)	164.0 (98.6)	178.2 (99.1)	178.4 (99.2)	191.8 (99.5)	196.0 (99.4)	192.7 (98.0)	195.7 (99.1)
	χ^2	1.15	1.10	1.11	1.08	1.10	1.15	1.09
0.11	**τ_1 (α_1)**	1.9 (1.9)	2.2 (1.2)	3.2 (1.2)	1.7 (0.9)	2.0 (1.0)	1.1 (2.2)	3.3 (1.3)
	τ_2 (α_2)	138.4 (98.1)	133.0 (98.8)	149.5 (98.8)	157.2 (99.1)	166.6 (99.0)	171.7 (97.8)	176.4 (98.7)
	χ^2	1.13	1.19	1.20	1.17	1.10	1.14	1.13
0.16	**τ_1 (α_1)**	1.8 (3.2)	1.9 (1.9)	2.7 (1.5)	1.9 (3.5)	1.2 (1.4)	0.8 (2.6)	3.2 (1.7)
	τ_2 (α_2)	89.0 (96.8)	103.7 (98.1)	123.6 (98.5)	133.4 (96.5)	144.3 (98.6)	148.8 (97.4)	159.4 (98.3)
	χ^2	1.17	1.12	1.16	1.16	1.19	1.14	1.16
0.21	**τ_1 (α_1)**	2.1 (4.6)	2.7 (2.8)	3.2 (2.6)	2.0 (4.2)	1.9 (1.8)	0.0 (100.0)	6.4 (2.5)
	τ_2 (α_2)	67.4 (95.4)	87.8 (97.2)	99.5 (97.4)	114.4 (95.8)	126.4 (98.2)	127.8 (0.0)	147.6 (97.5)
	χ^2	1.14	1.11	1.10	1.09	1.18	1.17	1.24
0.27	**τ_1 (α_1)**	2.1 (5.7)	1.1 (3.4)	0.1 (8.6)	1.3 (3.5)	1.6 (2.1)	0.3 (6.3)	1.5 (2.3)
	τ_2 (α_2)	54.1 (94.3)	73.1 (96.6)	82.0 (91.4)	100.0 (96.5)	109.9 (97.9)	114.1 (93.7)	131.0 (97.7)
	χ^2	1.18	1.13	1.05	1.08	1.13	1.12	1.21
0.32	**τ_1 (α_1)**	1.2 (7.2)	0.0 (99.7)	2.1 (3.8)	3.1 (2.8)	1.6 (2.5)	0.1 (16.9)	1.5 (2.9)
	τ_2 (α_2)	45.4 (92.8)	59.9 (0.3)	73.3 (96.2)	86.8 (97.2)	98.6 (97.5)	98.6 (83.1)	119.7 97.1

	χ^2	1.18	1.12	1.08	1.11	1.13	1.10	1.19
0.37	**τ_1 (α_1)**	0.5 (11.6)	0.1 (11.8)	0.1 (46.5)	1.0 (3.1)	2.1 (3.2)	0.0 (99.4)	0.2 (6.5)
	τ_2 (α_2)	37.4 (88.4)	51.5 (88.2)	60.2 (53.5)	77.4 (96.9)	88.5 (96.8)	91.9 (0.6)	107.4 (93.5)
	χ^2	1.15	1.08	1.09	1.13	1.10	1.07	1.09

For T = 313.15 K

m_{LiCl} (mol.kg^{-1}) / [CH_3NO_2] (M)		**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**
0.00	**τ_1 (α_1)**	0.8 (1.6)	0.8 (0.2)	0.7 (0.6)	0.5 (0.6)	0.7 (0.5)	0.5 (3.2)	1.8 (0.5)
	τ_2 (α_2)	235.7 (98.4)	233.7 (99.8)	222.6 (99.4)	217.4 (99.4)	213.7 (99.5)	206.9 (96.8)	206.8 (99.5)
	χ^2	1.08	1.10	1.03	1.07	1.09	1.10	1.05
0.05	**τ_1 (α_1)**	1.2 (11.5)	0.3 (2.4)	0.9 (1.1)	3.8 (0.5)	0.2 (0.8)	2.0 (0.68)	0.2 (2.00)
	τ_2 (α_2)	140.4 (88.5)	138.0 (97.6)	179.0 (98.9)	190.0 (99.5)	184.1 (99.2)	199.8 (99.3)	196.3 (98.0)
	χ^2	1.10	1.16	1.15	1.10	1.09	1.06	1.10
0.11	**τ_1 (α_1)**	5.4 (2.7)	1.3 (1.7)	0.6 (2.3)	0.4 (6.4)	0.2 (2.4)	0.2 (1.6)	0.2 (2.3)
	τ_2 (α_2)	63.0 (97.3)	71.4 (98.3)	97.2 (97.7)	142.6 (93.6)	126.1 (97.6)	154.9 (98.4)	166.6 (97.7)
	χ^2	1.16	1.12	1.20	1.09	1.90	1.16	1.09
0.16	**τ_1 (α_1)**	0.6 (4.0)	1.7 (2.7)	0.5 (4.0)	1.3 (1.6)	0.0 (34.3)	0.0 (7.1)	0.0 (100.0)
	τ_2 (α_2)	45.2 (96.0)	51.0 (97.3)	62.3 (96.0)	89.0 (98.4)	80.5 (65.7)	135.8 (92.9)	124.1 (0.0)
	χ^2	1.16	1.21	1.23	1.23	1.16	1.18	1.21
0.21	**τ_1 (α_1)**	0.5 (7.7)	0.3 (5.0)	0.9 (5.1)	0.6 (3.1)	0.1 (11.7)	1.0 (2.2)	0.2 (6.0)
	τ_2 (α_2)	34.0 (92.3)	37.3 (95.0)	51.9 (94.9)	63.4 (96.9)	65.3 (88.3)	112.6 (97.8)	97.9 (94.0)
	χ^2	1.15	1.39	1.35	1.34	1.25	1.21	1.23
0.27	**τ_1 (α_1)**	2.8 (6.7)	0.0 (96.4)	0.3 (10.0)	0.6 (4.0)	0.1 (11.8)	1.4 (3.4)	0.1 (21.1)
	τ_2 (α_2)	26.8 (93.3)	29.7 (0.6)	35.0 (90.0)	50.1 (96.0)	60.6 (88.2)	90.0 (96.6)	89.2 (78.9)
	χ^2	1.29	1.30	1.35	1.28	1.32	1.29	1.31
0.32	**τ_1 (α_1)**	0.4 (10.5)	0.5 (8.1)	0.6 (12.7)	0.9 (5.0)	0.1 (41.0)	0.4 (5.6)	0.1 (21.7)

	τ_2 (α_2)	22.5 (89.5)	25.3 (91.9)	31.7 (87.3)	43.9 (95.0)	43.9 (59.0)	62.3 (94.4)	78.2 (78.3)
	χ^2	1.33	1.46	1.23	1.30	1.13	1.25	1.30
0.37	τ_1 (α_1)	1.9 (8.7)	0.0 (14.8)	0.3 (13.7)	0.5 (7.0)	0.0 (99.0)	0.3 (6.4)	0.1 (26.1)
	τ_2 (α_2)	18.3 (91.3)	19.1 (85.2)	28.5 (86.3)	34.4 (93.0)	40.5 (1.0)	55.4 (93.6)	58.1 (73.9)
	χ^2	1.24	1.32	1.24	1.30	1.36	1.22	1.25

For T = 328.15 K

[CH_3NO_2] (M) \ m_{LiCl} **(mol.kg^{-1})**		**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**
0.00	τ_1 (α_1)	1.9 (0.6)	1.9 (0.3)	1.3 (0.4)	1.6 (0.5)	1.0 (1.1)	1.0 (0.4)	1.4 (0.7)
	τ_2 (α_2)	216.9 (99.4)	210.2 (99.7)	205.0 (99.6)	202.7 (99.5)	199.1 (98.9)	194.6 (99.6)	192.7 (99.3)
	χ^2	1.06	1.04	1.10	1.07	1.03	1.08	1.02
0.05	τ_1 (α_1)	2.6 (2.6)	0.2 (3.0)	1.5 (1.3)	2.4 (1.5)	1.5 (2.1)	1.0 (1.2)	1.2 (1.3)
	τ_2 (α_2)	56.7 (97.4)	69.9 (97.0)	72.4 (98.7)	87.4 (98.5)	94.3 (97.9)	113.7 (98.8)	119.7 (98.7)
	χ^2	1.10	1.02	1.06	1.12	1.05	1.03	1.06
0.11	τ_1 (α_1)	1.7 (4.4)	0.8 (2.5)	1.4 (2.8)	1.4 (2.9)	0.2 (5.1)	2.6 (2.1)	1.0 (2.3)
	τ_2 (α_2)	29.3 (95.6)	41.4 (97.5)	43.6 (97.2)	51.4 (97.1)	62.8 (94.9)	71.3 (97.9)	87.2 (97.7)
	χ^2	1.11	1.11	1.09	1.11	1.09	1.06	1.03
0.16	τ_1 (α_1)	2.2 (7.5)	1.2 (4.5)	1.5 (4.0)	1.7 (3.6)	1.7 (100.0)	3.1 (3.2)	0.8 (3.0)
	τ_2 (α_2)	20.8 (92.5)	27.2 (95.5)	29.6 (96.0)	36.0 (96.4)	44.1 (0.0)	53.6 (96.8)	66.6 (97.0)
	χ^2	1.07	1.14	1.16	1.01	1.06	1.08	1.10
0.21	τ_1 (α_1)	1.9 (9.9)	1.4 (8.1)	1.4 (5.3)	1.2 (5.3)	0.0 (19.2)	1.1 (4.3)	0.6 (4.7)
	τ_2 (α_2)	15.7 (90.1)	20.3 (91.9)	21.9 (94.7)	27.7 (94.7)	33.4 (80.8)	41.5 (95.7)	51.0 (95.3)
	χ^2	1.15	1.10	1.20	1.15	1.11	1.09	1.13
0.27	τ_1 (α_1)	1.6 (10.7)	1.0 (9.3)	1.5 (6.7)	1.3 (6.4)	0.0 (99.9)	2.4 (5.3)	1.1 (5.0)
	τ_2 (α_2)	12.35 (89.3)	16.08 (90.7)	18.67 (93.3)	22.18 (93.6)	27.41 (0.1)	33.95 (94.7)	42.48 (95.0)
	χ^2	1.11	1.11	1.18	1.18	1.08	1.10	1.13

0.32	τ_1 (α_1)	1.6 (13.3)	0.6 (11.0)	0.9 (9.2)	1.9 (8.6)	0.2 (16.3)	1.5 (5.8)	0.8 (5.9)
	τ_2 (α_2)	10.0 (86.7)	13.4 (89.0)	14.4 (90.8)	8.1 (91.4)	22.3 (83.7)	28.1 (94.2)	35.1 (94.1)
	χ^2	1.09	1.17	1.18	1.17	1.11	1.10	1.14
0.37	τ_1 (α_1)	1.5 (15.3)	0.4 (16.3)	0.7 (11.6)	0.4 (15.7)	0.9 (57.5)	1.3 (6.9)	0.7 (7.4)
	τ_2 (α_2)	8.7 (84.7)	10.8 (83.7)	12.5 (88.4)	15.3 (84.3)	17.8 (42.5)	24.2 (93.1)	29.9 (92.6)
	χ^2	1.07	1.17	1.17	1.15	1.06	1.15	1.16

For T = 343.15 K

[CH_3NO_2] (M) \ m_{LiCl} (mol.kg^{-1})		0.0	0.5	1.0	1.5	2.0	2.5	3.0
0.00	τ_1 (α_1)	1.7 (0.5)	1.4 (0.7)	1.6 (0.4)	1.4 (0.6)	1.0 (0.4)	0.6 (1.0)	1.2 (0.6)
	τ_2 (α_2)	201.9 (99.5)	195.2 (99.3)	194.1 (99.6)	188.2 (99.4)	186.9 (99.6)	185.8 (99.0)	180.5 (99.4)
	χ^2	1.04	1.07	1.08	1.06	1.05	1.09	1.07
0.05	τ_1 (α_1)	2.2 (4.4)	1.8 (4.3)	0.5 (5.0)	1.4 (2.3)	0.8 (2.0)	0.1 (8.6)	0.9 (1.9)
	τ_2 (α_2)	32.1 (95.6)	36.8 (95.7)	45.6 (95.0)	54.8 (97.7)	61.8 (98.0)	69.0 (91.4)	84.4 (98.1)
	χ^2	1.18	1.05	1.07	1.03	1.04	1.09	1.04
0.11	τ_1 (α_1)	1.4 (6.2)	0.9 (8.3)	1.0 (6.4)	0.3 (6.3)	0.2 (10.0)	0.5 (6.5)	2.0 (3.2)
	τ_2 (α_2)	19.4 (93.8)	19.6 (91.7)	22.9 (93.6)	28.3 (93.7)	34.6 (90.0)	42.6 (93.5)	49.3 (96.8)
	χ^2	1.16	1.08	1.07	1.09	1.06	1.05	1.05
0.16	τ_1 (α_1)	1.6 (12.5)	0.7 (12.3)	1.1 (10.3)	0.7 (7.6)	0.5 (7.1)	0.2 (14.2)	1.5 (4.2)
	τ_2 (α_2)	10.8 (87.5)	12.3 (87.7)	15.2 (89.7)	19.4 (92.4)	25.9 (92.9)	85.8 (85.8)	35.2 (95.8)
	χ^2	1.12	1.11	1.14	1.16	1.07	1.10	1.08
0.21	τ_1 (α_1)	0.9 (11.5)	0.6 (16.7)	0.9 (13.2)	0.7 (10.7)	0.1 (21.3)	0.4 (14.2)	0.5 (7.9)
	τ_2 (α_2)	8.1 (88.5)	9.2 (83.3)	11.1 (86.8)	14.9 (89.3)	19.7 (78.7)	22.4 (85.8)	25.7 (92.1)
	χ^2	1.07	1.13	1.14	1.12	1.14	1.13	1.09
0.27	τ_1 (α_1)	0.9 (17.0)	0.4 (22.7)	0.2 (36.9)	0.3 (18.2)	0.1 (29.5)	0.1 (71.9)	0.6 (9.0)
	τ_2 (α_2)	6.2 (83.0)	7.2 (77.3)	8.1 (63.1)	12.3 (81.8)	15.0 (70.5)	17.1 (71.9)	21.3 (91.0)

	χ^2	1.10	1.11	1.06	1.10	1.13	1.13	1.08
0.32	**τ_1 (α_1)**	0.5 (20.6)	0.3 (30.3)	0.1 (50.5)	0.2 (28.2)	0.0 (100.0)	0.0 (99.9)	0.1 (34.8)
	τ_2 (α_2)	5.0 (79.4)	5.7 (69.7)	6.7 (49.5)	9.2 (71.8)	12.0 (0.0)	13.6 (0.1)	19.0 (65.2)
	χ^2	1.07	1.14	1.11	1.13	1.12	1.09	1.10
0.37	**τ_1 (α_1)**	0.5 (20.2)	0.3 (31.8)	0.0 (99.0)	0.0 (100.0)	0.0 (100.0)	0.0 (100.0)	0.0 (100.0)
	τ_2 (α_2)	4.1 (79.8)	5.0 (68.2)	5.4 (0.1)	7.8 (0.0)	10.4 (0.0)	11.3 (0.0)	15.4 (0.0)
	χ^2	1.12	1.15	1.09	1.09	1.06	1.14	1.09

For T = 358.15 K

m_{LiCl} **(mol.kg^{-1})** / **[CH_3NO_2] (M)**		**0.0**	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**
0.00	**τ_1 (α_1)**	2.4 (0.5)	83.1 (3.8)	1.6 (0.5)	80.6 (3.0)	0.8 (0.4)	1.2 (0.6)	0.8 (0.7)
	τ_2 (α_2)	189.8 (99.5)	187.6 (96.2)	178.4 (99.5)	178.5 (97.0)	170.2 (99.6)	170.4 (99.4)	167.2 (99.3)
	χ^2	1.05	1.12	1.11	1.14	1.08	1.01	1.10
0.05	**τ_1 (α_1)**	2.5 (4.5)	1.9 (4.1)	1.5 (3.7)	1.4 (2.5)	0.5 (3.8)	0.8 (3.0)	0.6 (3.8)
	τ_2 (α_2)	23.4 (95.5)	24.4 (95.9)	26.7 (96.3)	31.9 (97.5)	32.3 (96.2)	41.7 (97.0)	48.6 (96.2)
	χ^2	1.16	1.11	1.11	1.30	1.05	1.01	1.06
0.11	**τ_1 (α_1)**	1.4 (9.5)	0.8 (8.9)	1.0 (7.7)	1.3 (5.6)	0.9 (8.0)	0.4 (7.1)	0.5 (6.9)
	τ_2 (α_2)	9.6 (90.5)	11.4 (91.1)	13.1 (92.3)	16.2 (94.4)	18.4 (92.0)	23.6 (92.9)	28.0 (93.1)
	χ^2	1.19	1.12	1.10	1.08	1.12	1.04	1.04
0.16	**τ_1 (α_1)**	0.7 (11.4)	1.1 (13.1)	0.8 (10.8)	1.2 (9.2)	0.2 (15.8)	0.1 (23.5)	0.1 (40.1)
	τ_2 (α_2)	5.9 (88.6)	7.4 (86.9)	8.3 (89.2)	10.8 (90.8)	11.3 (84.2)	15.4 (76.5)	17.9 (59.9)
	χ^2	1.15	1.12	1.10	1.05	1.03	1.03	1.03
0.21	**τ_1 (α_1)**	1.3 (23.8)	0.6 (16.6)	0.4 (16.1)	1.2 (16.1)	0.2 (23.0)	0.1 (37.1)	0.5 (15.7)
	τ_2 (α_2)	4.9 (76.2)	5.2 (83.4)	6.2 (83.9)	8.1 (83.9)	8.3 (77.0)	13.0 (62.9)	14.5 (84.3)
	χ^2	1.08	1.15	1.13	1.08	1.13	1.00	1.06
0.27	**τ_1 (α_1)**	1.0 (19.2)	0.4 (21.9)	0.1 (100.0)	0.4 (15.1)	0.3 (22.3)	0.1 (40.9)	0.1 (41.4)

	τ_2 (α_2)	3.4 (80.8)	4.0 (78.1)	4.5 (0.0)	6.2 (84.9)	6.8 (77.7)	9.8 (59.1)	11.8 (58.6)
	χ^2	1.15	1.12	1.11	1.09	1.10	1.06	1.05
0.32	τ_1 (α_1)	0.9 (32.9)	0.2 (32.5)	0.2 (28.9)	0.8 (23.0)	0.2 (42.0)	0.2 (38.6)	0.0 (100.0)
	τ_2 (α_2)	3.13 (67.1)	3.39 (67.5)	3.81 (71.1)	5.42 (77.0)	5.53 (58.0)	7.70 (61.4)	9.69 (0.0)
	χ^2	1.07	1.13	1.16	1.11	1.08	1.08	1.06
0.37	τ_1 (α_1)	0.4 (29.3)	0.2 (39.5)	0.2 (40.3)	0.4 (29.2)	0.1 (100.0)	0.1 (100.0)	0.1 (100.0)
	τ_2 (α_2)	2.3 (70.4)	2.9 (60.5)	3.3 (59.7)	4.3 (70.8)	4.5 (0.0)	6.1 (0.0)	8.4 (0.0)
	χ^2	1.07	1.15	1.16	1.07	1.07	1.07	1.03

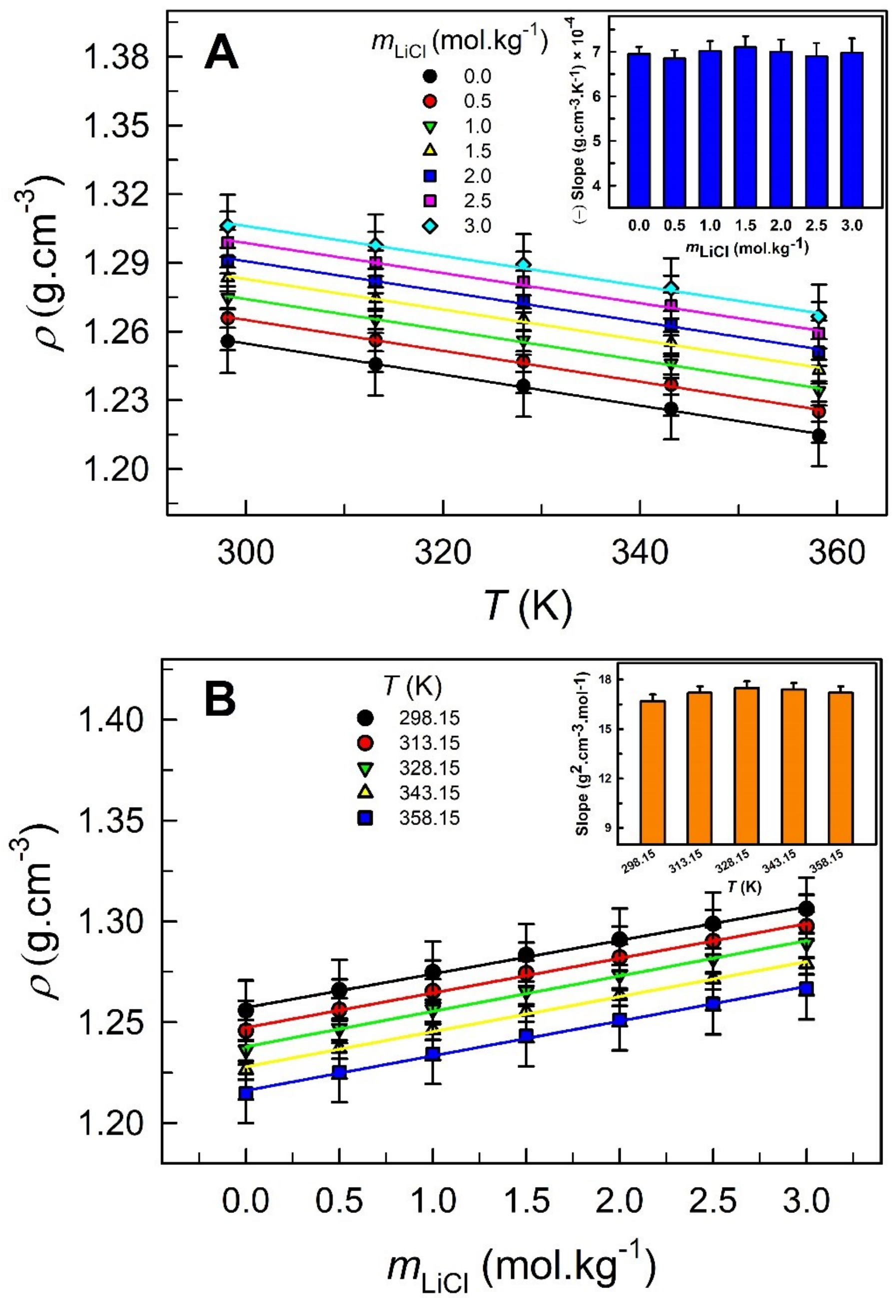

Fig. S1**:** Plots of density (ρ) vs temperature (panel A) at different concentrations of LiCl and density (ρ) vs m_{LiCl} (panel B) at different temperatures in the range 298.15 – 358.15 K for 1 wt% water in glycerol system. Error associated with ρ is <0.2%.