Electronic Supplementary Information

Complex formation of nickel(II) with dimethyl sulfoxide, methanol, and acetonitrile in a $TFSA^-$–based ionic liquid of $[C_2mim][TFSA]$

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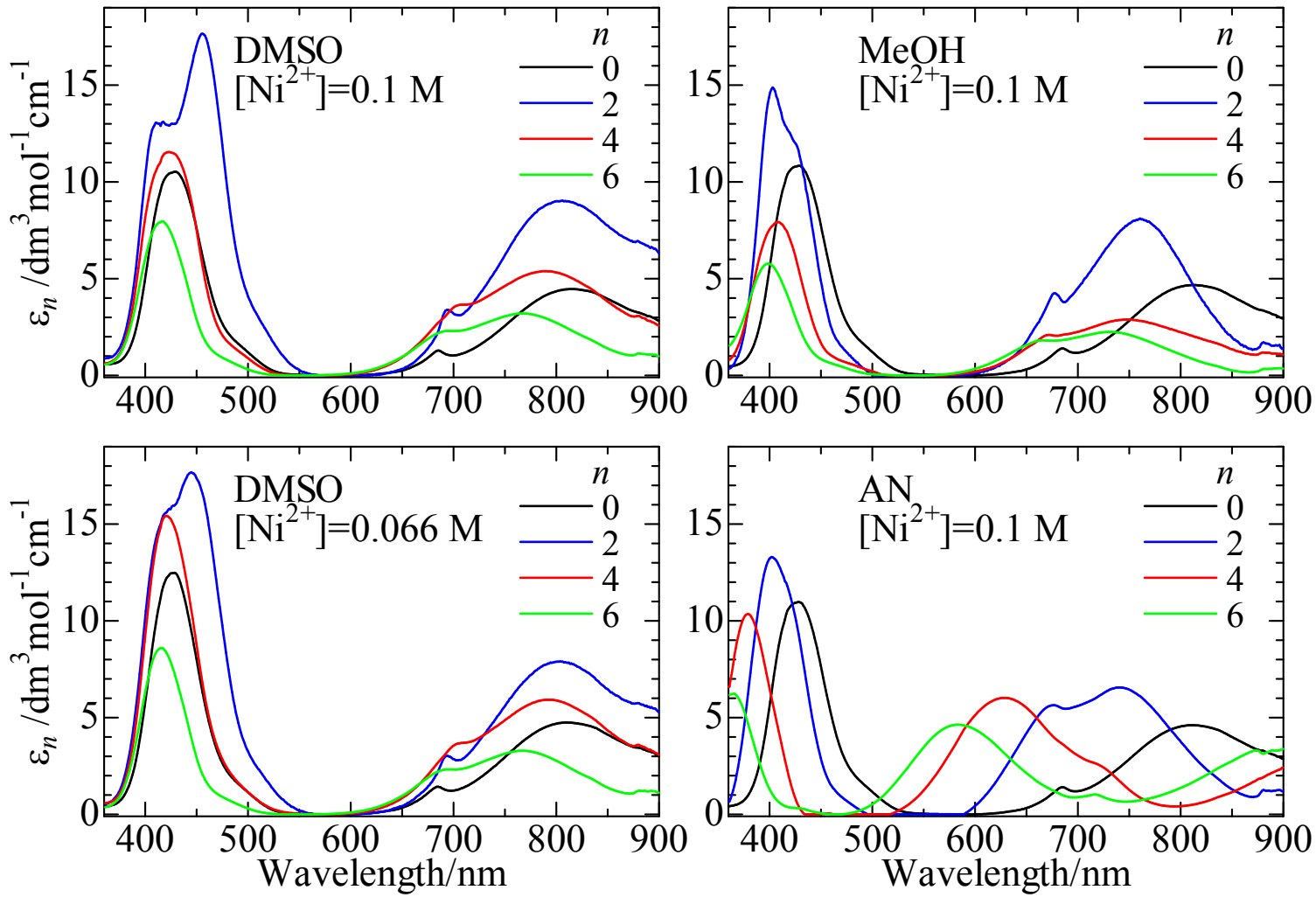

Fig. S1 Spectra of ε_n for $[Ni(ml)_n]$ complexes with n = 0, 2, 4, and 6 obtained from fits on the UV–visible spectra for $Ni(TFSA)_2$–$[C_2mim][TFSA]$ solutions with DMSO, MeOH, and AN. M represents the units of mol dm^{-3}.

Table S1 Overall stability constants, $\log(\beta_n\ \mathrm{mol}^{-n}\ \mathrm{dm}^{3n})$ of $[Ni(dmso)_n]$, $[Ni(meoh)_n]$, and $[Ni(an)_n]$ in $[C_2mim][TFSA]$ solutions at 30.0, 35.0, 40.0, and 45.0°C.[a]

	$[Ni(dmso)_n]$	$[Ni(meoh)_n]$	$[Ni(an)_n]$
	$[Ni^{2+}] = 0.1000$ mol dm^{-3}	$[Ni^{2+}] = 0.1000$ mol dm^{-3}	$[Ni^{2+}] = 0.1000$ mol dm^{-3}
30.0°C			
$\log\beta_2$	8.37(58)	3.67(3)	5.55(2)
$\log\beta_4$	16.94(1.16)	7.83(5)	10.25(3)
$\log\beta_6$	24.42(1.74)	11.15(7)	13.87(4)
35.0°C			
$\log\beta_2$	8.30(54)	3.48(3)	5.40(2)
$\log\beta_4$	16.83(1.08)	7.49(5)	9.95(3)
$\log\beta_6$	24.24(1.63)	10.64(6)	13.42(4)
40.0°C			
$\log\beta_2$	8.08(45)	3.38(3)	5.23(2)
$\log\beta_4$	16.39(89)	7.23(5)	9.61(3)
$\log\beta_6$	23.65(1.34)	10.28(6)	12.92(4)
45.0°C			
$\log\beta_2$	7.65(31)	3.22(3)	5.07(2)
$\log\beta_4$	15.54(62)	7.02(5)	9.30(3)
$\log\beta_6$	22.43(93)	9.93(6)	12.47(3)

[a]Values in parentheses are standard deviations.

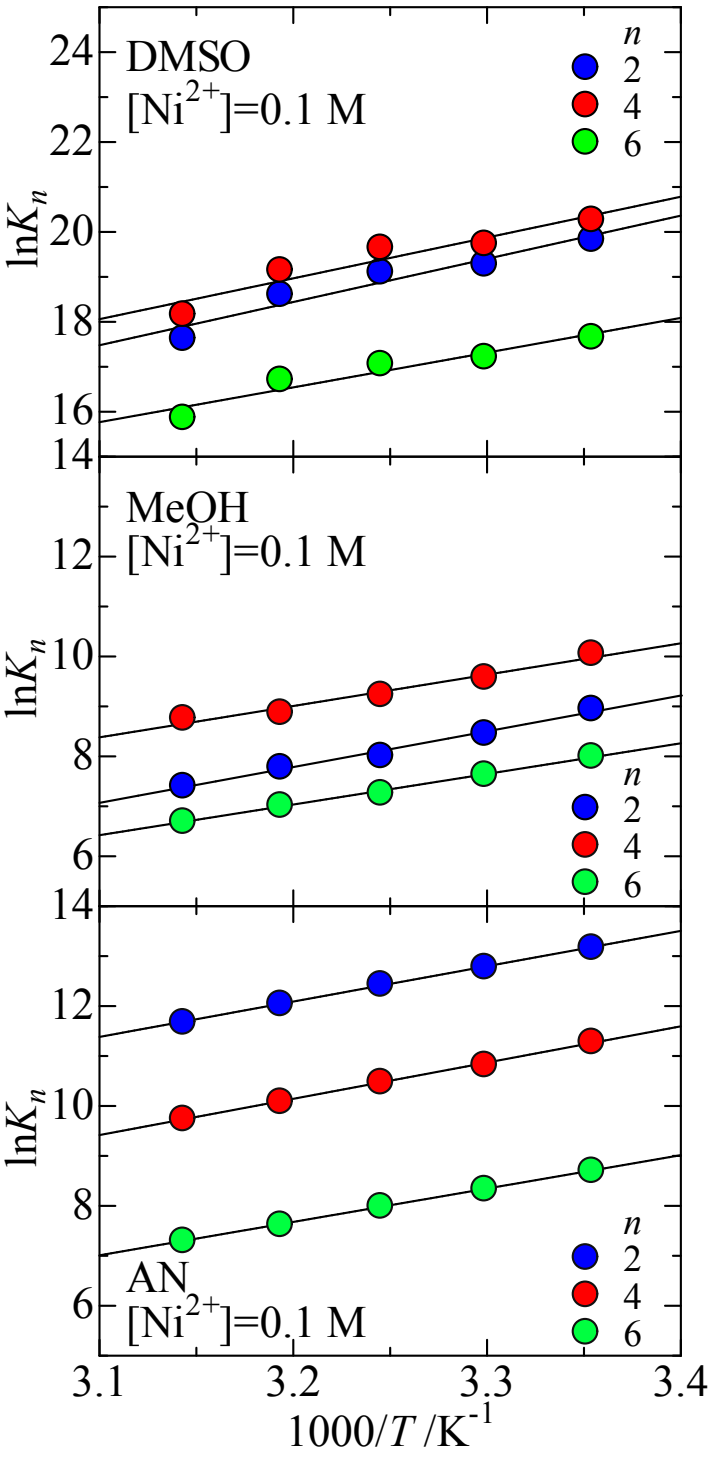

Fig. S2 van't Hoff plots for stepwise stability constants of $[Ni(dmso)_n]$, $[Ni(meoh)_n]$, and $[Ni(an)_n]$ complexes in $[C_2mim][TFSA]$ solutions. M represents the units of mol dm^{-3}.