Electronic supplementary information for

Electron-deficient Acene-based Liquid Crystals: Dialkoxydicyanopyrazinoquinoxalines

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1. UV-Vis spectra of 1a and 1c

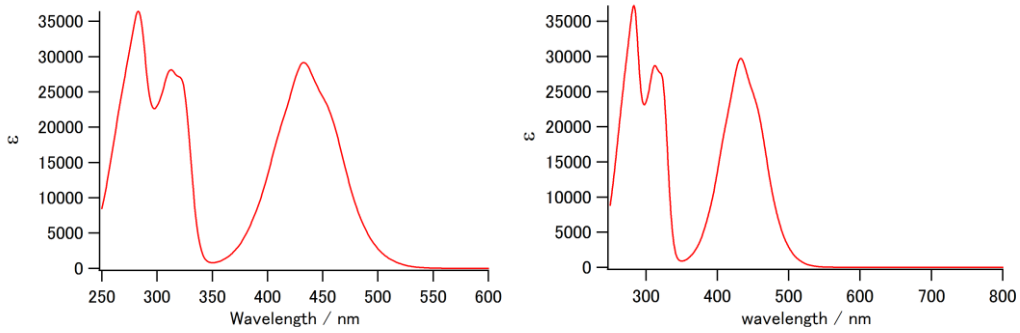

Figure S1 UV-Vis spectra of **1a**(left) and **1c** (right) in CH_2Cl_2.

2. Redox potentials of 1 and cyclic voltammogram of 1b

Table S1 Redox potential of **1a-e**[a]

Compd	$E_{red1,}$ V^{-1}	$E_{red2,}$ V^{-1}	$E_{ox,}$ V^{-1}	LUMO[b], eV^{-1}	HOMO[c], eV^{-1}
1a[d]	–0.11	–0.87	1.39	–4.12	–5.26
1b[d]	–0.11	–0.76	1.40	–4.12	–5.36
1c[d]	–0.10	–0.87	1.41	–4.15	–5.27
1d[e, S1]	–0.03	–0.87			
1e[e, S1]	–0.27	–0.98			

a: Measured in CH_2Cl_2 containing 0.1M Bu_4NBF_4. b: $E_{LUMO} = -[4.8 - E_{1/2,\ Fc/Fc+} + E_{red,\ onset}]$[S2]; c: $E_{HOMO} = -(4.8 - E_{1/2,\ Fc/Fc+} + E_{ox,\ onset})$; d: vs Ag/AgCl ; e: vs SCE

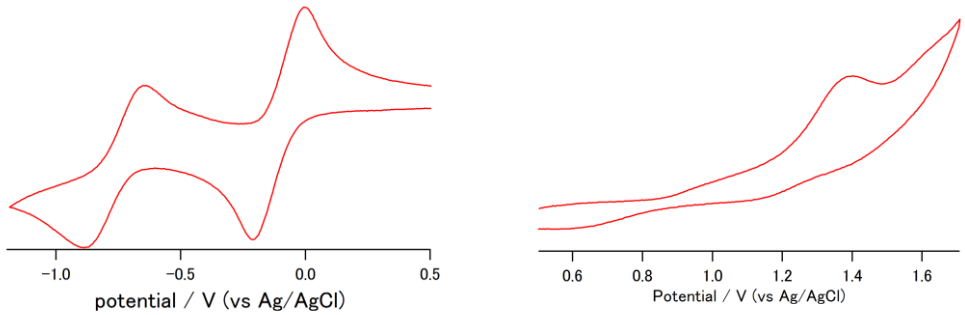

Figure S2 Cyclic voltammograms of **1b**.

3. XRD patterns and schematic representation of molecular arrangements of 1b

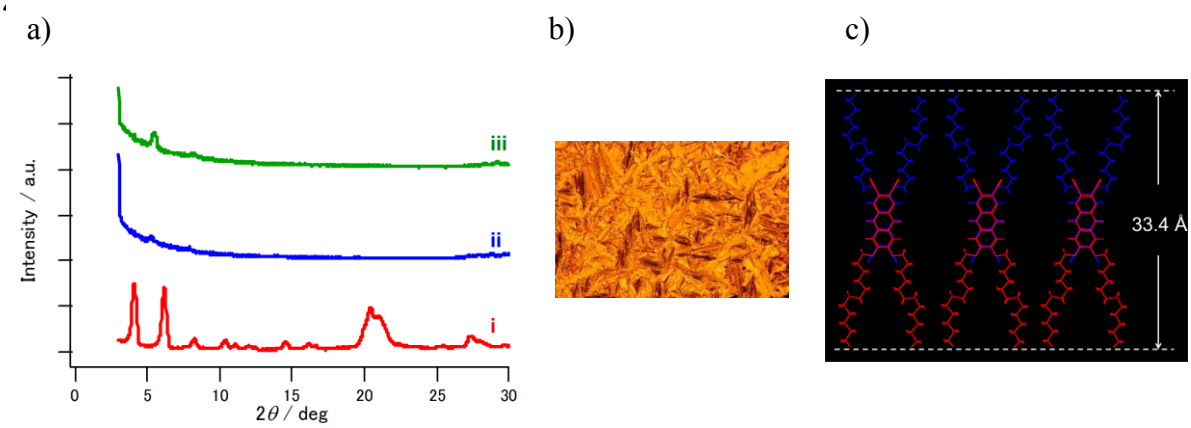

Figure S3 Molecular orientations of **1b** in solid and SmA phases. a) Temperature dependent XRD patterns of as-grown solid at 303 K (i), SmA phase at 438 K (ii), and solid phase after the SmA phase at 303 K (iii). b) Polarized optical microscope image of SmA phase of molecule **1b**. c) Schematic representation of possible molecular arrangements SmA phase of **1b**.

4. Polarized optical microscope images of 1c in heating and cooling process

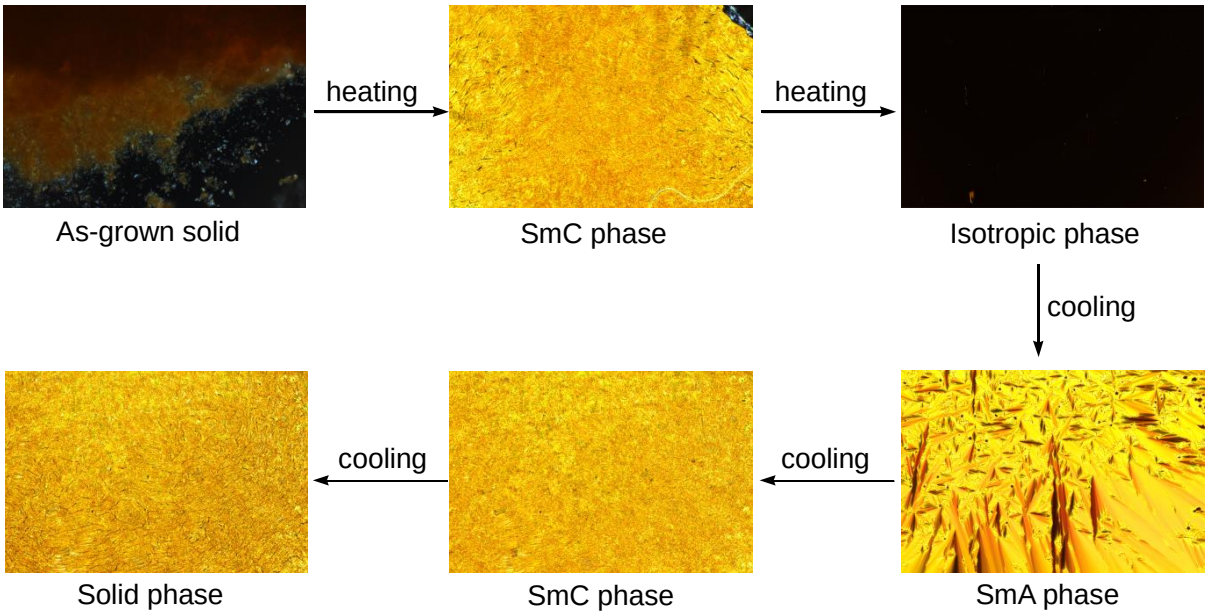

Figure S4 Polarized optical microscope images of **1c** in heating and cooling process.

5. ^{1}H and ^{13}C NMR spectra of 1a-c

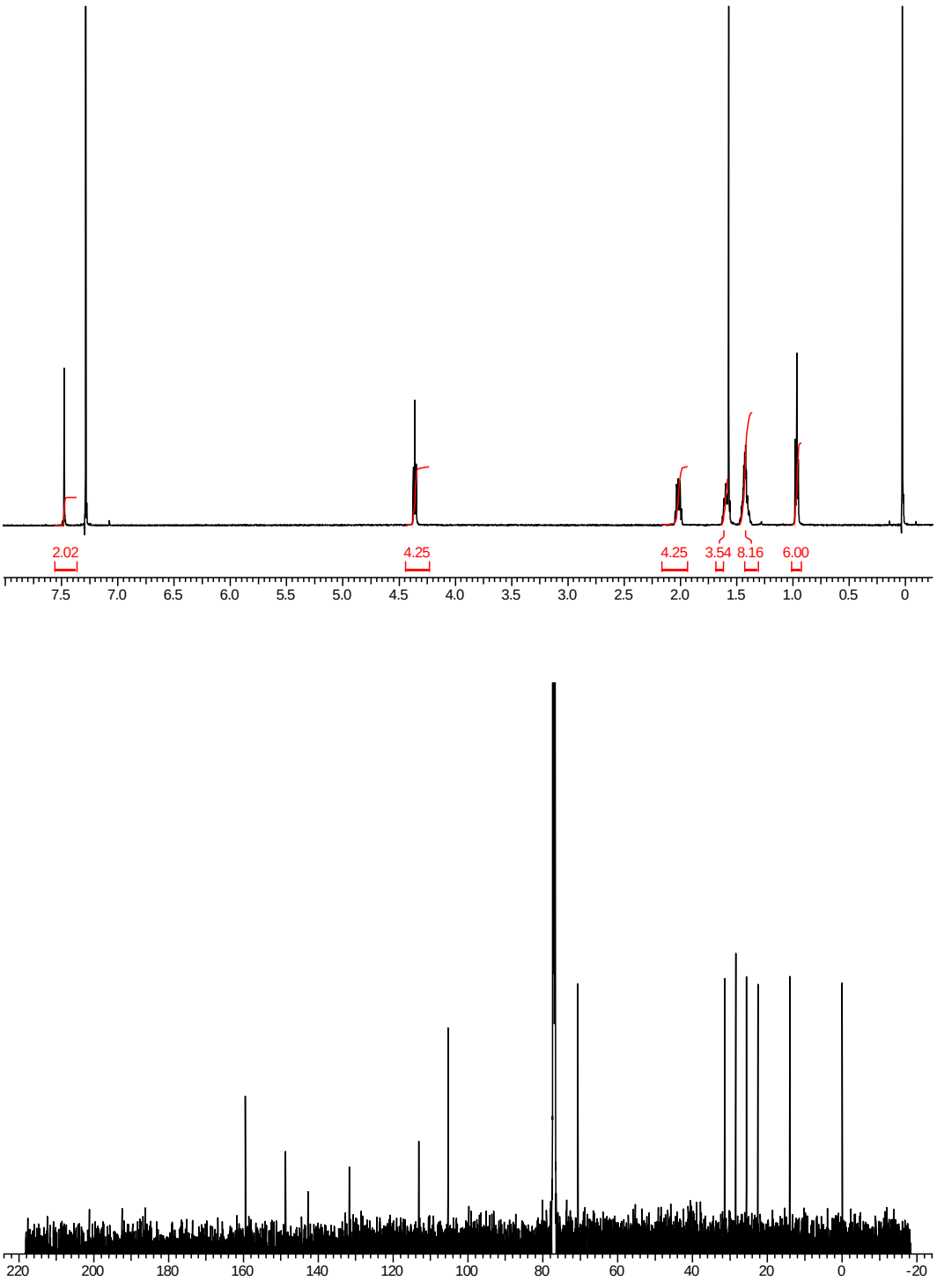

Figure S5 ^{1}H (top) and ^{13}C (bottom) NMR spectra of **1a**.

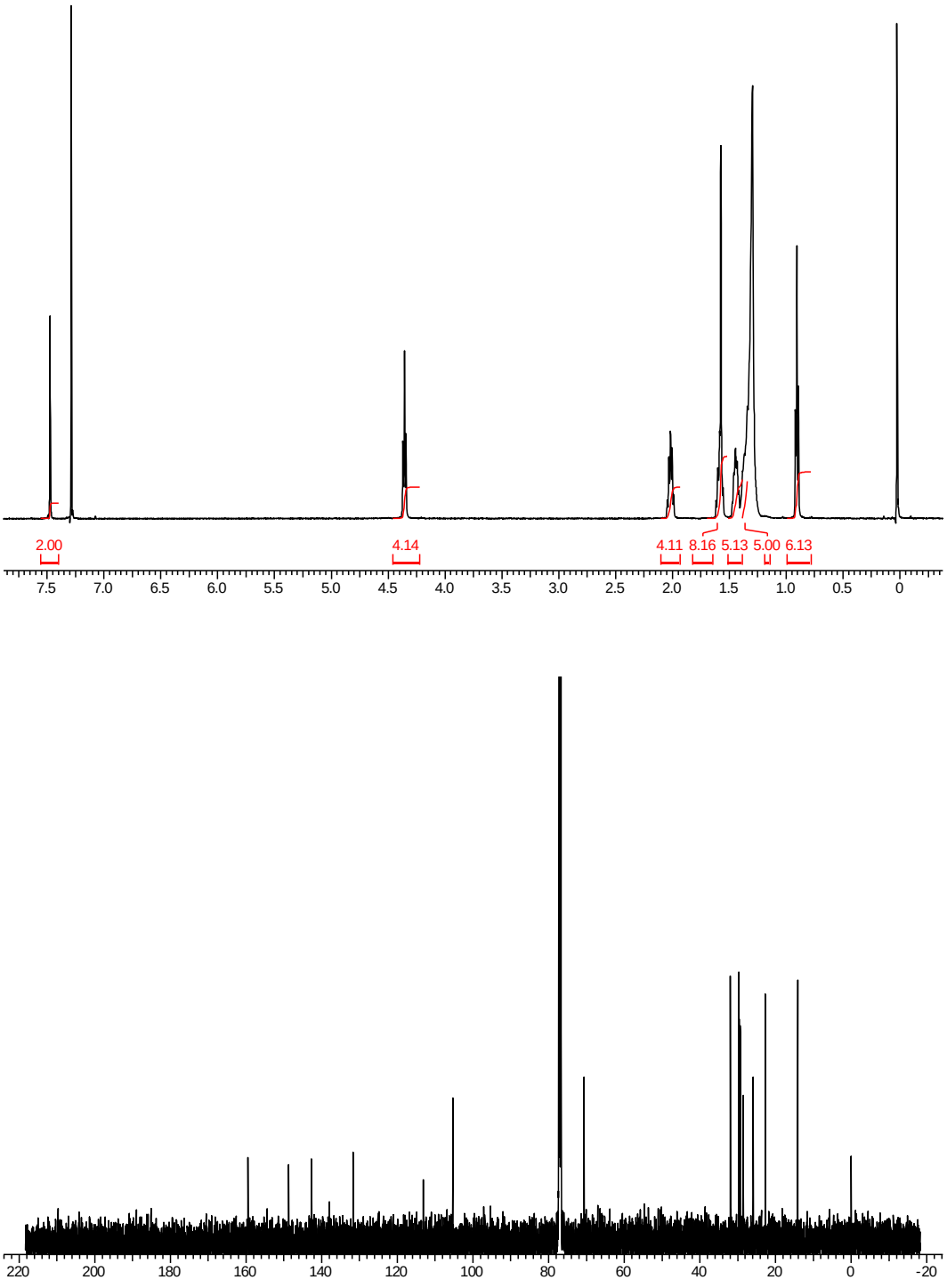

Figure S6 ^{1}H (top) and ^{13}C (bottom) NMR spectra of **1b**.

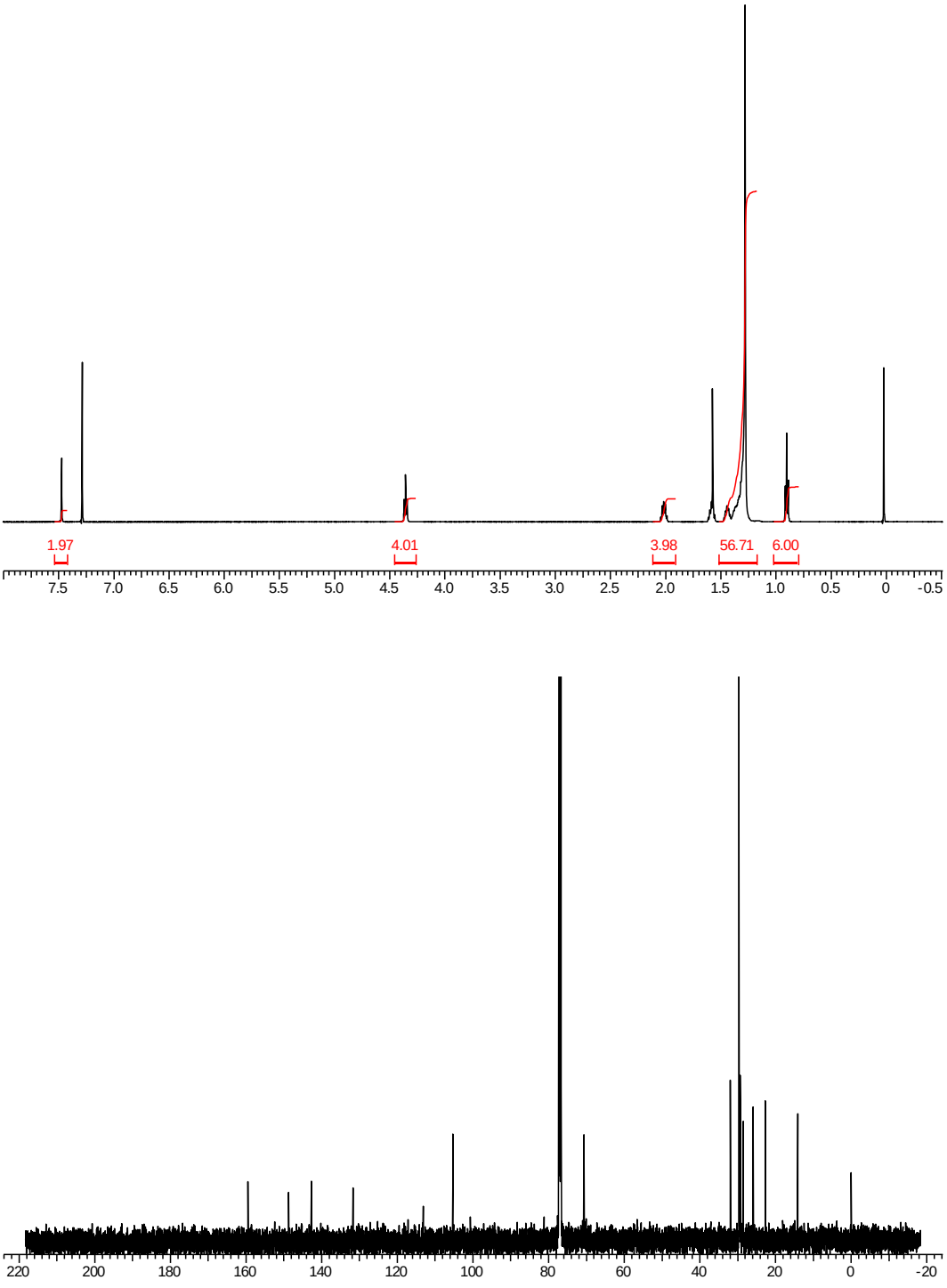

Figure S7 ^{1}H (top) and ^{13}C (bottom) NMR spectra of **1c**.

6. References

S1. J. Nishida, S. Murai, E. Fujiwara, H. Tada, M. Tomura, Y. Yamashita *Org. Lett.* **2004**, *6*, 2007–2010.

S2. Y. Liu, M. S. Liu and A. K.-Y. Jen *Acta Polym.* **1999**, *50*, 105–108.