Electronic Supplementary Material (ESI) for RSC Advances.

The influence of lateral fluorination and cyanation on the mesomorphism of polycatenar mesogens and the nature of the SmC phase therein

Antonina I. Smirnova*[a,b], Benoît Heinrich*[c], Bertrand Donnio*[c,d] and Duncan W. Bruce*[a]

[a] Department of Chemistry, University of York, Heslington, YORK, YO10 5DD, UK

E-mail: duncan.bruce@york.ac.uk

[b] Nanomaterials Research Institute, Ivanovo State University, Ermak str., 37/7, 153025 IVANOVO, RUSSIA

E-mail: antonia_smirnova@mail.ru

[c] Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), CNRS-Université de Strasbourg (UMR 7504), 23 rue du Loess BP 43, 67034 STRASBOURG Cedex 2, FRANCE

E-mail: heinrich@ipcms.unistra.fr, E-mail: bertrand.donnio@ipcms.unistra.fr

[d] Complex Assemblies of Soft Matter Laboratory (COMPASS), CNRS-Solvay-University of Pennsylvania (UMI 3254) CRTB, 350 George Patterson Boulevard, BRISTOL, PA 19007, USA

Supplementary Information

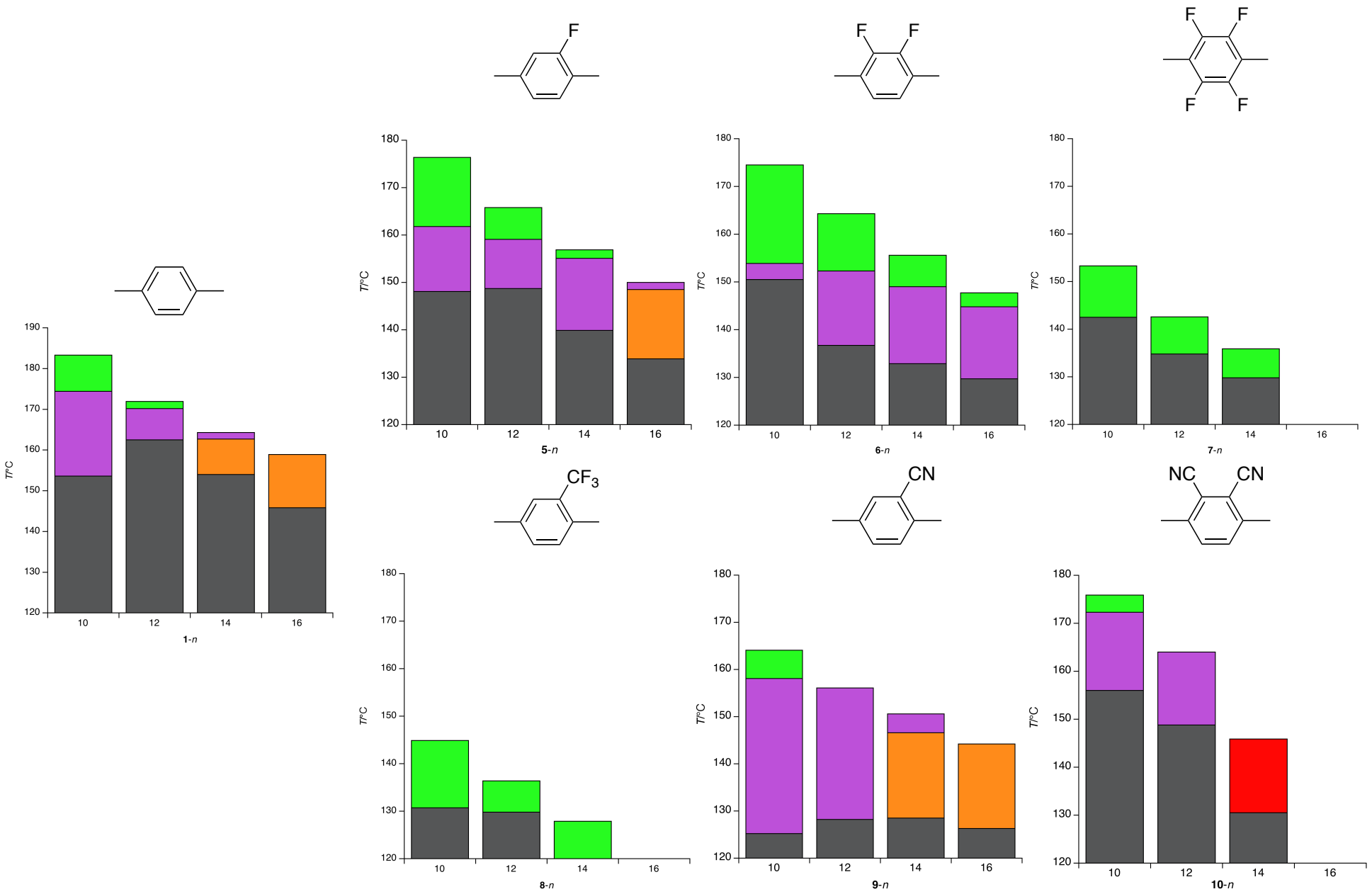

Figure S1 Comparison of all phase diagrams of compounds **1**-*n* and **5**-*n* to **10**-*n* (note slightly different *y*-axis scale for **1**-*n* – max. = 190 °C).

Table S1 X-ray data for the compounds **5**-14, **5**-16, **9**-12, **9**-14, **9**-16, **10**-12 and **10**-14.

Compound	*T*/°C	Experimental reflections / d_{exp},Å	Intensity[a]	*hkl*[b]	*hkl*[c]	Phase
5-14	140	36.3 4.6	VS (sh) VS (br)	001 h		SmC
	145	36.2 4.6	VS (sh) VS (br)	001 h		SmC
	150	35.8 4.6	VS (sh) VS (br)	001 h		SmC
5-16	135	38.1 34.2 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	140	38.1 34.0 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	145	38.0 34.1 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	145[d]	38.0 4.6	VS (sh) VS (sh)	001 h		SmC
9-12	115	36.7 4.5	VS (sh) VS (br)	001 h		SmC
9-14	135	38.1 34.2 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	138	38.0 34.1 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	145	37.8 33.6 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
	148	38.0 4.6	S (sh) VS (br)	001 h		SmC
9-16	130	39.3 35.2 4.6	VS (sh) S (sh) VS (br)	20 11 h	11 20 h	Col_r
10-12	150	36.2 4.6	VS (sh) VS (br)	001 h		SmC

	155	36.2 4.6	VS (sh) VS (br)	001 h	SmC
10-14	140	38.3 4.6	VS (sh) VS (br)	10 h	Col_h
	145	38.1 4.6	VS (sh) VS (br)	10 h	Col_h

[a] (VS) very strong, (S) strong, (sh) sharp, (br) broad.

[b] *hkl* are the Miller indices of the reflections (00*l* for smectic and *hk* for columnar phases, respectively); $h = h_{ch} + h_{core}$ corresponds to the maximum of the overlaping diffuse scatterings due to lateral distances between molten aliphatic tails (h_{ch}), and between mesogenic cores (h_{core}).

[c] alternative indexing of the Col_r.

[d] Cooled from the isotropic liquid.