

## Electronic Supplementary Information

### Photoinduced Synthesis and Ordering of Lamellar *n*-Alkylsiloxane Films

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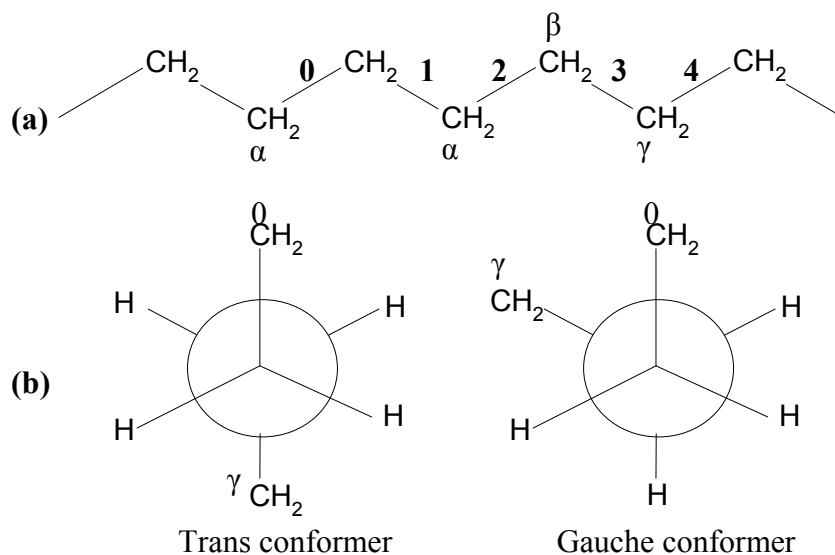
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Sample	T <sup>1</sup> (mol%)	T <sup>2</sup> (mol%)	T <sup>3</sup> (mol%)	Molar ratio (OH / Si)
C <sub>8</sub> PS	0	44	56	0.44
C <sub>10</sub> PS	1	46	53	0.48
C <sub>12</sub> PS	2	47	51	0.51
C <sub>16</sub> PS	8	64	28	0.8
C <sub>18</sub> PS	11	62	27	0.84

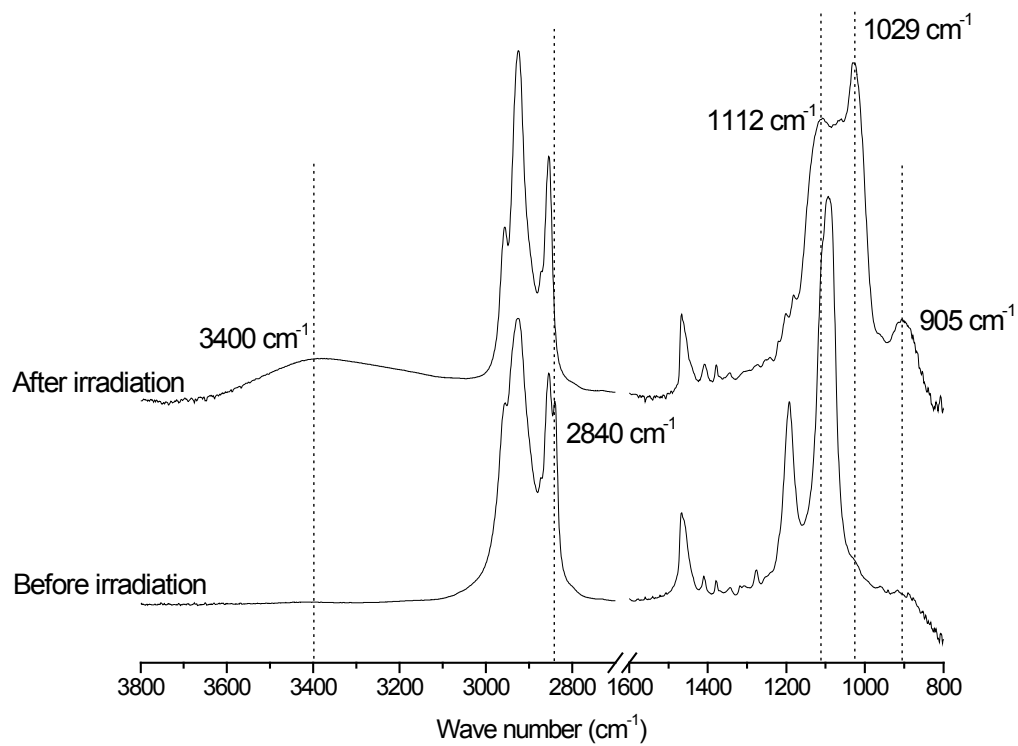
**Table S1** Proportion of siloxane subspecies and silanol functions in *n*-alkylsiloxane films synthesized *via* sol-gel photopolymerization

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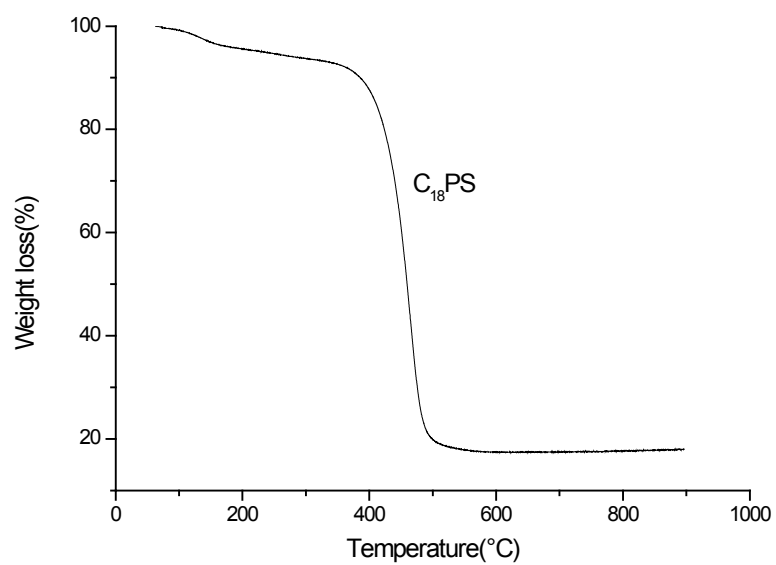
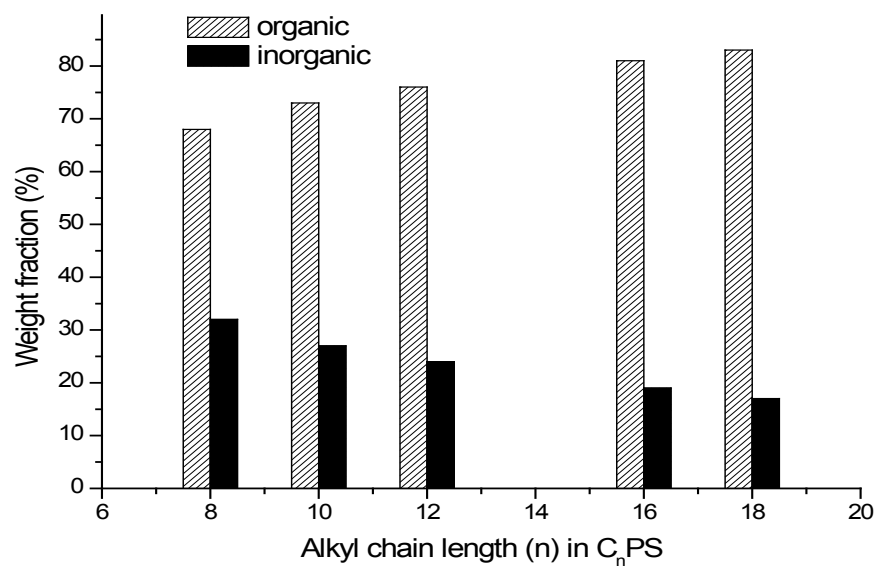
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**Fig. S1** (a) Portion of the interior methylene groups of an alkyl chains in all-trans, planar zigzag conformation. (b) Newman projections along the C-C bond **2** illustrating trans and gauche conformers



**Fig. S2** FTIR spectra of C<sub>10</sub>TMS film before and after irradiation



**Fig. S3** Proportion of organic and inorganic moieties in C<sub>n</sub>PS films (up). Thermal gravimetric plot of C<sub>18</sub>PS (down).