

## NMR relaxation study of molecular dynamics of liquid crystalline side-on organosiloxane tetrapodes

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Proton NMR relaxation measurements were carried out on two liquid crystalline organosiloxane tetrapodes with side-on mesogenic groups, exhibiting nematic and smectic C phases, and on a monomeric analogue.<sup>1,2</sup> NMR relaxometry of the tetrapodes systems yields  $T_1^{-1}$  dispersions clearly different from those of conventional calamitics. The influence of molecular tendency to form interdigitated structures is evidenced by frequency dependent relaxation rate in the isotropic phase – indicating the presence of ordered clusters far above the phase transition – and by the diminished role of molecular self-diffusion in ordered phases. Nematic-like director fluctuations are the dominating relaxation mechanism whereas the translational displacements are strongly hindered by the interdigitation of dendrimer arms.

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