Liquid crystalline side chain methacrylic azo containing polymers

González-Henríquez, C. M.

Soto-Bustamante, E. A.

Waceols-Gordillo, D. A.

Haase, W.

This paper describes the synthesis and characterisation of methacrylic liquid crystalline side chain polymer containing azo group, with (PM6OAn) and without (PM6An) hydroxyl group. The characterisation was done by using a polarised light microscope (PLM), differential thermal analysis (DTA), and X-ray diffractometry. All compounds developed bilayer smectic phase, with a certain degree of interdigitation between the layers. Poly[{3-hydroxy-4-[(E)-(4-octyloxyphenyl)diazenyl]phenoxy}hexyl]-2-methyl-prop-2-enoate (PM6OA8) exhibits a smectic A phase, whereas the other polymers show a SmC phase. Pyroelectric investigations show only an antiferroelectric behaviour for poly [{3-hydroxy-4-[(E)-(4-dodecyloxyphenyl)diazenyl]phenoxy}hexyl]-2-methylprop-2-enoate (PM6OA12) and a para-electric behaviour for PM6OA8, poly[{4-[(E)-(4-dodecyloxyphenyl)diazenyl]phenoxy}hexyl]-2-methylprop-2-enoate (PM6A12) and poly [{4-[(E)-(4-octyloxyphenyl) diazenyl] phenoxy} hexyl]-2-methylprop-2-enoate (PM6A8). Finall