

Synthesis and properties of new calamitic mesogens containing four benzene rings and two azo groups in core

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The most widely used liquid-crystalline materials are room temperature nematics. Their most known application is of course LCD display but there are many others. Nematic phase is exploited so much due to its usually low viscosity and consequently easy reorientation.

Here we present the convenient and optimized synthesis of 4-[4'alkylphenyl]diazenylphenyl 4''-[(4'''-dodecyloxyphenyl)diazenyl]benzoates (Figure below) and describe their properties. The preliminary tests show wide range of nematic phase as well as a wide range of smectic C and also an excellent thermal stability.

These compounds not only make interesting materials by themselves or as mixture ingredients but also may inspire further structural modifications towards some specific applications.

