S-0409

A SMECTIC A LIQUID CRYSTAL WITH SIGN REVERSAL DIELECTRIC ANISOTROPY

M. B. BABANLY, A. R. IMAMALIYEV, SH. SH. SHIKHALIBEYLY
Baku State University, Faculty of Chemistry, Baku, AZERBAIJCAN

On the basis of phase diagram analysis of liquid crystals mixture

\[ \begin{align*}
\text{C}_6\text{H}_{13} & \quad - \quad \text{O} \quad - \quad \text{C}_6\text{H}_{13} \\
\text{O}_2\text{N} & \\
\text{and} \\
\text{C}_{10}\text{H}_{21} & \quad - \quad \text{O} \quad - \quad \text{COO} \quad - \quad \text{NO}_2
\end{align*} \]

has been prepared a liquid crystal possessing smectic A phase in wide temperature interval.

Figure presents a frequency dependence of dielectric permittivity anisotropy of each component as well as its mixture in mole ratio 2:3. Here you see the dielectric anisotropy of mixture changes its sigh in going across the frequency \( f_0 = 850 \) Hz. The mixture can be used to realize a homeotropic-planar transition at lower frequencies and planar-hometropic transition at higher frequencies. Unlike analogues effects in nematics these transition occurs with memory that is why attract the greatest interest in display technique. There has been investigated also some exploitation characteristics of obtained mixture: the time, threshold and contrast data and optimal driving frequencies.