

Abstract Submitted  
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**Two ferroelectric phases in a bent-core liquid crystal** C. ZHANG, N. DIORIO, B.K. SADASHIVA, A. JÁKLI — We report electro-optical, polarization current, dielectric and SAXS studies on novel bent-core materials that contain four ester groups; three in one arm and only one in the other. These materials differ from each other only by the number of carbons ( $n$ ) in the alkyloxy chain terminating the one ester containing arm: in Ar 35  $n=14$ , while in Ar 39  $n=18$ . The phase sequences of Ar 35 and 39 are very similar to each other. Both have two mesophases, M1 and M2, with M1 in the 115°C-140°C temperature range, and M2 in between about 100°C and 115°C. Polarization current measurements indicate polarization current and optical switching in the M<sub>1</sub> phase with spontaneous polarization and switching time in the  $P_s \sim 2.5\text{-}3\text{mC/m}^2$  and  $\tau \sim 200\mu\text{s}$  range, respectively. While in Ar 35 the M2 phase cannot be switched, in the AR 39 we could detect polarization switching with a polarization value of about 5-6 mC/m<sup>2</sup> and switching time over a millisecond. Dielectric and X-ray scattering studies were employed to reveal the fine structure of the M<sub>1</sub> and M<sub>2</sub> phases.

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