

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Recovery and stabilization of a reversed phase sequence in a ternary liquid crystal mixture RONALD PINDAK, Brookhaven National Lab, SHUN WANG, LIDONG PAN, Univ. of Minnesota, B.K. MCCOY, Azusa Pacific Univ., SUNTAO WANG, Brookhaven National Lab, H.T. NGUYEN, Univ. Bordeaux, CHENG-CHER HUANG, Univ. of Minnesota — The nOHFBBB1M7 (n =10) compound, 10OHF, shows a reversed SmC^*_{FI2} - SmC^* phase sequence, unique among all known antiferroelectric liquid crystals. This reversed phase sequence is stabilized upon doping with 9OTBBB1M7(C9) or 11OTBBB1M7(C11). In contrast, doping with homologous compounds (n = 9, 11, or 12) eliminates the SmC^*_{FI2} phase. One 10OHF/11OHF mixture without the SmC^*_{FI2} phase was selected for further studies. Adding C9 into this mixture revives the reversed phase sequence. Unexpectedly, even though 11OHF destabilizes the SmC^*_{FI2} phase in binary mixtures with 10OHF, it significantly increases the SmC^*_{FI2} temperature range in 10OHF/11OHF/C9 ternary mixtures. The extended temperature range is important for device applications.

Ronald Pindak
Brookhaven National Lab

Date submitted: 19 Nov 2008

Electronic form version 1.4