

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Optically active second-harmonic generation from a uniaxial fluid medium S. H. HAN, Advanced Photonics Research Institute, Gwangju Institute of Science and Technology, Gwangju 500-712, M. A. BELKIN, Y. R. SHEN, Department of Physics, University of California, Berkeley, California 94720 — We have shown that optically active second-harmonic generation is allowed in a uniaxial fluid medium. A homeotropically aligned chiral smectic-A liquid crystal was used as an example. Phase matching of chiral SHG in the medium was achievable by angle tuning and the chiral nonlinear susceptibility was deduced from the results. The SHG output vanished when the LC moved into the isotropic phase as expected. This work provides a method for us to measure chiral nonlinearity of chiral LC molecules, or more generally, chiral molecules that can be uniaxially aligned in a fluid medium.

S. H. Han
Advanced Photonics Research Institute
Gwangju Institute of Science and Technology, Gwangju 500-712

Date submitted: 16 Dec 2004

Electronic form version 1.4