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Second Harmonic Generation in a Bent-core Nematic Liquid Crystal.[1] SEUNG HO HONG, ANTAL JAKLI, JAMES GLEESON, SAMUEL SPRUNT, BRETTT ELLMAN, Kent State University — We studied second harmonic generation (SHG) as a function of optical polarization in a magnetically-aligned bent-core nematic liquid crystal (BCN). At the isotropic to nematic transition we detect the onset of a weak SH signal, which stays approximately constant through the nematic phase. Our results for polarization selectivity and for cells of different thickness indicate that the signal from the BCN cannot be explained by quadrupoles, defects in director orientation, fluctuations or cell-surface polarization. We discuss models for a noncentrosymmetric component of the BCN structure that can explain our data.

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