Abstract Submitted
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The shape and conformation of the mesogenic group in tetrapodic liquid crystals[1] HYUNGGUEN YOON, SHINWOONG KANG, Department of Physics, Kent State University, GEORGE H. MEHL, Department of Chemistry, University of Hull, UK, SATYENDRA KUMAR, Department of Physics, Kent State University — The nematic phases formed by tetrapodic mesogens based on Si- or Ge- core have been investigated by various methods [1]; deuterium NMR, polarized IR spectroscopy, and light scattering. In these studies, biaxiality of the nematic phase has been the central issue. The average statistical shape that such a complex molecule adopts and how the four mesogens attached to Si/Ge atom are oriented in the nematic and lower temperature phases are naturally important questions. However, these have not been sufficiently discussed. We performed synchrotron x-ray diffraction experiments on magnetic aligned Ge-tetrapodes, augmented by conoscopy, capacitance, and electro-optical experiments. The results of these studies and the inferences drawn for the mesogenic group formation will be presented. [1] K. Neupane, S.W. Kang, S. Sharma, D. Carney, T. Meyer, G. H. Mehl, D.W. Allender, S. Kumar, and S. Sprunt, *Phys. Rev. Let.* **97**, 207802 (2006), and references there in.

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