Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Effect of Shape on Electronic and Magnetic Properties of Graphene Nanoribbons (GNRs) ALBERT K. DEARDEN, PHILIP SHEMELLA, Department of Physics, Applied Physics, and Astronomy, Rensselaer Polytechnic Institute, Troy, NY, PULICKEL M. AJAYAN, Dept. of Mechanical Engineering & Materials Science, Rice University, Houston, TX, SAROJ K. NAYAK, Department of Physics, Applied Physics, & Astronomy, Rensselaer Polytechnic Institute, Troy, NY — We have studied electronic and magnetic properties of grapheme nano-structures with different shapes. In particular, we have studied both zigzag and armchair graphene nanoribbons (GNR) of triangular shape using density functional method. We find electronic and magnetic properties of triangular structures are drastically different from their rectangular counterparts and our results suggest that, in addition to size effect, shape of the structure has a large impact on the underlying intrinsic electronic properties of GNRs. We will compare our results with available experiments.

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Date submitted: 26 Nov 2008 Electronic form version 1.4