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Is Electron Transport In Boron Nanotube Ballistic? KAH CHUN LAU, RANJIT PATI, RAVINDRA PANDEY, Department of Physics, Michigan Technological University, Houghton, MI, SHASHI P. KARNA, US Army Research Laboratory, Weapons and Materials Research Directorate, ATTN: AMSRD-ARL-WM, Aberdeen Proving Ground, MD 21005-5069 — The electron transport in single-walled boron nanotube is studied using the Landauer-Buttiker multi-channel approach in conjunction with the tight-binding method. The calculated results predict a ballistic transport in boron nanotubes, with a relatively lower resistances as compared to that of a single-walled carbon nanotube. The electron-deficient character in bonding of elemental boron may be attributed to its higher conductivity.

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