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Polarizability of carbon nanotube peapods from first-principles¹

KISEOK CHANG, YOUNG-GUI YOON, Chung-Ang University — We calculate polarizability of carbon nanotube peapod from first-principles. The calculated result gives information about electronic screening effects of carbon nanotubes. Recently, the structure has been suggested as bucky shuttle memory devices and three-terminal switching devices. The polarizability and the screening effects may play an important role for the control of that type of devices. We discuss our results in the context of nanoelectronics application.

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