

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Conductance of telescoped double wall nanotubes calculated with ADF program package RYO TAMURA, Shizuoka University — In double wall nanotubes (DWNTs), the interlayer current is negligible compared to the intra-layer current. When the inner tube is partially extracted (telescoped) from the outer tube, however, the total current must flow between the layers so that the interlayer interaction drastically influences the conductance. Here the interlayer bonds can be considered as weak covalent bonds rather than van der Waals bonds since they are anisotropic and their number per atom is limited. In this presentation, the transfer integrals between the layers are calculated by ADF program package and their effects on the conductance in the telescoped DWNTs are investigated. They are compared with our previous results.

Ryo Tamura
Shizuoka University

Date submitted: 12 Jan 2007

Electronic form version 1.4