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Heat transfer through a dual-walled carbon nanotube[1] KHOA BUI, The University of Oklahoma, CEDRIC COUSIN, Blaise Pascal University, Clemont-Ferrand, HUONG NGUYEN, The University of Oklahomoa, ALBERTO STRIOLO, DIMITRIOS PAPAVASSILIOU, The University of Oklahoma — Molecular Dynamics simulations are used to investigate the resistance to heat tranfer between the walls of dual-walled carbon nanotubes (DWCNTs). Recent computional results have indicated that the carbon nanotube to carbon nanotube thermal boundary resistance (TBR) can be as high or higher than the TBR between a nanotube and the surrounding matrix (e.g., epoxy or octane) in thee case of composites. This generates the question of whether heat transfer in multi-walled carbon nanotubes occures through the outer nanotube only or not. We discuss here results for a DWCNT composed of a (5,5) nanotube inside a (10,10) nanotube, as well as the differences between this case and the case of a (6,6) inside a (19,0).

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