

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Thermal Conductivity behavior of MWCNT based PMMA and PC composites GIRIJA DUBEY, York College-CUNY, NY11451, PRASHANT JINDAL, University Institute of Engineering Technology, Panjab University, 160014, India, RAJIV BHANDARI, NEHA DHIMAN, CHETAN BAJAJ, VIJAY JINDAL, Department of Physics, Panjab University, Chandigarh 160014, India — Poly methyl methacrylate (PMMA) and Polycarbonate (PC) are low cost polymer materials which can be easily transformed into desired shapes for various applications. However they have poor mechanical, thermal and electrical properties which are required to be enhanced to widen their scope of applications specifically where along with high strength, rapid heat transfer is essential. Multi Walled Carbon nanotubes (MWCNTs) are excellent new materials having extraordinary mechanical and transport properties. We will report results of fabricating composites of varying compositions of MWCNTs with PMMA and PC and their thermal conductivity behaviour using simple transient heat flow methods. The samples in disk shapes of around 2 cm diameters and 0.2 cm thickness with MWCNT compositions varying up to 10 wt% were fabricated. We found that both PMMA and PC measured high thermal conductivity with increase in the composition of CNTs. The thermal conductivity of 10wt% MWCNT/PMMA composite increased by nearly two times in comparison to pure PMMA.

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Date submitted: 03 Nov 2015

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