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Abstract for an Invited Paper
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2D Carbon Nanotube Network: A New material for Electronics

DAVID HECHT, University of California Los Angeles

This talk will focus on the electronic properties of two dimensional carbon nanotube networks, and on their application potential. Percolation issues, together with the frequency, and temperature dependent activity will be discussed. The network can be tuned from having semiconducting to metallic like behavior, and doping with electron withdrawing and donating species leads to networks with tailor-made electronic properties. The network is also highly transparent in the visible spectral range, this attribute – together with simple room temperature fab processes – opens up application opportunities in the area of electronics, opto-electronics, photovoltaics and sensors. Recent results on solar cells, OLEDs and smart windows will be reviewed. Field effect transistors that incorporate nanotube network conducting channels, together with complex functional devices that incorporate networks and functional molecules will also be discussed. Finally a comparison will be made with conventional and emerging materials that compete area of disposable, flexible and printable electronics.