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**Catalytic behavior of Graphene/CNT composites in DSCs** JOSEF VELTEN, ANVAR ZAKHIDOV, University of Texas, at Dallas, DILLIP PANDA, LYNN DENNAY, ATTILA MOZER, DAVID OFFICER, University of Wollongong — This presentation demonstrates the replacement of the Pt used in the counter electrode of a dye sensitized solar cell (DSC) by a nanocomposite of carbon nanotube with grapheme layers. The  $I/I_3^-$  redox reaction of such DSC was studied using a composite of graphene flakes (obtained by reduction of grapheme oxide) with either single wall or multiwall carbon nanotube sheets. This nanocomposite was deposited onto FTO coated glass and this electrode showed improved catalytic behavior beyond the use of carbon nanotubes alone for the charge transfer redox reaction. This paper also compares the use of the CNT/Gr composite counterelectrode with the standard Pt counterelectrode. The details of increased catalytic activity of Gr/CNT was studied by impedance spectroscopy and the origin of the enhanced electron transfer at the Gr interface is discussed in terms of local states at atomic edges.

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