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Carbon nanotube networks grown on various carbon nanostructures: SWCNT, MWCNT and Graphene YOUNGWOON KWON, ANVAR ZAKHIDOV, Univ of Texas, Dallas, ALAN G. MACDIARMID NANOTECH INSTITUTE TEAM — Secondary growth of carbon nanotubes (CNT) on the various nanoscale substrates has been performed by using chemical vapor deposition (CVD). Spinnable CNT yarns, single wall CNT sheets and graphene flakes, in NMP have been used as scaffolds for such secondary networks, The CNT yarn drawn from spinnable CNT forest is one of the promising applications of the CNT. However, orientation of the yarn and comparatively high sheet resistance make them harder for applications. Processing secondary CVD grows CNTs on the CNT yarn without any orientation of the secondary grown CNTs. Thus, this decreases the effect of the orientation of the CNT yarn and also decreases sheet resistance since the yarn have more contact each other. This after-treating will make more application possible. Furthermore, since CNT yarn does not make perfect surface and have gap between each bundle, arranging yarns to certain directions allows to growth CNT forest with specific pattern such as check pattern. Also it is possible not to make vertical CNT forest to the substrate by stack multi-layer of CNT yarn so that make felt-like-sheet of CNTs. The secondary growth of CNTs on CNTs is the useful method of fabricating of CNT yarn.

Youngwoo Kwon
Univ of Texas, Dallas

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