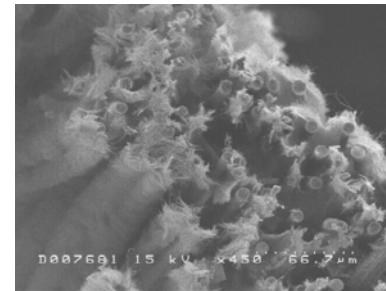
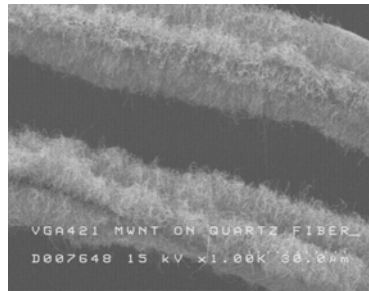
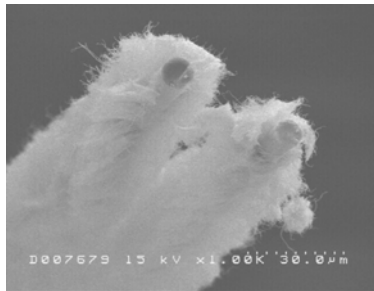


Fuzzy Fibers for Fabricating High Performance Composite Materials

Fuzzy fibers consisting of aligned carbon nanotubes radiating from the cylindrical surface of quartz fibers have been produced. Their inclusion in a suitable matrix could yield materials with exceptional properties due to a substantial increase in their tolerance of high interfacial shear stress before failure occurs. Synthesis of the fuzzy fibers was performed in a tubular reactor using quartz filament as the substrate onto which multiwall nanotubes (MWNTs) were grown. Studies are in progress to assess the performance of these materials in composite applications and to investigate methods for improving the adhesion of the MWNTs to the surface of the substrate fiber. It is planned to broaden the scope of the work to include carbon fibers as the substrate for the fuzzy fibers, so that all-carbon composites can be produced.



Carbon nanotubes grown on quartz glass fibers.

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