Developing seeds for growing whole gardens of identical SWCNTs

December 11 2006

Scientists at Rice University are reporting development of a new method for making single wall carbon nanotubes (SWCNTs) that could eliminate a major barrier to commercial and industrial uses of SWCNTs.

James M. Tour and colleagues explain that SWCNTs have properties ideal for electronic devices, electrical wiring, sensors and other practical applications. Those applications require batches of the same type of SWCNT. Current methods, however, produce batches with multiple types of SWCNTs mixed together — with no workable way of separating those types.

In the Dec. 12 issue of the weekly *Journal of the American Chemical Society*, the researchers report invention of a method for mass-producing identical copies of SWCNTs. It starts with a "seed" SWCNT of the desired type. The seed is used to grow identical new SWCNTs.

"This study establishes a method for an amplified growth process of SWCNTs with the hope of duplicating any desired n,m tube -- a process that will be required for many electronics and optoelectronics applications," the researchers state. The researchers disclosed the small-scale, proof-of-concept protocol; however scale-up remains to be achieved.

Source: American Chemical Society