

Growth of carbon nanotube forests for fiber application

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In this talk, the work of growing carbon nanotube (CNT) forests for fiber application is presented. CNT forest that can be spun into a continuous CNT yarn, called spinnable CNT forest, was grown. It was found that there is a limit to the height of spinnable CNT forest. The reason for the limit to the height of spinnable CNT forest is discussed. Then the growth of tall CNT forest was also tried to fully exploit the high strength of individual CNTs in a CNT yarn without spinning short CNTs. Maximum 1.9-cm tall CNT forests were grown by adding small amount of ethanol vapor and controlling reactor pressure. The effect of various experimental parameters on the growth kinetics is discussed.