CN-O-8

Template Synthesis of Carbon Nanotubules

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Abstract

The template synthesis of carbon nanostructures formed in porous anodic aluminium oxide (AAO) template with a pore size of 200nm by a liquid phase impregnation of the template with a polymer, polyfurfuryl alcohol, followed by carbonization is studied. The temperatures of exposure to furfuryl alcohol vapour were varied between 50 and 70 °C. The resultant carbon nanotubules formed were hollow with open ends having diameter ranging from 200–300nm which is in agreement with the pore size of the template used. The BET surface area was found to increase from 11.6 m^2/g before pyrolysis to 90.2 m^2/g after pyrolysis as a result of the formation of carbon nanotubules.

Keywords: anodic aluminium oxide (AAO) template, carbon nanotubules.