Abs. 34, 205th Meeting, © 2004 The Electrochemical Society, Inc.

Synthesis of Carbon Nanotubes Filled with Nanoparticles Using Arc Discharge in Solution

Debasis Bera, Suresh C. Kuiry, Matthew McCutchen, Sudipta Seal

Abstract:

Carbon Nanotubes (CNTs) filled with nanoparticles, which are expected to have very high potential in various applications, has been successfully synthesized using a simplified arc discharge in solution method in a glass container containing the precursor solution of nanoparticles. In this inexpensive route, two graphite electrodes, acted as a cathode and an anode, were used for arc-discharge in the glass container containing precursor solution. The diameters of the CNTs and nanoparticles were 15nm and ~4nm, respectively. Nanoparticles encapsulated carbon nanotubes were synthesized from solution through the arc discharge method at a voltage of 28 V with an optimized direct current of 28 A.