

Abstract Submitted
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Electrical transport properties of electrodeposited polypyrrole/single-walled carbon nanotubes¹ JI HUN KIM, Dept. of Physics, Yonsei Univ., JE SEUNG OH, National Core Research Center for Nanomedical Technology, Yonsei Univ., YOUNG WOOK CHANG, SEUNG HWAN YOO, Dept. of Physics, Yonsei Univ., HYANG HEE CHOI, National Core Research Center for Nanomedical Technology, Yonsei Univ., KYUNG-HWA YOO, Dept. of Physics and National Core Research Center for Nanomedical Technology, Yonsei Univ., DEPT. OF PHYSICS, YONSEI UNIV. TEAM, NATIONAL CORE RESEARCH CENTER FOR NANOMEDICAL TECHNOLOGY, YONSEI UNIV. TEAM — Single-walled carbon nanotubes (CNT) coated by conducting polypyrrole (PPy) have been synthesized by electrochemical polymerization of pyrrole on CNTs. In order to study the influence of PPy on the electrical transport properties of CNTs, the temperature dependences of the conductivity have been measured on bare CNTs and CNT/PPy. At room temperatures, the conductivity of CNT/PPy was reduced with thin PPy layers, whereas it was enhanced with thick PPy layers. In addition, depending on the PPy thickness, different temperature dependences of conductivity have been observed. Possible electrical transport mechanisms are discussed.

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