

## Enzyme-based Biomolecular Engineering of Single-Walled Carbon Nanotubes (SWNTs) by Transglycosylation Reaction

이석재, 박종필, 박태정, 이상엽\*

한국과학기술원

(leesy@mail.kaist.ac.kr\*)

The aim of this work was to develop the enzyme-based biomolecular engineering of CD (cyclodextrin) wrapping around noncovalently SWNTs (single-walled carbon nanotubes) by CGTase (cyclodextrin glucanotransferase). Based on the microscopic analyses, which indicates that wrapped CDs around the wall of SWNTs were clearly observed by AFM (atomic force microscopy), resulting in the formation of CD-SWNTs molecular necklace. Attempts to design and synthesize molecular level functionalization using CDs as a cyclic ligand will be described.

Acknowledgment. This work was supported by the National Research Laboratory Program of the Korean Ministry of Science and Technology, the Center for Ultramicrochemical Process Systems (CUPS) and the Advanced Backbone IT Technology Development Project (IMT2000-B3-2) of the Ministry of Information and Communication (MIC), and by the BK21 project.