

## **Chromatography on self-assembled carbon nanotubes**

### **Author(s):**

Saridara, C (Saridara, C); Mitra, S (Mitra, S)

### **Source:**

ANALYTICAL CHEMISTRY **Volume:** 77 **Issue:** 21 **Pages:** 7094-7097 **DOI:**

10.1021/ac050812j **Published:** NOV 1 2005

### **Abstract:**

Stationary phases that provide high resolutions and are stable at high temperatures are of significant importance in chromatographic analysis. Carbon nanotubes (CNTs) are known to have high thermal and mechanical stability and have the potential to be high-performance separation media that utilize the nanoscale interactions. Here, we report the first application of self-assembled CNTs in long capillary tubes for the development of gas chromatography columns. A film of CNTs was deposited by chemical vapor deposition (CVD) to form the stationary phase in the open tubular format. High-resolution separation of a number of compounds has been achieved. Altering the CVD conditions can vary the thickness and the morphology of the CNT film, which opens the possibility of selectivity tuning. The ability to fabricate long tubes coated with CNTs can be readily employed in other gas- and liquid-phase separations as well.

### **Addresses:**

1. New Jersey Inst Technol, Dept Chem & Environm Sci, Newark, NJ 07102 USA
2. Rajamangala Univ Technol, Thyanaburi, Thailand

แหล่งอ้างอิง Web of Science