



Sulfur-encapsulation in carbon in nanocarbons

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1. 背景と研究目的

The present experiment is a continuous work of 201906053.

2. 実験内容

Sulfur was encapsulated in a series of single wall carbon nanotubes (SWCNTs) with different diameter. The external sulfur was washed away by CS_2 . The XRD patterns of sulfur-contained SWCNTs were obtained in Aichi SR.

3. 結果および考察

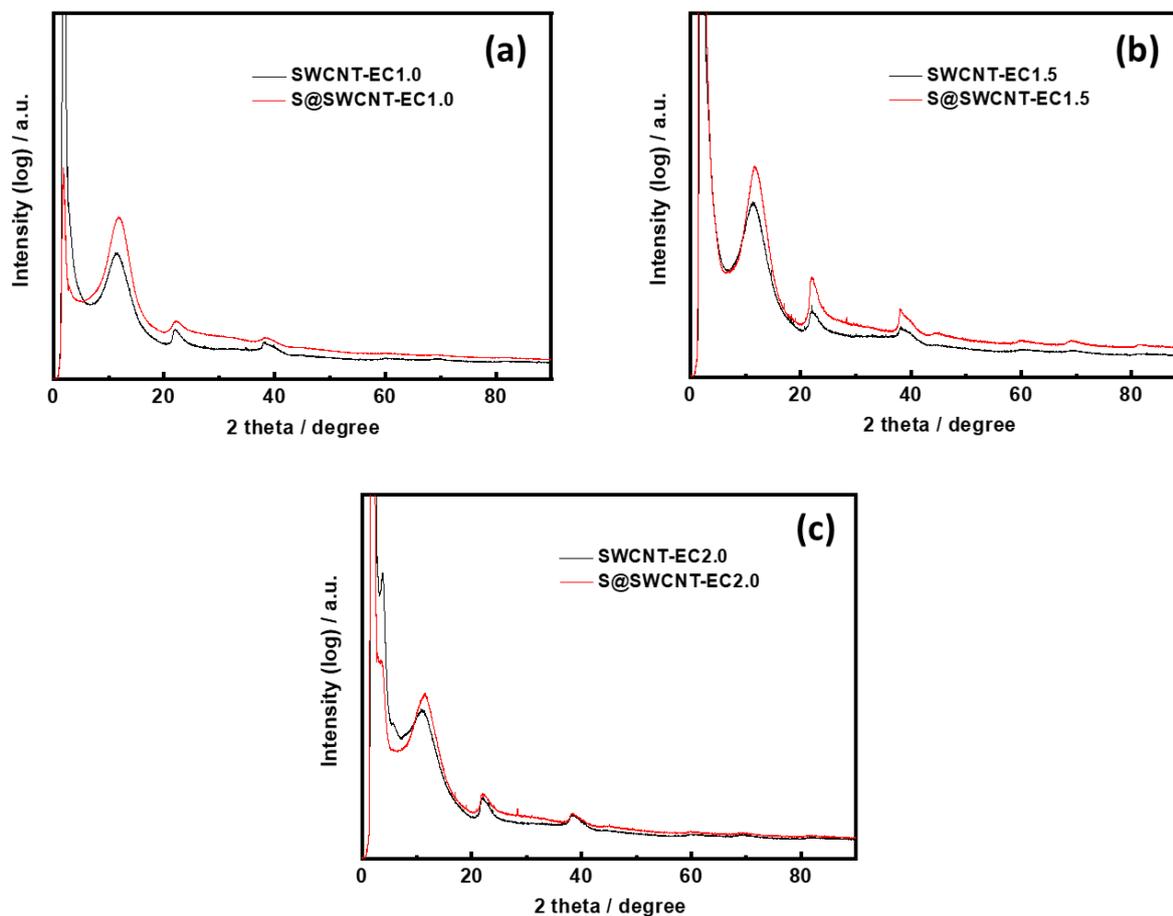


Fig. 1 XRD patterns of sulfur encapsulated in different SWCNTs.

Figure 1 shows the XRD patterns of pristine and sulfur encapsulated SWCNTs. Except the broad diffraction peak at 002, 01 and 004 peaks, pristine SWCNTs have a few sharp diffraction peaks at around 30° , indicating the presence of tiny amount inorganic impurities. Sulfur confined in SWCNTs doesn't give any extra peaks on XRD pattern, suggesting the confined sulfur is amorphous. However, the XRD patterns show significant hump between 20 to 40 degree after the sulfur encapsulation. Electron radial distribution functions will be determined from the XRD patterns in future.