

Microwave assistant sythesis of carbon nanotubes growth on nitrogen-doped graphene oxide as lithium ion battery anode

Kang Yingbo, 박호석<sup>†</sup>

성균관대학교

(phs0727@skku.edu<sup>†</sup>)

The growth of carbon nanotubes on three-dimensional nitrogen doped graphene oxide (C-NG) has been successfully synthesized via microwave self-assembly method. The morphology and structure of the C-NG are characterized by field emission scanning electron microscopy, X-ray diffraction, transmission electron microscopy and Raman. Compared with the RGO, the CNTs can be easily grown on the N-doped RGO due to the good conductivity by N-type configurations. The electrochemical performance of the C-NG is investigated by cyclic voltammetry and galvanostatic charge/discharge. The specific capacity of C-NG is 982 mAh g<sup>-1</sup> with rate capability of 60% from 100 to 1000 mAh g<sup>-1</sup>. After 200 cycles at the current density of 100mA g<sup>-1</sup>, the capacity is still 980mAh g<sup>-1</sup> with the coulombic efficiency in excess of 100%. Our results present a great potential to be further developed as a high performance lithium ion battery.