

Preparation of porous N doped graphene-N doped carbon nano flake/TiO₂-TiN microsphere from the bulk-TiO₂ for lithium battery anode

Balasubramaniyan, 정진석†

울산대학교

(jschung@mail.ulsan.ac.kr†)

An anode material of lithium ion battery, recently, the anatase TiO₂ attracted a much attention due to its higher operating voltage and structural stability during the electrochemical reactions. However, the poor electrical conductivity and lower ionic diffusion are the main drawbacks of the bulk TiO₂. TO solve these problems, coating with conducting materials or N doping has been considered. Herein, we prepared the N doped graphene-N doped carbon/TiO₂-TiN (NG-NC/TiO₂-TiN) via the carbonization of GO-Polyaniline/TiO₂ (GO-PANI/TiO₂) nanocomposites. The N rich PANI acting as a nitrogen dopant to GO and TiO₂, and gives the respective NG and TiO₂-TiN. In lithium battery anode, the NG-NC/TiO₂-TiN gives the higher specific capacity and excellent cycle stability in comparison to C/TiO₂ and pristine TiO₂ microsphere.