

Ni-NiO Supported on Nitrogen-Doped Carbon Nanoweb as a Highly Efficient Electrocatalysts for CO₂ Reduction to CO

한현수, 노유성, 박성민, 윤원근, 안현우, 김예규, 김원배[†]

포항공과대학교

(kimwb@postech.ac.kr[†])

Nickel and nickel oxide nanoparticles supported on N-doped carbon nanoweb (Ni-NiO/NCNWs) hybrid materials are reported as highly efficient catalyst for electrochemical CO₂ reduction to CO. The Ni-NiO/NCNWs are simply synthesized by pyrolysis of mixture of polypyrrole nanoweb (PNWs) and Ni metal precursor. The resulting Ni-NiO/NCNWs exhibited a maximum CO Faradaic efficiency of ~ 89 % at - 0.9 V (vs RHE). This study highlights the importance of synergistic effect of Ni-NiO nanoparticles and N doping on their catalytic performance toward CO generation.