

Controllable morphology and electrocatalytic performance of Cd/PtPd nanocomposites for both methanol oxidation reaction and formic acid oxidation reaction

Nguyen Van Toan, Quoc Chinh Tran, Van-Tien Bui, 최호석<sup>†</sup>

충남대학교

(hchoi@cnu.ac.kr<sup>†</sup>)

The improvement of catalytic performances for methanol and formic acid oxidation reaction still remains a key issue for development of new generation of both direct methanol and formic acid fuel cell. In this study, we report a simple reduction approach combining with a selectively chemical etching technique for the synthesis of nitrogen-doped carbon dots/PtPd nanocomposites at room temperature. The advantages of our method rely on the use of N-Cdots as additionally active sites to induce stable and uniform interconnection between PtPd alloys, forming a nanocomposite material with unique structures and properties. Furthermore, N-Cdots/PtPd nanocomposite shows hydrophilic property and excellent stability at room temperature. We expect that this nanocomposite can be further utilized for a wide range of electrocatalytic applications. In this regard, research efforts are currently underway in our group. \* Creative Human Resource Development Consortium for Fusion Technology of Functional Chemical/Bio Materials