

Atomic-Scale Structure of Pd/Cu Alloy Hollow Nanocubes

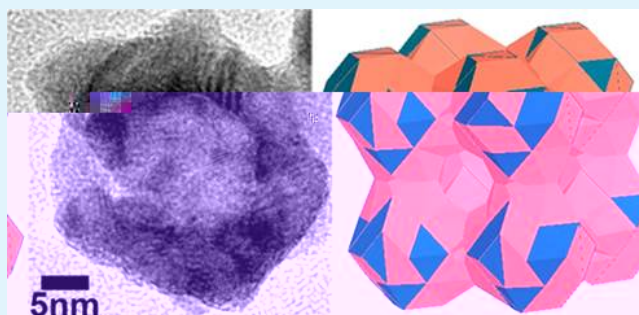
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Supporting Information

ABSTRACT:

Atomic-scale structure of Pd/Cu alloy hollow nanocubes is investigated by high-resolution transmission electron microscopy (HRTEM) and electron energy loss spectroscopy (EELS). The results show that the nanocubes are composed of Pd and Cu atoms, and the surface energy difference between the {100} and {111} facets is the main driving force for the formation of hollow nanocubes. The hollow nanocubes exhibit high electrocatalytic activity for the formic acid oxidation reaction (FAOR) in a direct formic acid fuel cell (DFAFC). The activity is significantly higher than that of commercial Pd/C catalyst. The results indicate that the hollow nanocubes are a promising catalyst for FAOR in DFAFC.



KEYWORDS: palladium/copper alloy, hollow nanostructure, surface energy difference, electrocatalytic activity, direct formic acid fuel cell, formic acid oxidation

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