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Lei Zhang, Jing Zhang



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**Multiporous molybdenum carbide nanosphere as a new
charming electrode material for highly sensitive simultaneous
detection of guanine and adenine**

Lei Zhang*, Jing Zhang

College of Chemistry, Liaoning University, 66 Chongshan Middle Road, Shenyang,

Liaoning, 110036, People's Republic of China

Abstract: By introduction of Mo metal species (molybdenum-based polyoxometalates) into the Cu-MOF as co-precursor, molybdenum carbide nanosphere ($\text{Mo}_x\text{C}@C$) was prepared via a simple calcining routine and a further etching the metallic Cu process. The obtained $\text{Mo}_x\text{C}@C$ showed a unique structure where well-dispersed Mo_xC nanoparticles (NPs) were encapsulated in porous carbon matrix. As-fabricated novel 3D porous architecture $\text{Mo}_x\text{C}@C$ nanosphere exhibited a potent and persistent electro-oxidation behavior followed by well-separated oxidation peaks (peak to peak voltage is about 350 mV) toward adenine (A) and guanine (G) by differential pulse voltammetry (DPV). This excellent electrochemical performance can be attributed to the unique structure and composition of 3D $\text{Mo}_x\text{C}@C$. Furthermore, 3D $\text{Mo}_x\text{C}@C$ also revealed high selectivity and sensitivity, good reproducibility, excellent stability and anti-interference ability. The calibration curves for quantitative analysis of G and A were obtained: 0.03–122 μM , and 0.02 μM –122 μM , respectively, the detection limits

* Corresponding author. Tel.: +86 24 62207809; Fax: +86 24 62202380.

E-mail address: zhanglei63@126.com (L. Zhang).

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