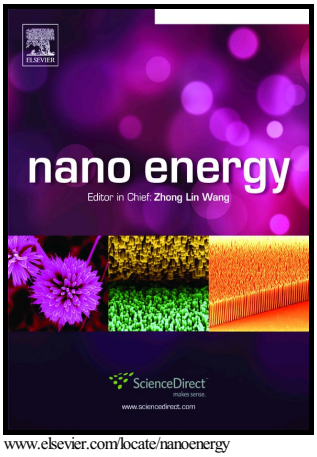

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Nitrogen-doped Hollow Carbon Nanospheres for High-Energy-Density Biofuel Cells and Self-powered Sensing of microRNA-21 and microRNA-141

Lin-Lin Wang[a], Hao-Hua Shao[a], Wen-Jing Wang[a], Jian-Rong Zhang[a,b]*, Jun-Jie Zhu[a]*

[a]State Key Laboratory of Analytical Chemistry for Life Science and Collaborative Innovation Center of Chemistry for Life Sciences, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

[b]School of Chemistry and Life Science Nanjing University Jinling College, Nanjing 210089, China.

Abstract

High-energy-density enzymatic biofuel cells (EBFCs) are urgently needed not only as green energy conversion devices but also as energy generators for medical devices. Low enzyme loading efficiency and insufficient direct electron transfer (DET) between enzymes and electrodes greatly hamper the development of EBFCs. Herein, we fabricated nitrogen-doped hollow carbon nanospheres with large pores (pNHCSs) via a green microwave-assisted