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

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## 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

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