Short Communication

Nitrogen-doped Carbon with Hierarchical Porous Structure for Electrocatalysis of Oxygen Reduction Reaction

Xianguo Ma¹, Shizhong Feng², Shan Ji^{1,*}

¹ School of Chemical Engineering, Guizhou Institute of Technology, Guiyang, 550003, China,

² Gansu petrochina Kunlun Gas Co., Ltd, Lanzhou, 730078, China

*E-mail: jissshan@126.com

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With fuel cells gaining recognition as promising devices for directly converting the chemical energy to electricity, to develop low-cost catalysts for electrocatalysis of oxygen reduction reaction (ORR) has become an active topic in this field. Hierarchical porous carbon materials (HPC) doped with heteroatoms, for instance N, S and Fe, are promising materials for using as catalysts for the ORR due to their low cost, high stability and high efficiency. In this work, we report a low-cost, facile and scalable method to produce nitrogen-doped hierarchical porous carbon material (N-HPC) by pyrolysis of corncobs. The activated N-HPC catalysts exhibit high activity for ORR compared to that of the state-of-the-art commercial Pt/C catalysts.

Keywords: N-doped carbon, Oxygen Reduction Reaction, Electrocatalysis, Biomass.

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