

Soft templated synthesis of non-precious mesoporous metal catalysts with Fe-N<sub>x</sub>/C active sites for oxygen reduction reaction

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Ordered mesoporous Fe/N/C with highly active Fe-N<sub>x</sub>/C sites were synthesized for nonprecious metal catalysts for oxygen reduction reaction in fuel cell. To synthesize the catalysts incorporated with Fe-N coordination, a simple block co-polymer-assisted softtemplate method was used. This catalysts (m-FePhen-C) performed a high catalytic activity, and exhibited 40% higher power density than that of commercial Pt/C in Membrane electrode assembly(MEA). The Fe-N<sub>x</sub>/C active sites with considerable number and formation of ordered mesoporous structure were achieved simultaneously by simple soft-template-assisted process. This study has an advantages of mesoporous structure with proper pore size for metal containing nonprecious metal catalysts and high-performance in MEAs.