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PII: S2211-2855(17)30694-8
DOI: <https://doi.org/10.1016/j.nanoen.2017.11.018>
Reference: NANOEN2319

To appear in: *Nano Energy*

Received date: 15 October 2017
Revised date: 4 November 2017
Accepted date: 7 November 2017

Cite this article as: Long Kuai, Erjie Kan, Wei Cao, Marko Huttula, Sami Ollikkala, Taru Ahopelto, Ari-Pekka Honkanen, Simo Huotari, Wenhai Wang and Baoyou Geng, Mesoporous $\text{LaMnO}_{3+\delta}$ perovskite from spray-pyrolysis with superior performance for oxygen reduction reaction and Zn-air battery, *Nano Energy*, <https://doi.org/10.1016/j.nanoen.2017.11.018>

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Mesoporous $\text{LaMnO}_{3+\delta}$ perovskite from spray-pyrolysis with superior performance for oxygen reduction reaction and Zn-air battery

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Abstract

Oxygen reduction reaction (ORR) is the key reaction in various electrochemical energy devices. This work reports an inexpensive mesoporous $\text{LaMnO}_{3+\delta}$ perovskite for ORR with remarkable activity, synthesized by a facile aerosol-spray assisted approach. The mesoporous $\text{LaMnO}_{3+\delta}$ material shows a factor of 3.1 higher activity (at 0.9 V vs. RHE) than LaMnO_3 obtained from co-precipitation method (LMO-CP).

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