Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information

Study of ″Ni-doping″ and ″Open-pore Microstructure″ as Physico-electrochemical Stimuli towards the Electrocatalytic Efficiency of Ni/NiO for Oxygen Evolution Reaction

Mahesh Kumar Paliwal,[a] and Sumanta Kumar Meher*[a]

[a]Department of Chemistry, Malaviya National Institute of Technology Jaipur, Rajasthan 302017, India

E-mail: skmeher.chy@mnit.ac.in

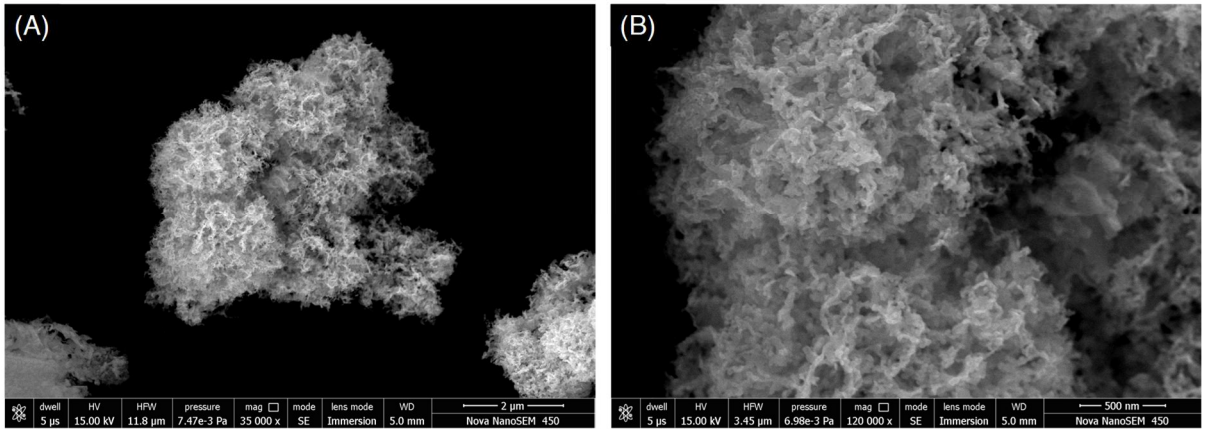

Fig. S1 (A) and (B) shows the respective low and high magnification FESEM images of Ni/NiO-OP sample, which demonstrates the presence of ample porosity (open-pore type) in the sample.

Table S1. The comparison of the electrocatalytic OER efficiency of the as-synthesized Ni/NiO-OP sample with other NiO based electrocatalyst.

Sl. No.	Material	Measured current density (mA cm^{-2})	Overpotential (mV)	Tafel slope (mV dec^{-1})	Reference
1	NiO-MWNT/Pt	10	779	120	[s1]
2	NiO/Fe^{trace}	10	540	30	[s2]
3	NiO nanoparticles	10	501	-	[s3]
4	NiO film	5	450	96	[s4]
5	rGO-NiO/Ni	10	530	81	[s5]
6	NiO	10	484	155.8	[s6]
7	NiO film	1	450	120	[s7]
8	NiO nanocubes	10	510	-	[s8]
9	NiO particles	10	467	140.7	[s9]
10	Ni/NiO@rGO	10	480	41	[s10]
11	Ni/NiO-OP	10	470	58	**This work**

References

[s1] F. Chekin, H. Tahermansouri, M. R. Besharat, *J. Solid State Electrochem*., 2015, **18**, 747–753.

[s2] K. L. Nardi, N. Yang, C. F. Dickens, A. L. Strickler, S. F. Bent, *Adv. Energy Mater*., 2015, **5**, 1500412.

[s3] P. Manivasakan, P. Ramasamy, J. Kim, *RSC Adv*., 2015, **5**, 33269–33274.

[s4] F. Basharat, U. A. Rana, M. Shahid, M. Serwar, *RSC Adv*., 2015, **5**, 86713–86722.

[s5] D. Wang, F. Watanabe, W. Zhao, *ECS J. Solid State Sci. Technol*., 2017, **6**, M3049–M3054.

[s6] A. Roy, A. Ray, S. Saha, M. Ghosh, T. Das, B. Satpati, M. Nandi, S. Das, *Electrochim. Acta*, 2018, **283**, 327–337.

[s7] E. A.-Duran, Y. Meas, J. J. P.-Bueno, J. C. Ballesteros, G. Trejo, *Electrochim. Acta*, 2018, **268**, 49–58.

[s8] C. Lin, Y. Zhao, H. Zhang, S. Xie, Y.-F. Li, X. Li, Z. Jiang, Z.-P. Liu, *Chem. Sci*., 2018, **9**, 6803–6812.

[s9] W. Gao, Z. Xia, F. Cao, J. C. Ho, Z. Jiang, Y. Qu, *Adv. Funct. Mater*., 2018, **28**, 1706056.

[s10] S. S. Narwade, S. M. Mali, R. V. Digraskar, V. S. Sapner, B. R. Sathe, *Int. J. Hydrogen Energy*, 2019, **44**, 27001–27009.