Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A
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Electronic Supplementary Information (ESI) for

Ordered mesoporous Co_3O_4 spinels as stable, bifunctional, noble metal-free oxygen electrocatalysts

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Table. S1 Comparison of experimental conditions and OER activities of catalysts

Sample	BET surface area ($m^2 g^{-1}$)	Catalyst loading ($mg_{cat} cm^{-2}$)	Elec-trolyte	Overpotential @ 10 mA cm^{-2} (mV)	Tafel slope ($mV\ dec^{-1}$)	Mass activity @ 1.6 V ($A\ g_{cat}^{-1}$)	Ref.
meso-Co_3O_4-35	135	0.10	0.1 M KOH	411	80	63	This work
meso-Co_3O_4-100	114	0.10	0.1 M KOH	426	66	53	This work
Co_3O_4 NPs	58	0.10	0.1 M KOH	449	63	31	This work
Commercial Co_3O_4	N/A	0.10	0.1 M KOH	N/A	85	8	This work
20 wt% Pt/C	N/A	0.10 (0.02) [a]	0.1 M KOH	634	250	9.8 (49) [a]	This work
20 wt% Ir/C	N/A	0.10 (0.02) [a]	0.1 M KOH	409	126	71.2 (356) [a]	This work
CoO/CNT	170	0.05	1 M KOH	550	108	43	[1]
Mesoporous Co_3O_4	156	0.13	0.1 M KOH	525	N/A	22	[2]
6 nm Co_3O_4 NPs	111	1.00	1 M KOH	328	~70	35	[3]

[a] Numbers in parenthesis are values normalized by weight of only metal (Pt or Ir).

References for Table 1

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2. H. Tüysüz, Y. J. Hwang, S. B. Khan, A. M. Asiri and P. Yang, *Nano Res.*, 2013, **6**, 47–54.
3. A. J. Esswein, M. J. McMurdo, P. N. Ross, A. T. Bell and T. D. Tilley, *J. Phys. Chem. C*, 2009, **113**, 15068–15072.

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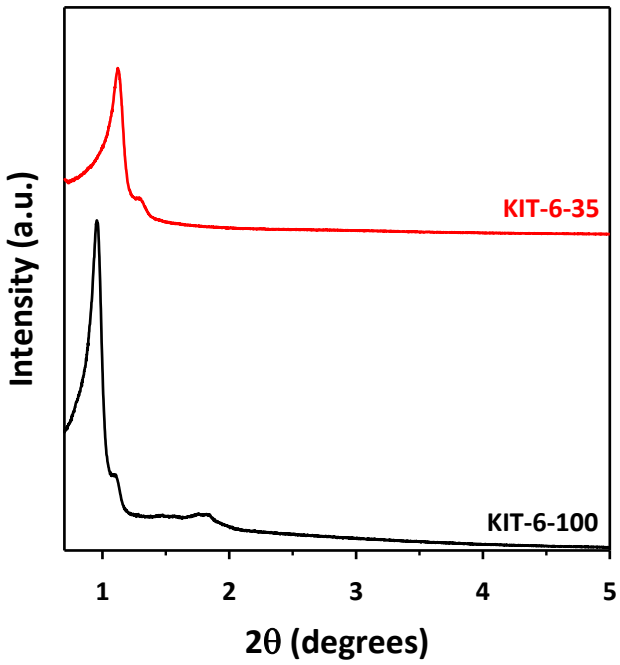

Fig. S1 Low-angle XRD patterns for KIT-6 silica templates.

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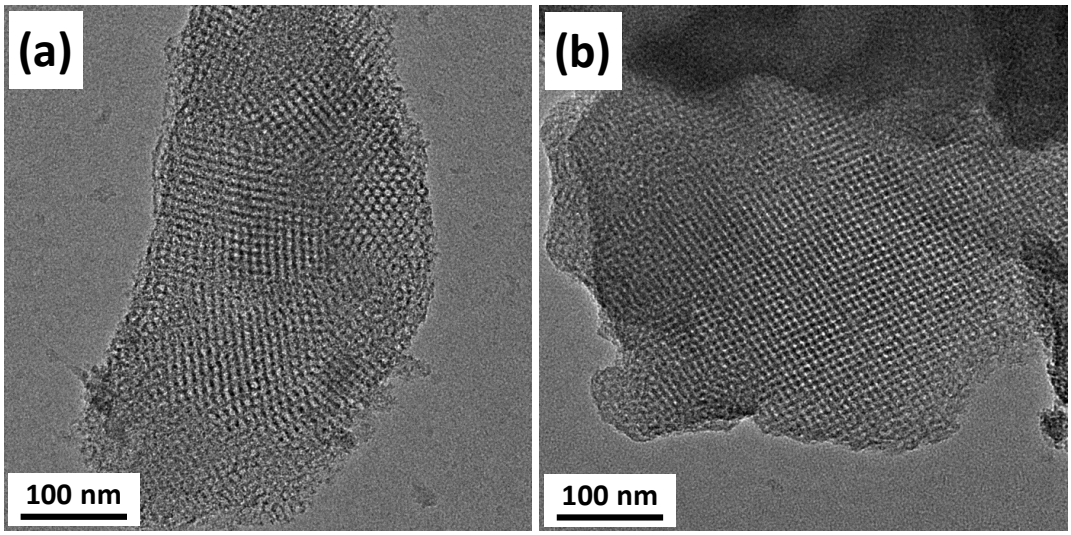

Fig. S2 TEM images of (a) KIT-6-100 and (b) KIT-6-35 silica templates.

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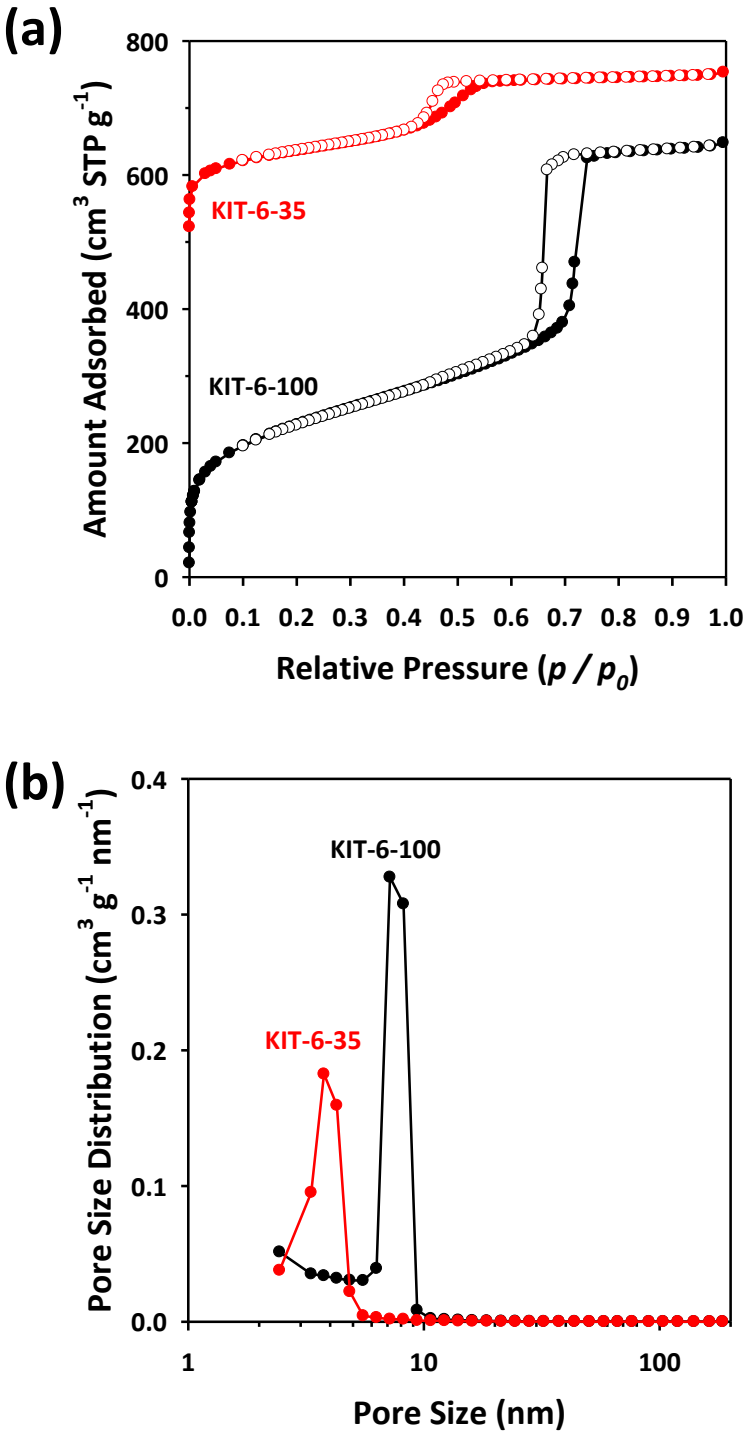

Fig. S3 (a) Nitrogen adsorption-desorption isotherms for KIT-6 silica templates. The adsorption data for KIT-6-35 was offset vertically by 500 cm^3 g^{-1}. (b) The corresponding pore size distribution curves from adsorption branches of the isotherms.

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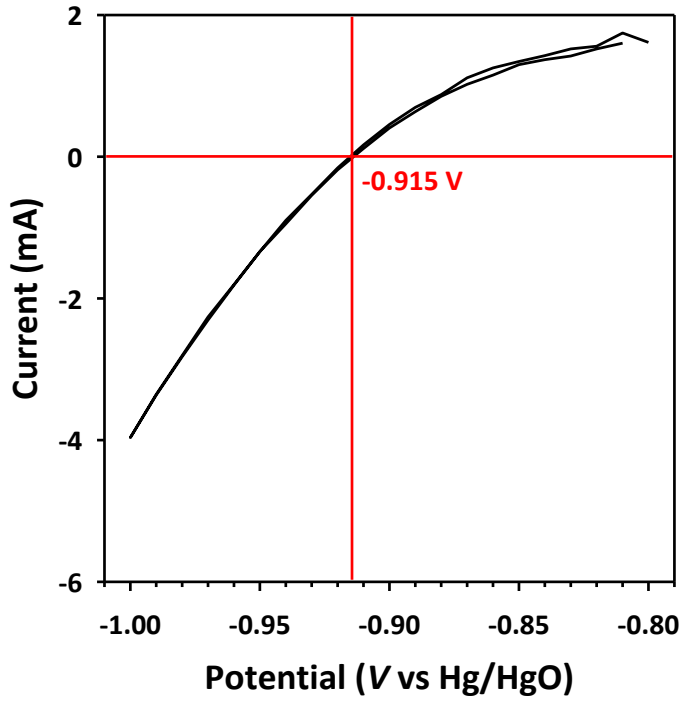

Fig. S4 Plot showing the calibration of an Hg/HgO reference electrode conducted with respect to the RHE

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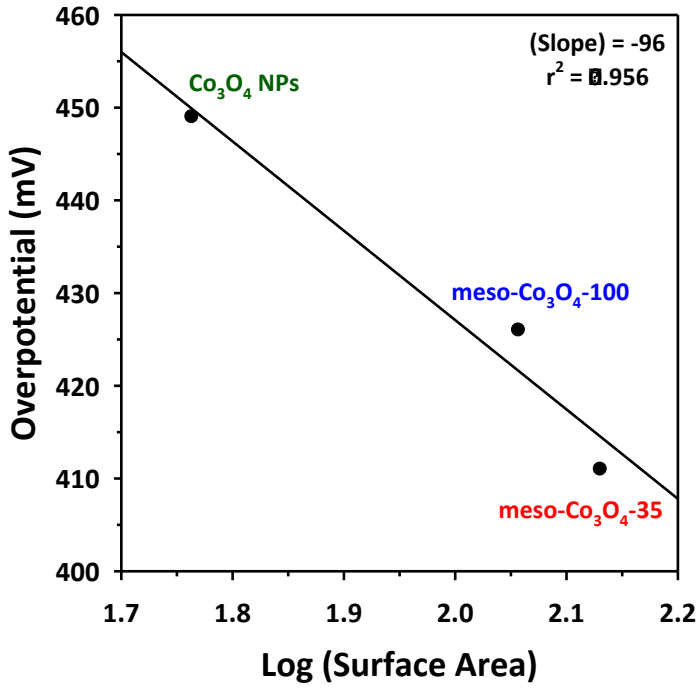

Fig. S5 Plot showing overpotentials for OER polarization at a current density of 10 mA cm^{-2} against the log of the BET surface areas of Co-based catalysts.