Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information for:

The evolution of hierarchical porosity in self-templated nitrogen-doped carbons used as oxygen reduction electrocatalysts

David Eisenberg,[a] Pepijn Prinsen,[a] Norbert J. Geels,[a] Wowa Stroek,[a] Ning Yan,[a] Bin Hua,[b] Jing-Li Luo,[b] and Gadi Rothenberg[a]

[a] *Van't Hoff Institute for Molecular Sciences, University of Amsterdam, Science Park 904, 1098 XH, Amsterdam, The Netherlands. Email: d.eisenberg@uva.nl, g.rothenberg@uva.nl; Tel: +31-20-5256963*
[b] *Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, T6G 2V4, Canada*

	C	H	N	Mg
C600	76.51	1.85	4.89	0.21
C700	78.26	1.85	5.59	0.31
C800	80.32	1.69	5.69	0.27
C900	80.23	1.60	4.61	0.35
C1000	81.20	1.71	4.03	0.24

Table S1. Elemental analysis of the MgNTA-derived carbons. Values in wt%.

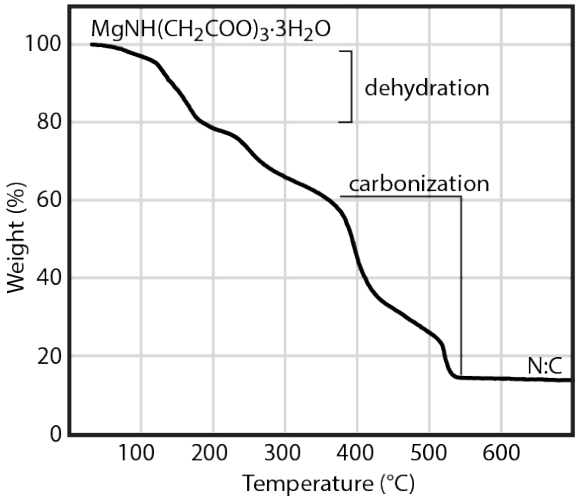

Figure S1. Thermal gravimetric analysis of MgNTA in argon, heating rate 20 °C/min. Identical results were obtained at a slower heating rate(10 °C/min).

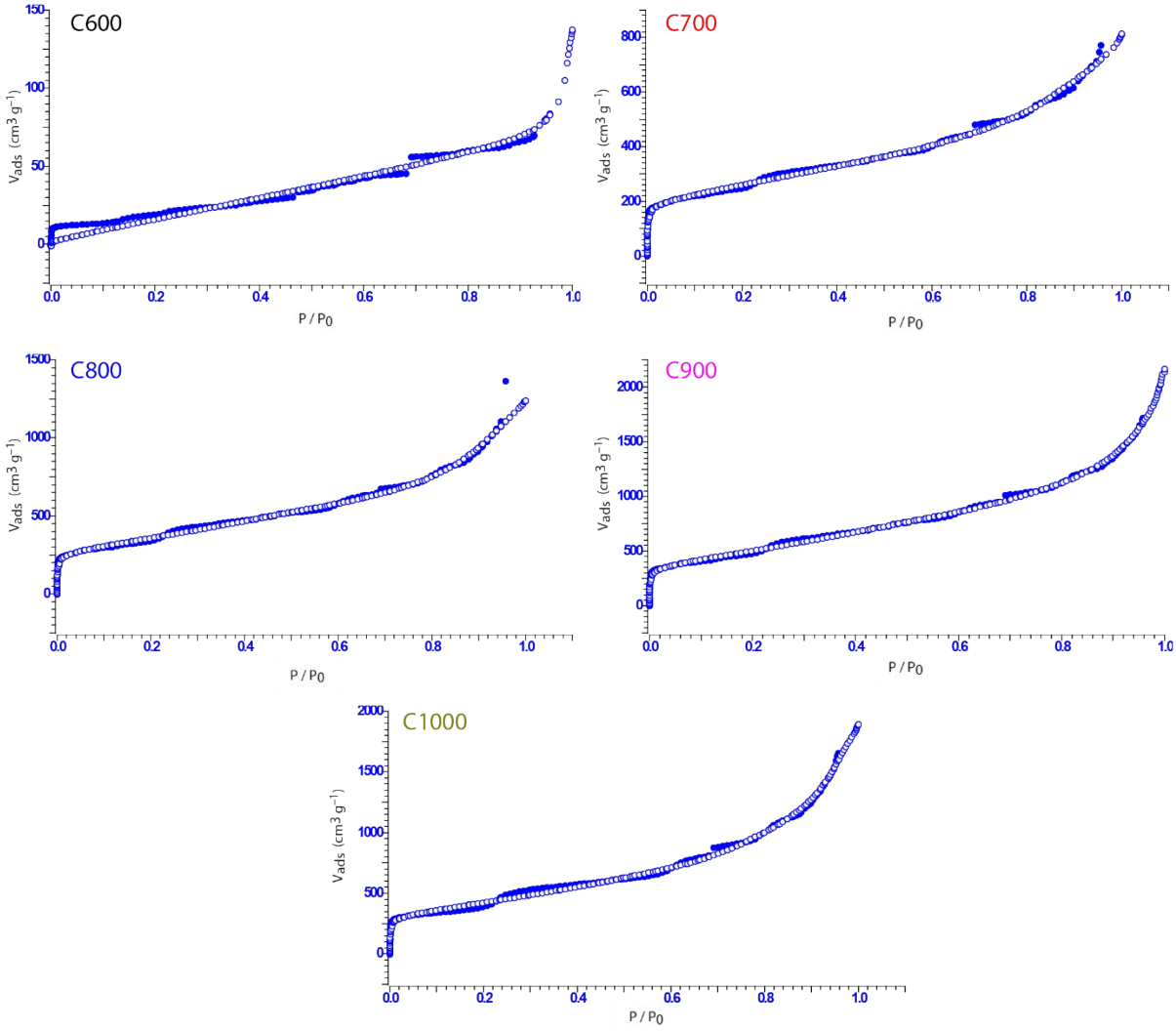

Figure S2. N_2 adsorption-desorption isotherms at 77K (full circles) on the different carbons, and the corresponding NLDFT-simulated isotherms (hollow circles), assuming N_2/graphite and slit-shape pores.

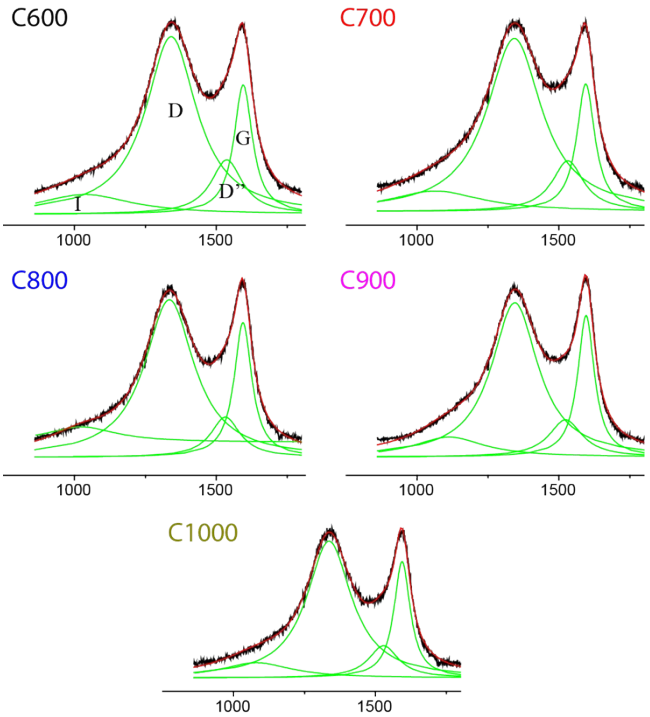

Figure S3. First-order Raman spectra of the 5 carbons, fitted with G, D, D'' and I bands.

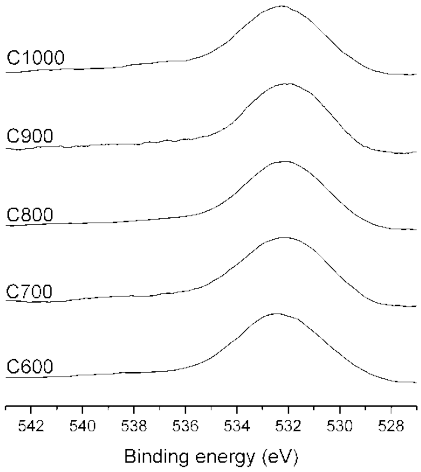

Figure S4. X-ray photoelectron spectra of carbons C600–C1000 in the O 1s region.

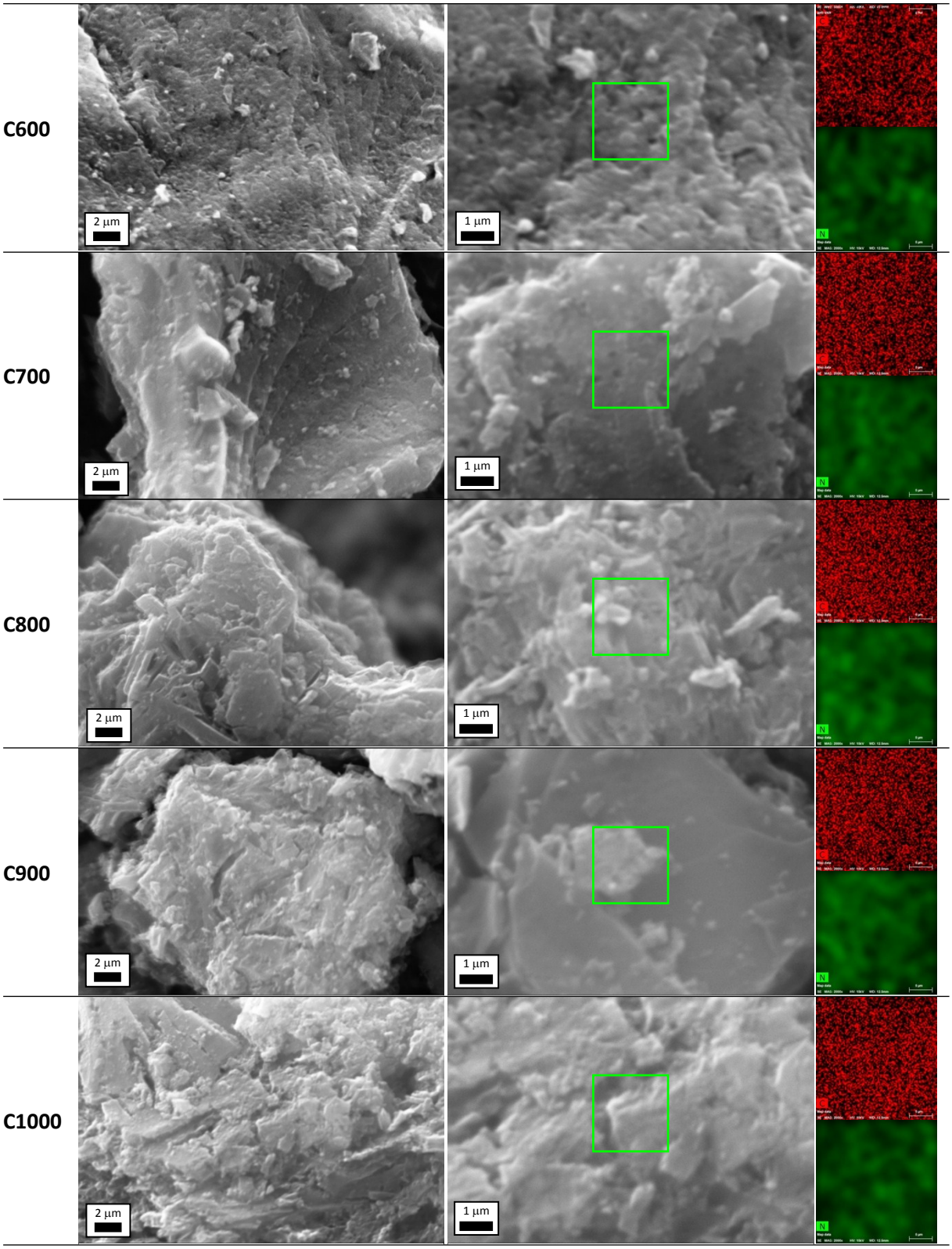

Figure S5. Scanning electron micrographs of carbons C600–C1000, and energy dispersive X-ray spectroscopy (EDS) maps of carbon (red) and nitrogen (dark green) in the areas marked by a green square.

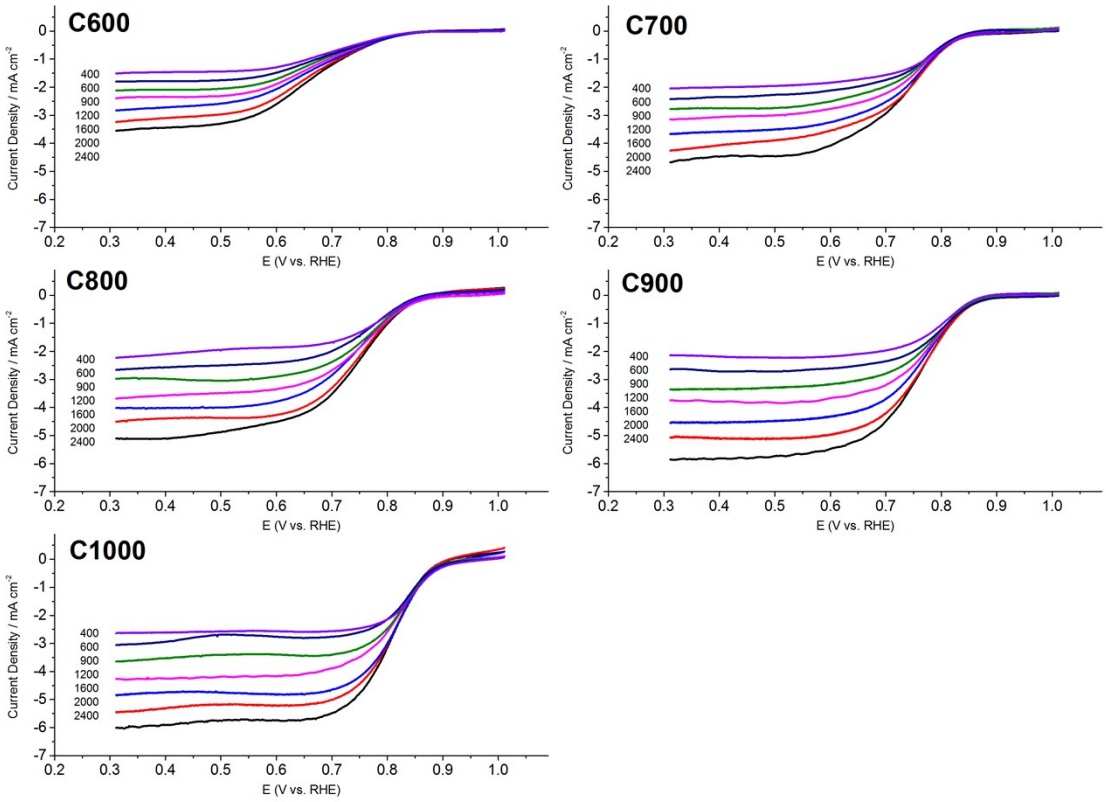

Figure S6. Rotating disk electrode LSVs of ORR electrocatalysis in 0.1 M KOH along the carbon series, at different rotation speeds in rpm, 10 mV/s.