

Supporting info

Understanding the self-templating of hierarchically porous carbon electrocatalysts using Group 2 coordination polymers

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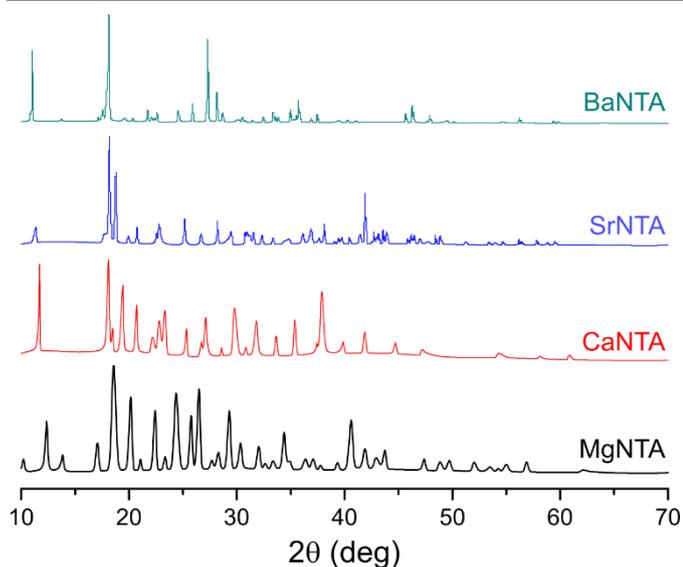


Figure S1: Powder X-ray diffractograms of the Group 2 MOCPs (M-NTA). The patterns are not matched by any reported structures of alkaline earth metal coordination polymers, nor by any of the synthesis precursors.

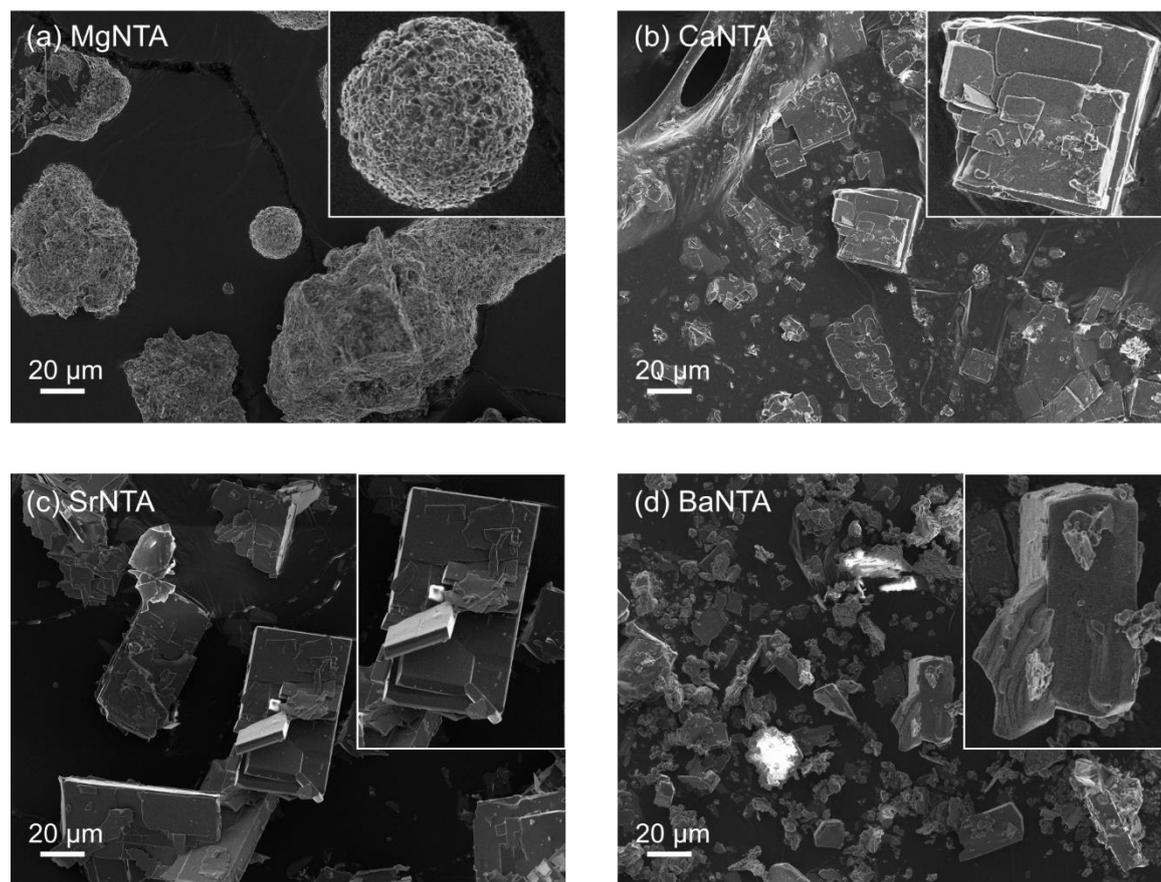


Figure S2: Low magnification SEM of the crystalline powders of the four Group 2 MOCs (M-NTA). The insets show single, representative particles.

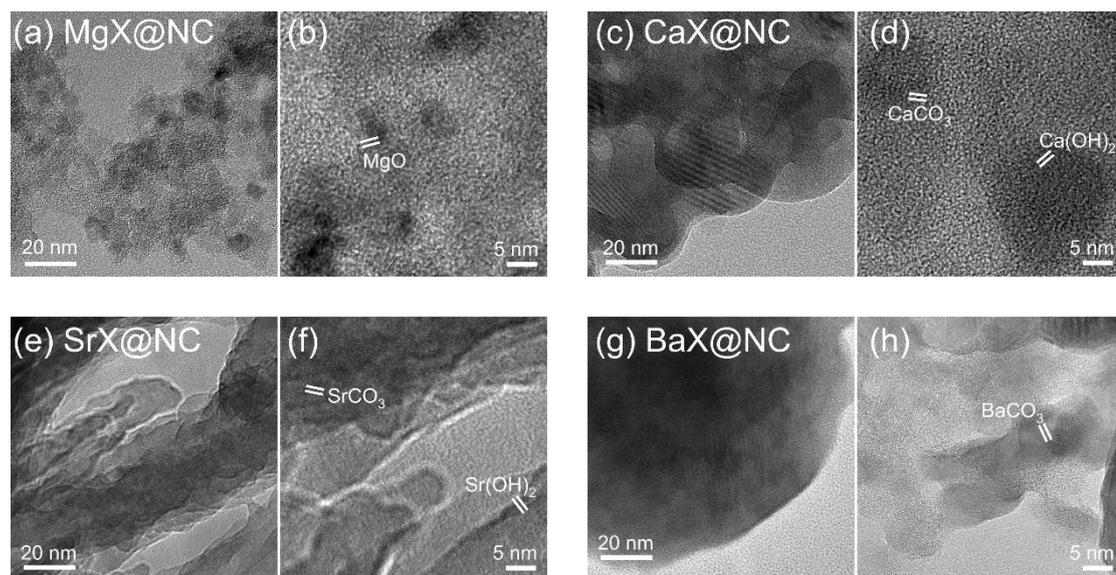


Figure S3: Additional transmission electron micrographs of MX@NC composites.

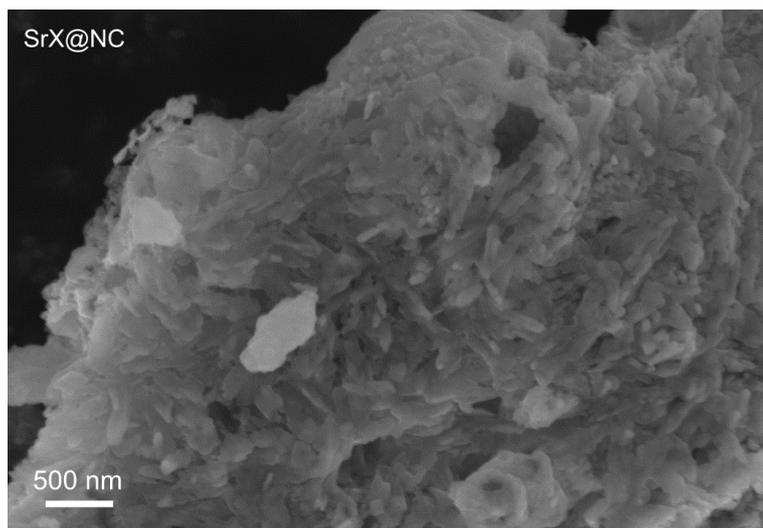


Figure S4: HRSEM of SrX@NC, showing the agglomeration of elongated crystallites in one region.

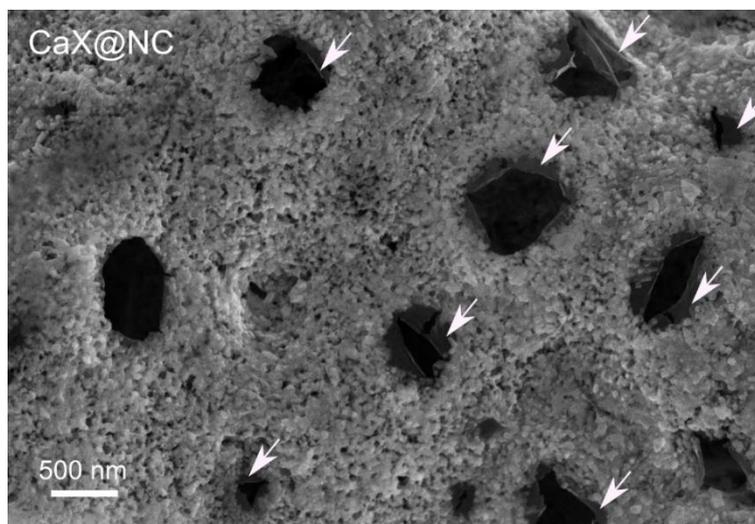


Figure S5: HRSEM of CaX@NC, with arrows marking translucent films at the edges of pores.

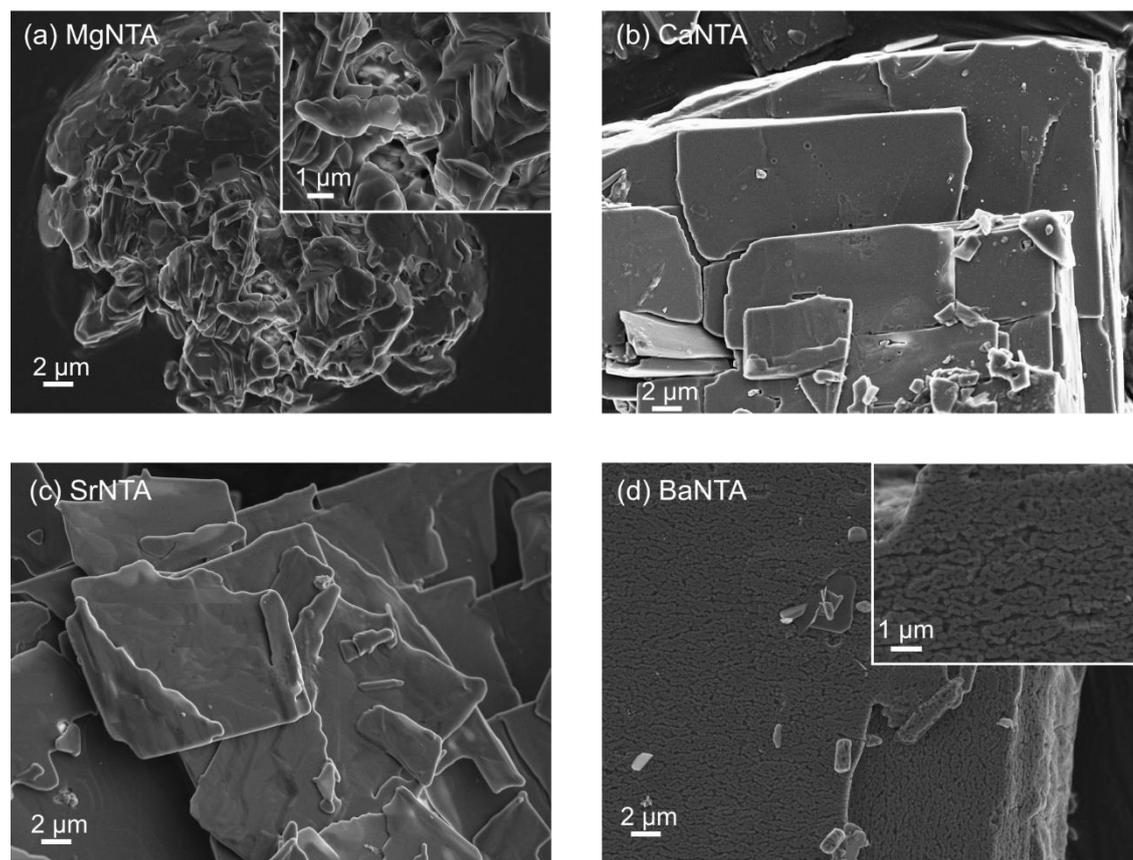


Figure S6: Additional HRSEM micrographs of M-NTA crystallites.

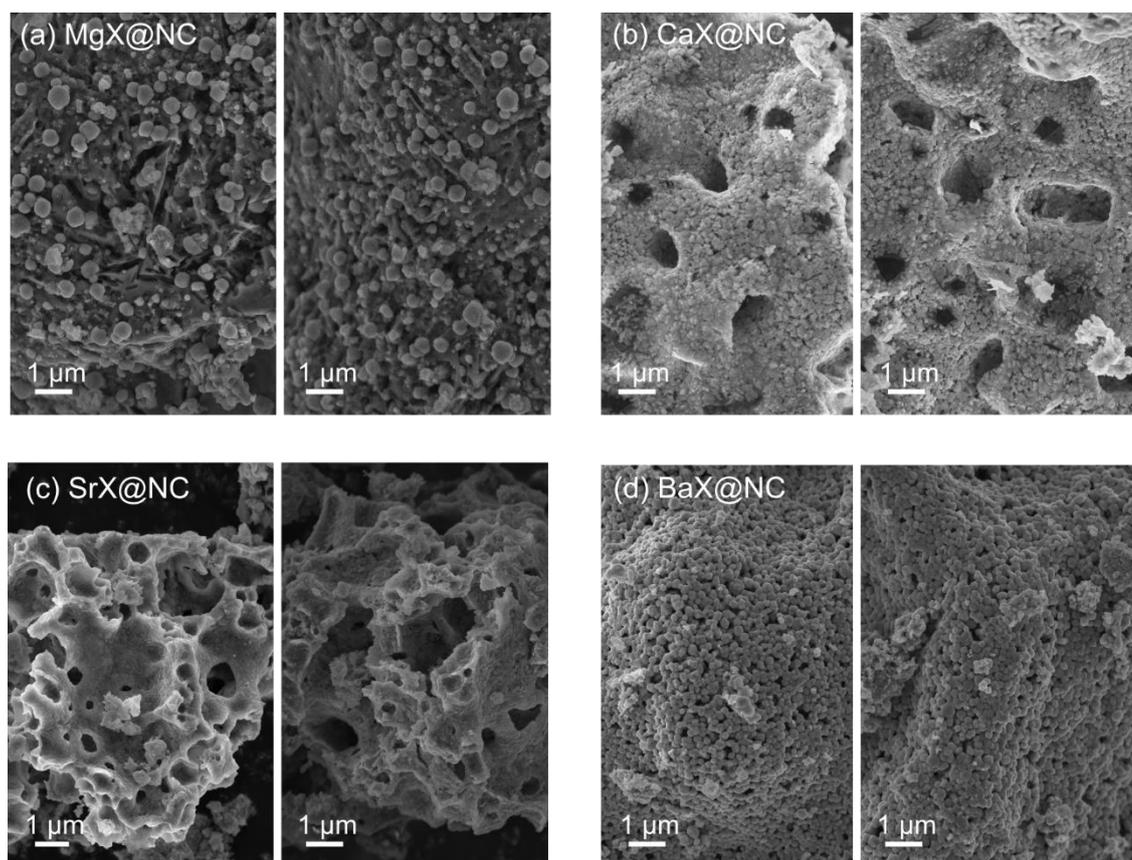


Figure S7: Additional HRSEM micrographs of MX@NC composites.

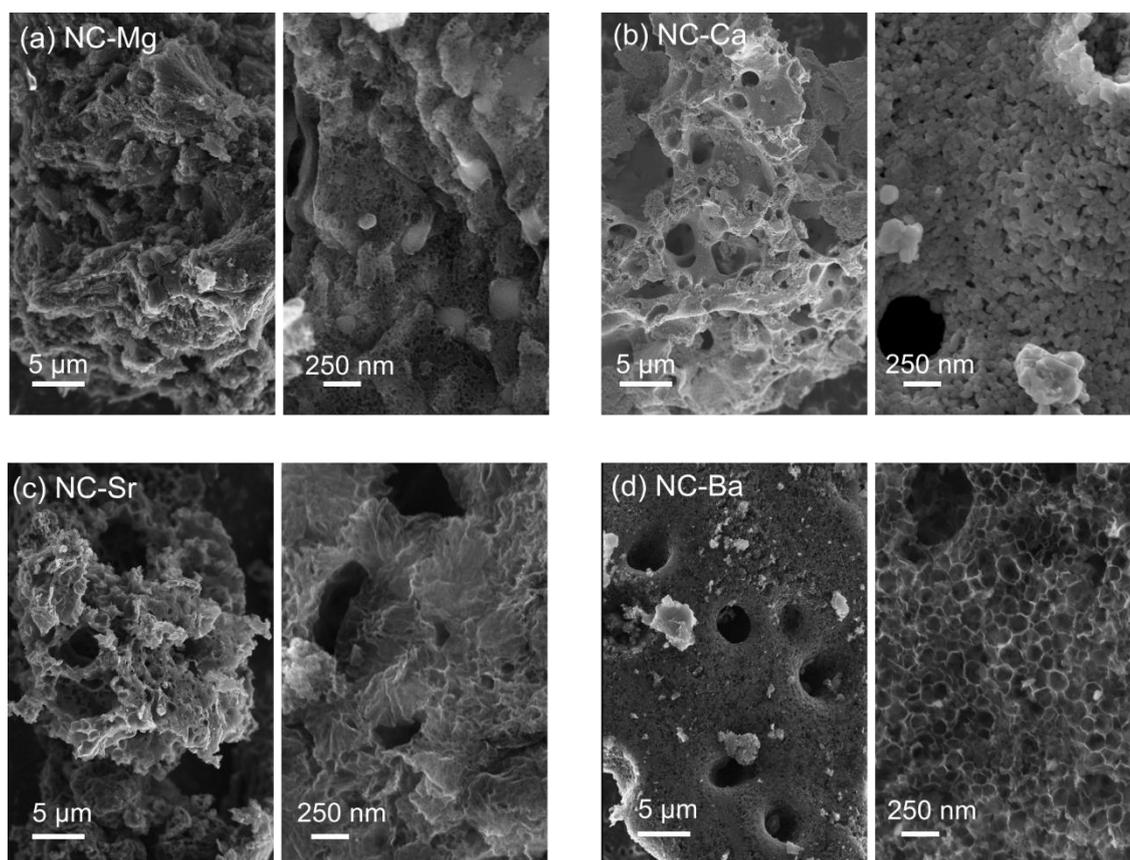


Figure S8: Additional HRSEM micrographs of NC-M carbons.

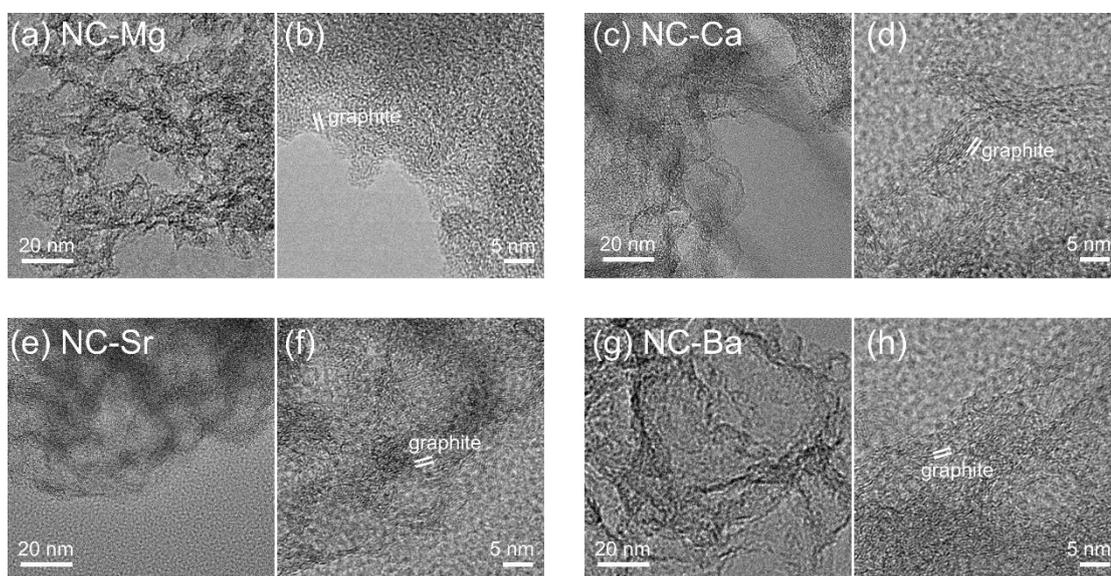


Figure S9: Transmission electron micrographs of NC-M carbons.

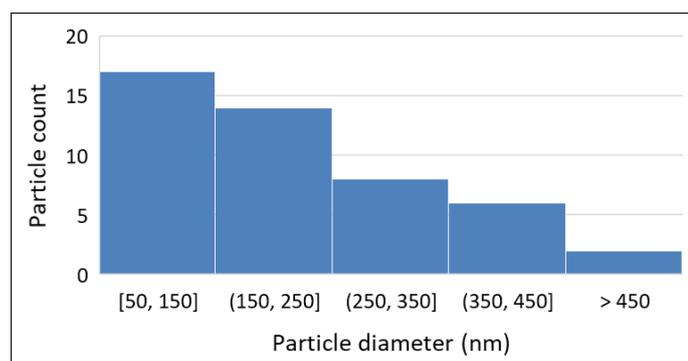


Figure S10: Particle size distribution of MgO in MgX@NC, by image analysis of representative micrographs.

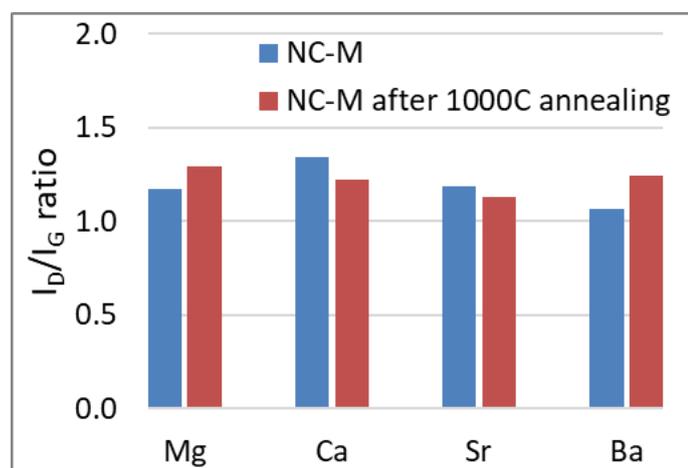


Figure S11: Raman I_D/I_G ratios for the NC-M carbons.

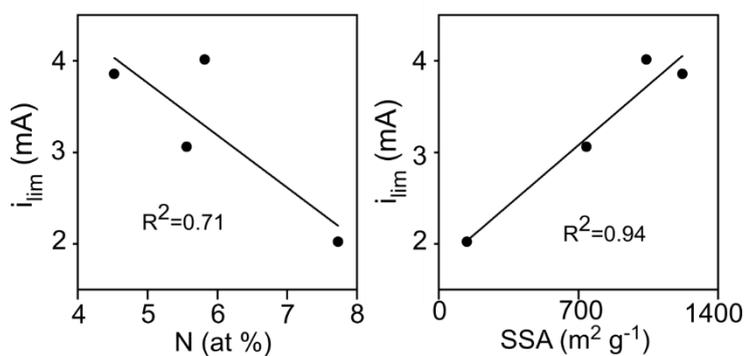


Figure S12: Limiting current vs N at% and vs SSA. Neither is as good a fit as vs the multiplicity of the two, as seen in the paper.

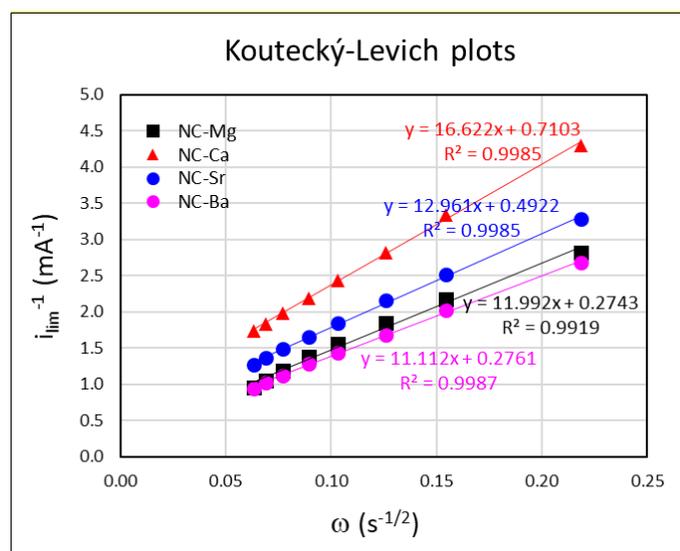


Figure S13: Koutecký-Levich plot for the NC-M carbons at 0.7 V vs. RHE, performed on an RDE at rotation rates of 200–2400 rpm.

Table S1. Results of Koutecký-Levich analysis of n (number of electrons transferred per O_2 molecule) for the NC-M carbons at 0.7 V vs. RHE.

	n
NC-Mg	3.85
NC Ca	2.78
NC-Sr	3.56
NC-Ba	4.15