Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supporting Information

Concentration-dependent effects of nickel doping on activated carbon biocathodes

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Figure S1

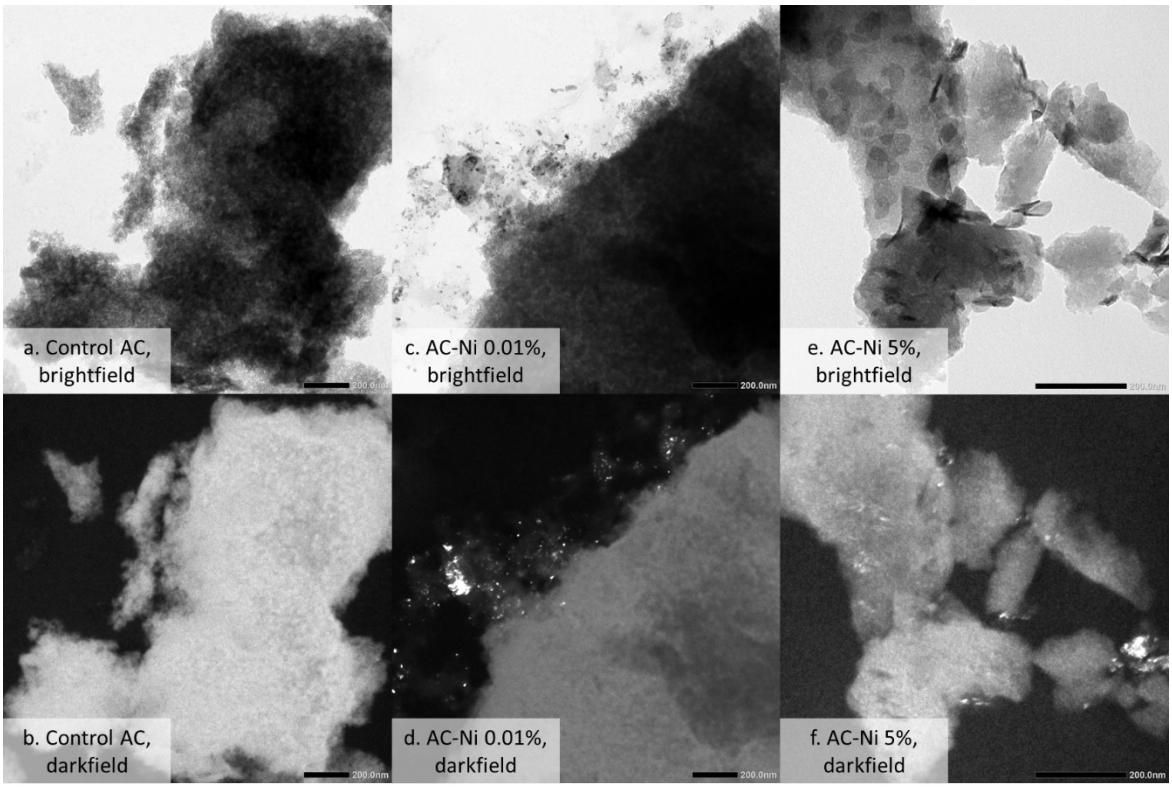

Figure S1: Transmission Electron Microscopy images of AC granules, non-impregnated (a, b), impregnated with 0.01% (c, d) and with 5% nickel (e, f). Both brightfield (top row) and darkfield (bottom row) mode were tested, to determine the distribution of the nickel nanostructures. Nanostructures were evident as bright spots in images of both low and high metal loadings (d, f), with a non-homogeneous distribution, mainly found on amorphous carbon, which likely detached from more crystalline regions of the activated carbon support during mild crushing of the AC granules for visualization with TEM. After crushing, AC powder was suspended in hexanol and briefly ultrasonicated, to ensure good dispersion of the powder. Samples were dried and visualized as previously described. [1] All scale bars in this figure correspond to 200,0 nm.

Figure S2

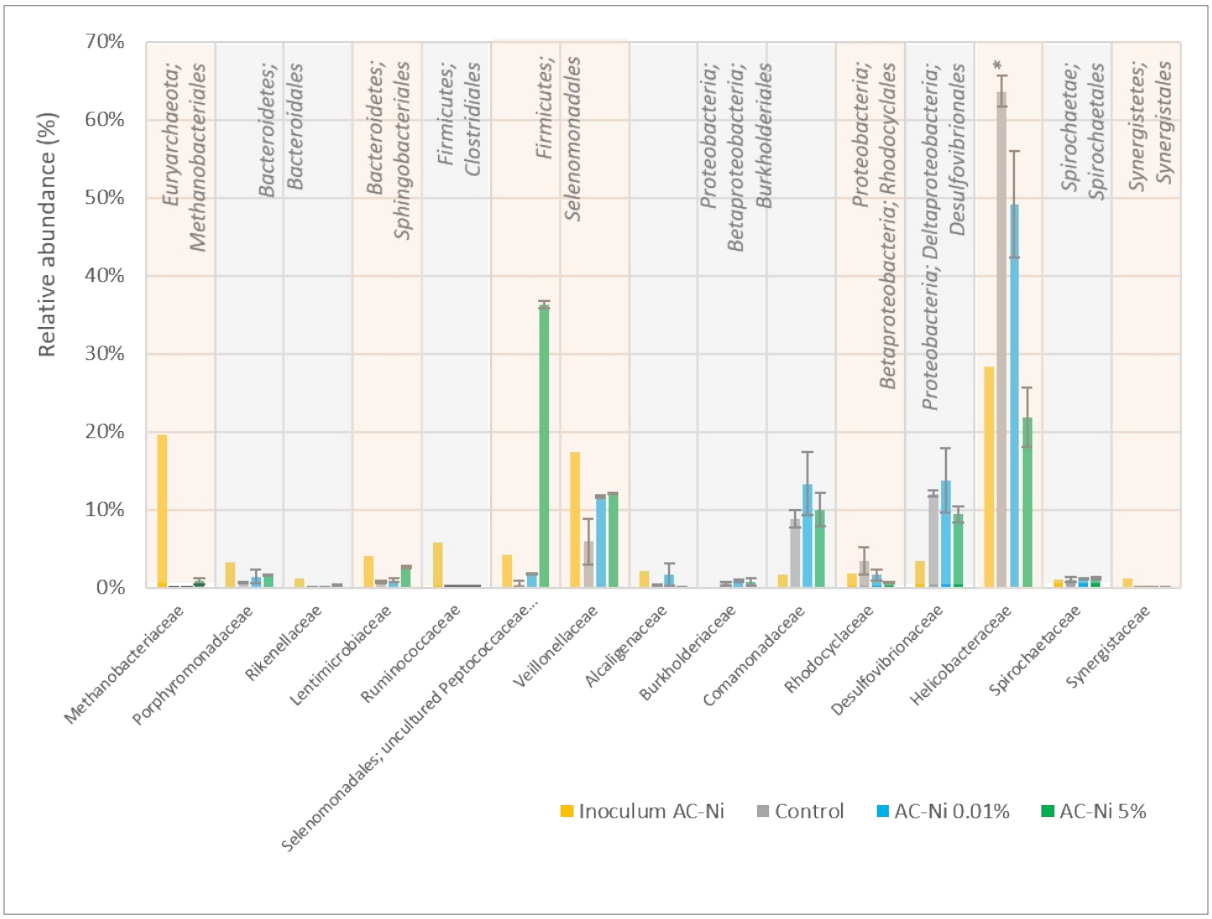

*Figure S2: Relative abundance of microorganisms in the inoculum and in experimental reactors at the Family level. The Phylum, Class (for Proteobacteria) and Order are also shown for each Family on the top part of the graph. * Proteobacteria; Epsilonproteobacteria; Campylobacterales.*

Figure S3

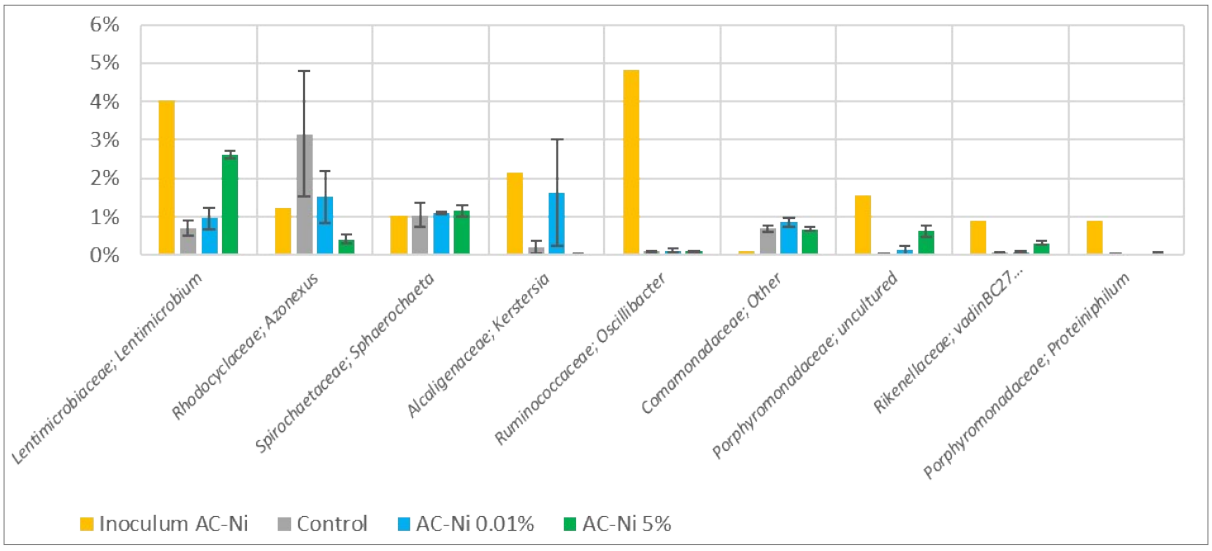

Figure S3: Non-dominant genera with contribution of over 1% identified in the inoculum and in experimental reactors (average values based on duplicate reactors).

Figure S4

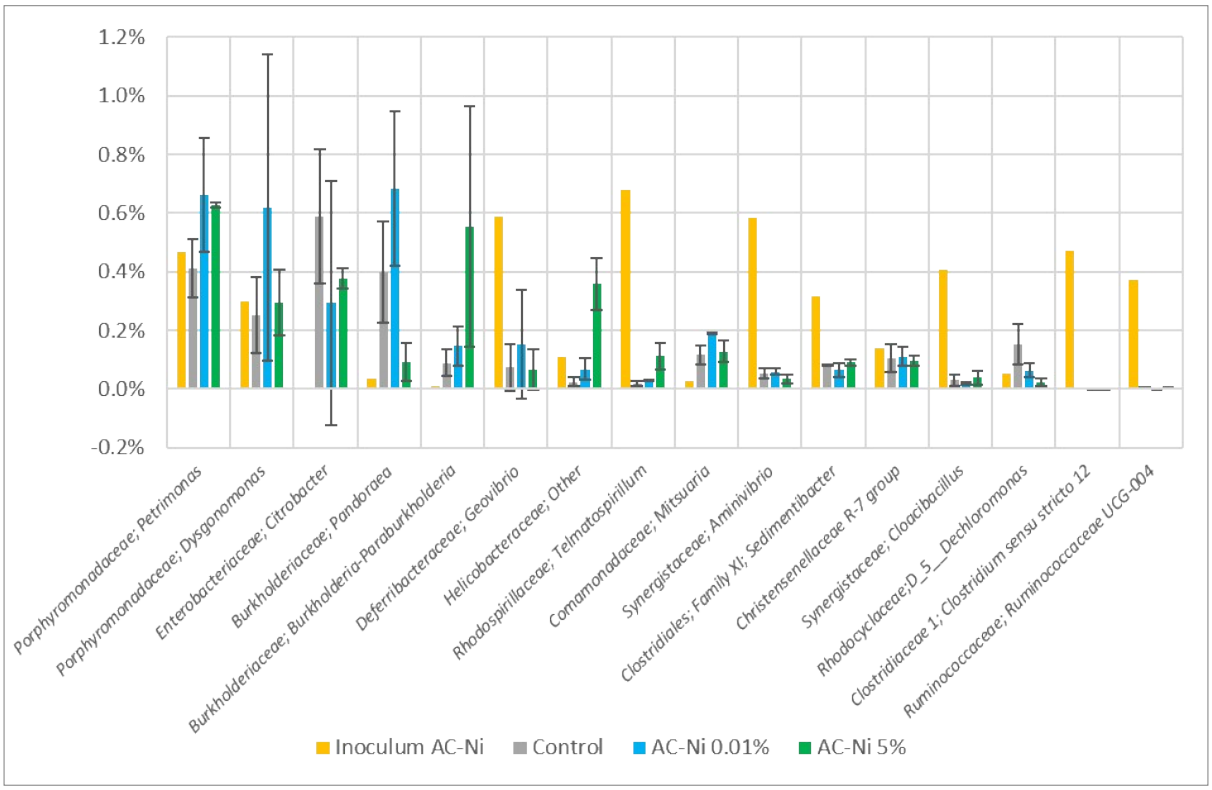

Figure S4: Non-dominant genera identified in the inoculum and in experimental reactors (average values based on duplicate reactors), with contribution of less than 1%.

References

1. F. van der Klis, J. van Haveren, D. S. van Es and J. H. Bitter, *ChemSusChem*. 2017, **10**, 1460.