Elucidating the synergistic mechanism of Ni-Mo electrocatalysts for the hydrogen evolution reaction

- Supporting Information -

Ian S. McKay^a*, Jay A. Schwalbe ^{a,b}*, Emmett Goodman^a, Joshua Willis^a, Arun Majumdar^c, Matteo Cargnello^{a,b,1}

^aDepartment of Chemical Engineering, Stanford University, Stanford, CA 94305 (USA)
^bSUNCAT Center for Interface Science and Catalysis, Stanford University, Stanford, CA 94305 (USA).

^cDepartment of Mechanical Engineering, Stanford University, Stanford, CA 94305 (USA). *These authors contributed equally to this work.

¹Correspondence to: mcargnello@stanford.edu

Keywords: hydrogen, nickel, molybdenum, electrocatalysis, functional oxides

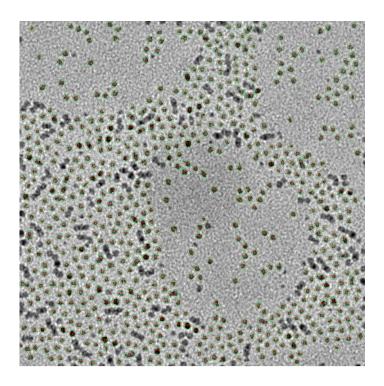


Figure S1. Illustrative example of the particle sizing protocol used in this study.

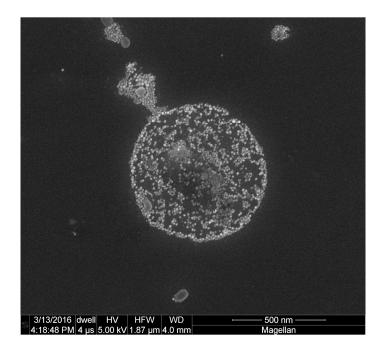


Figure S2. Le Vrai Petit Prince: an example of the islanding of Ni NC on a Ti substrate

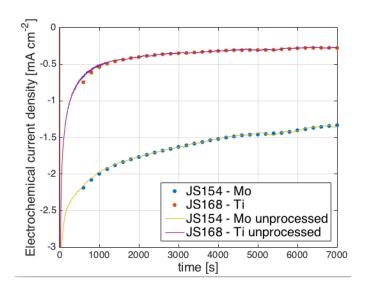


Figure S3. The effect of median filtering used in Figures 3 and 4.

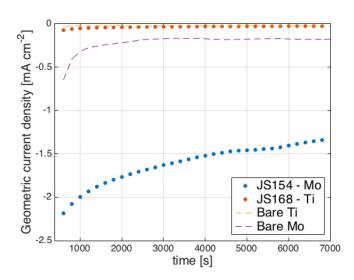


Figure S4. The activities in Figure 3 are consistent with those in Figure 4 when they are normalized by geometric area, rather than by electrochemical area.

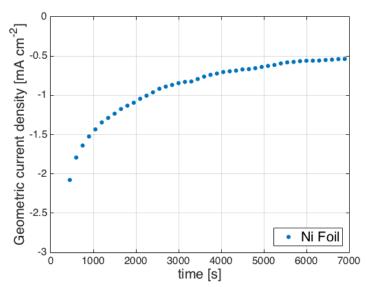


Figure S5. The electrocatalytic performance of a clean Ni foil (Aldrich) under the same conditions as the other tests described in this work: -0.27 V vs. the regular hydrogen electrode in an H₂-purged, unstirred 2M KOH electrolyte.