

Supporting Information

Top-Down Syntheses of Nickel-Based Structured Catalysts for Hydrogen Production from Ammonia

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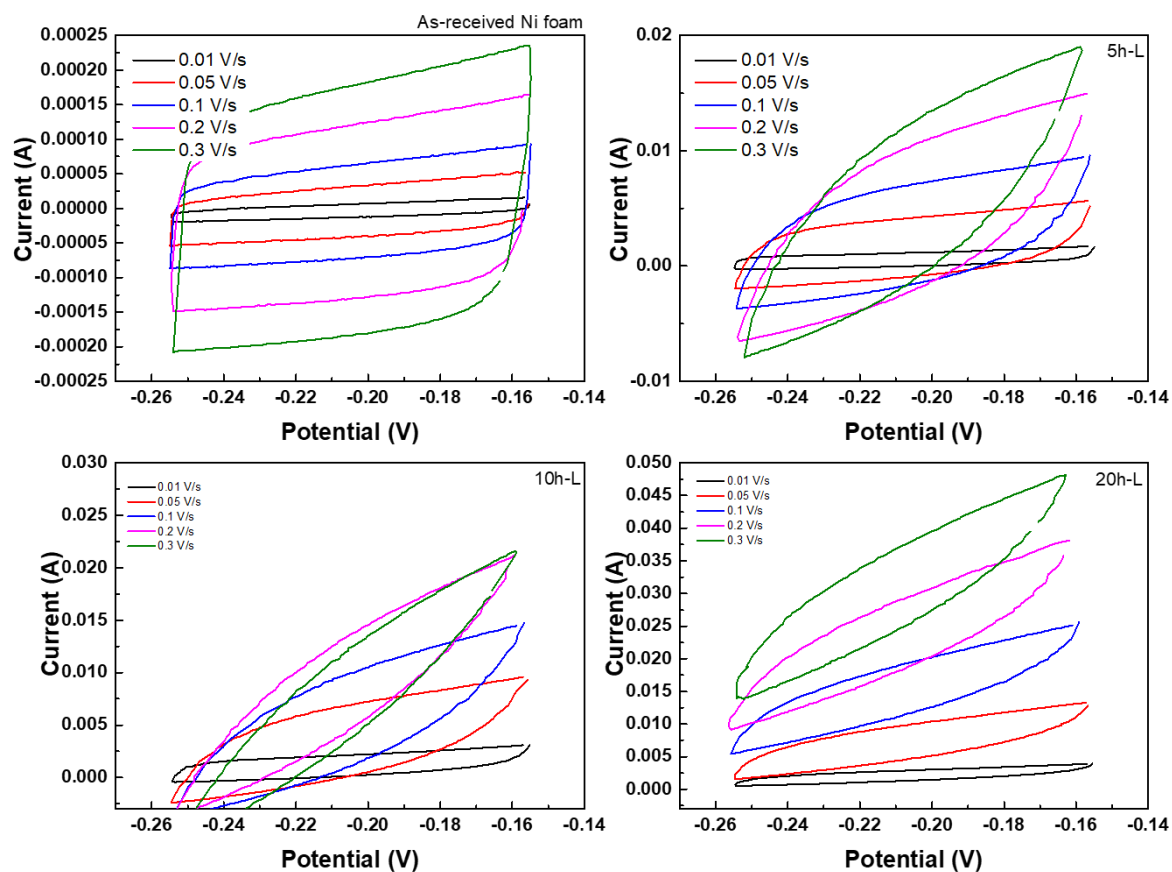


Figure S1. Cyclic voltammetry graphs of the as-received Ni foam, 5 h-L, 10 h-L, and 20 h-L in 0.5 M KOH solution at different scan rates.

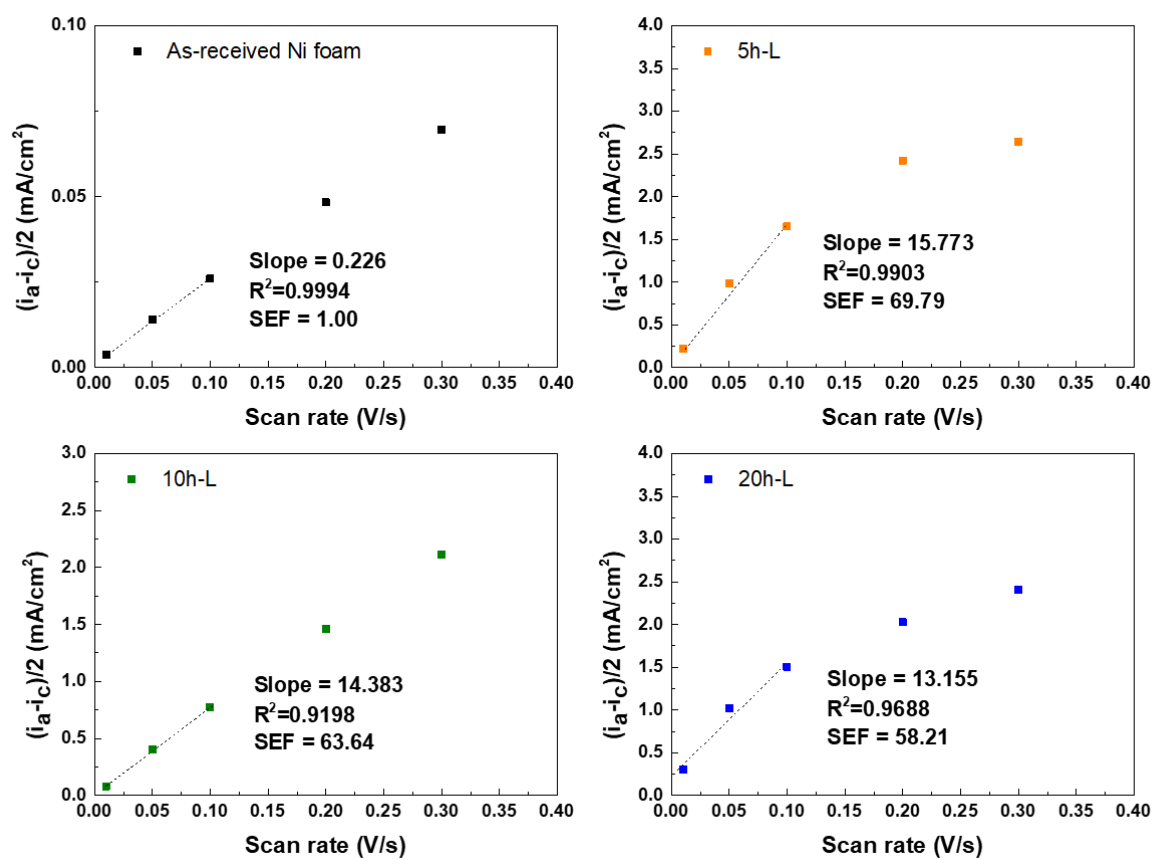


Figure S2. $(i_a - i_c)/2$ at a center voltage of -0.205V vs. scan rate (V/s) graphs derived from **Figure S1**.

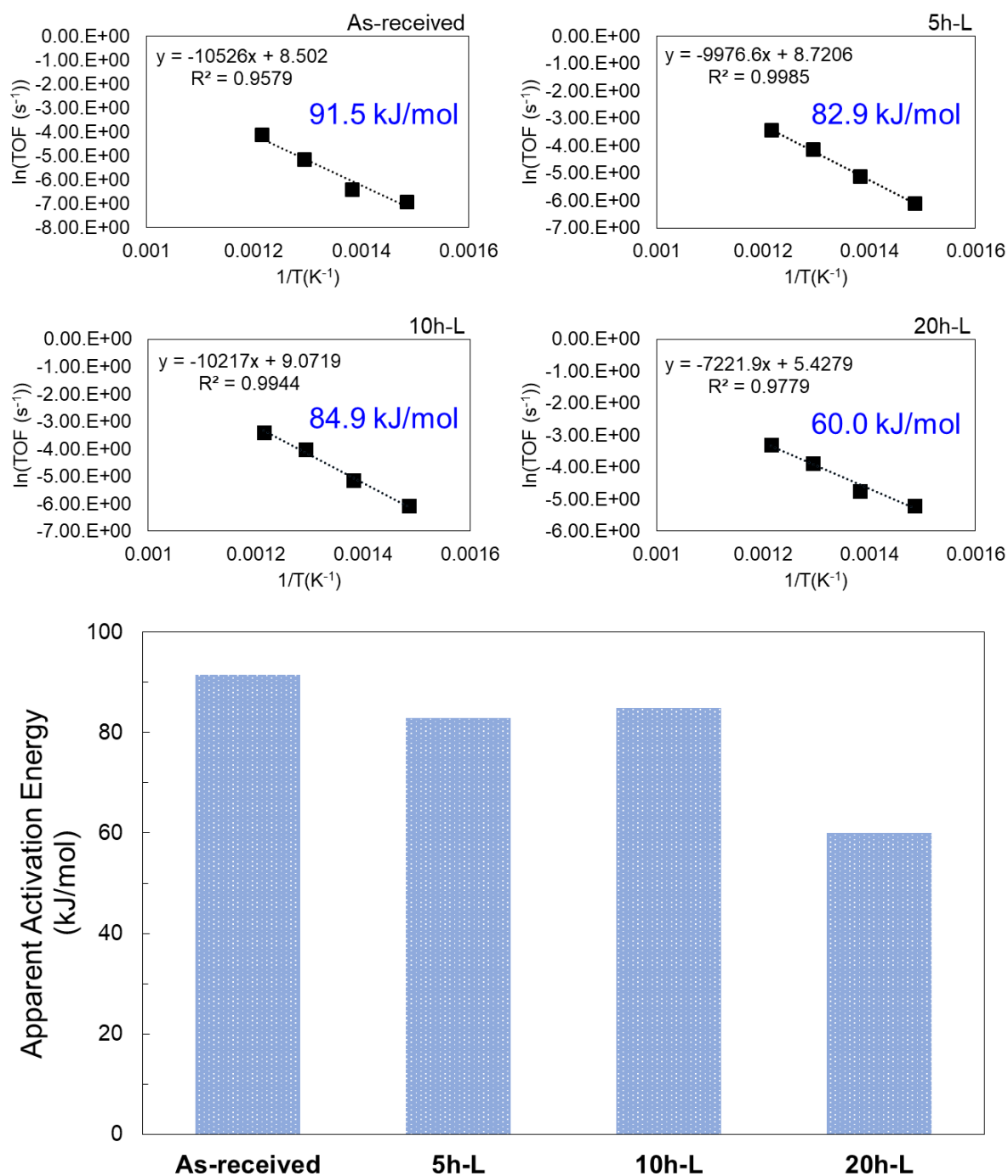


Figure S3. Apparent activation energy of as-received Ni foam, 5 h-L, 10 h-L, and 20 h-L catalysts calculated from **Figure 3a**.

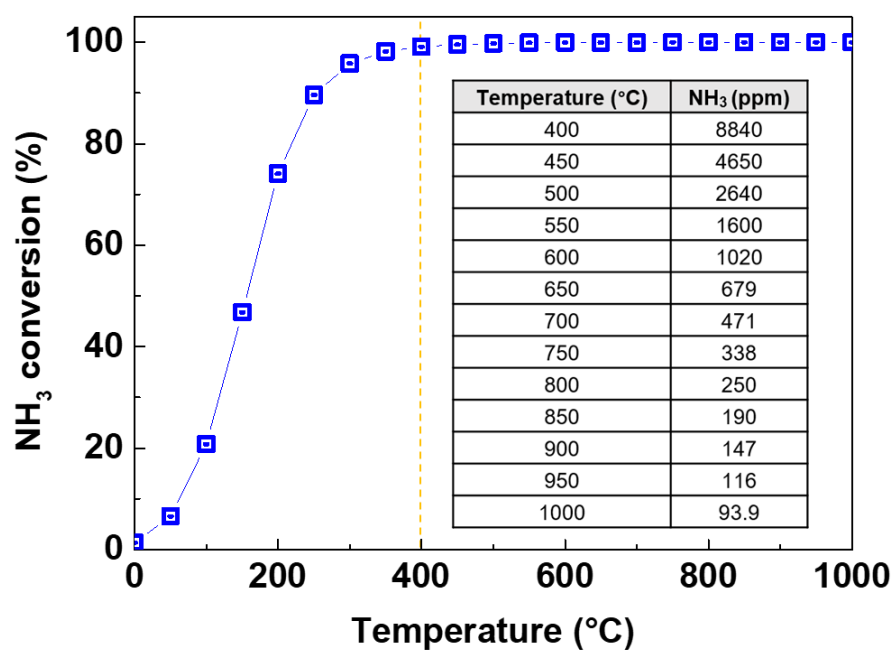


Figure S4. Thermodynamic equilibrium of ammonia, nitrogen and hydrogen at 0 °C–1000 °C calculated using HSC Chemistry 10 by Gibbs energy minimization method. (inset: the calculated value of residue ammonia concentration in ppm).

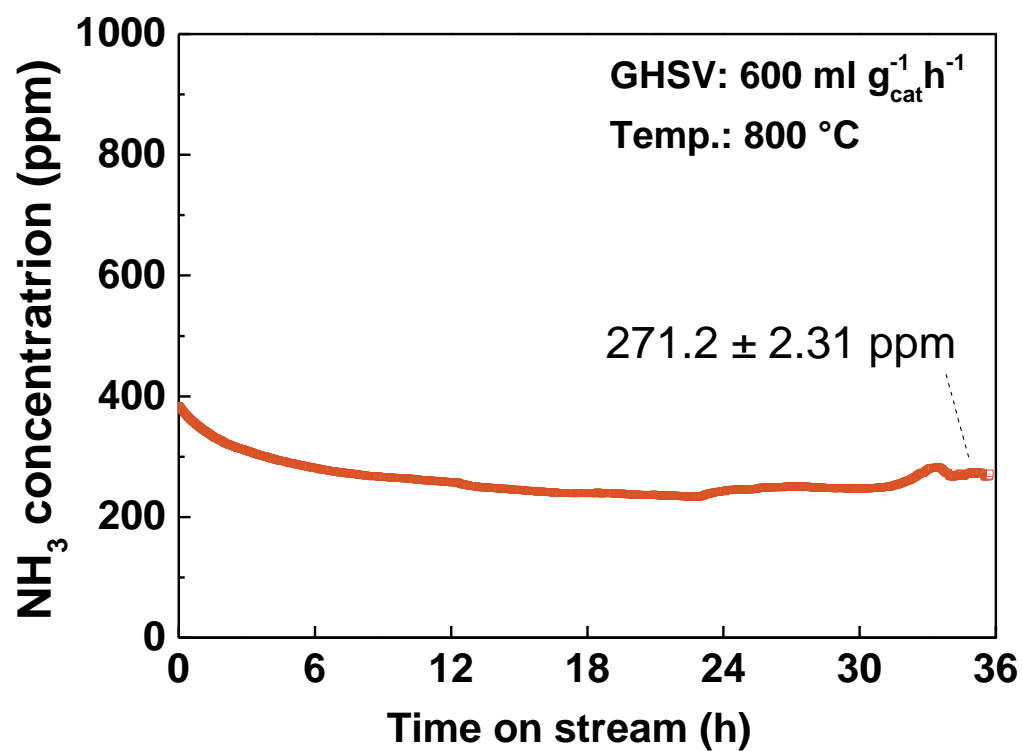


Figure S5. High-temperature durability test of the 20 h-L catalyst sample operating for 36 h at a temperature of 800 °C and GHSV of 600 ml g_{cat}⁻¹h⁻¹.

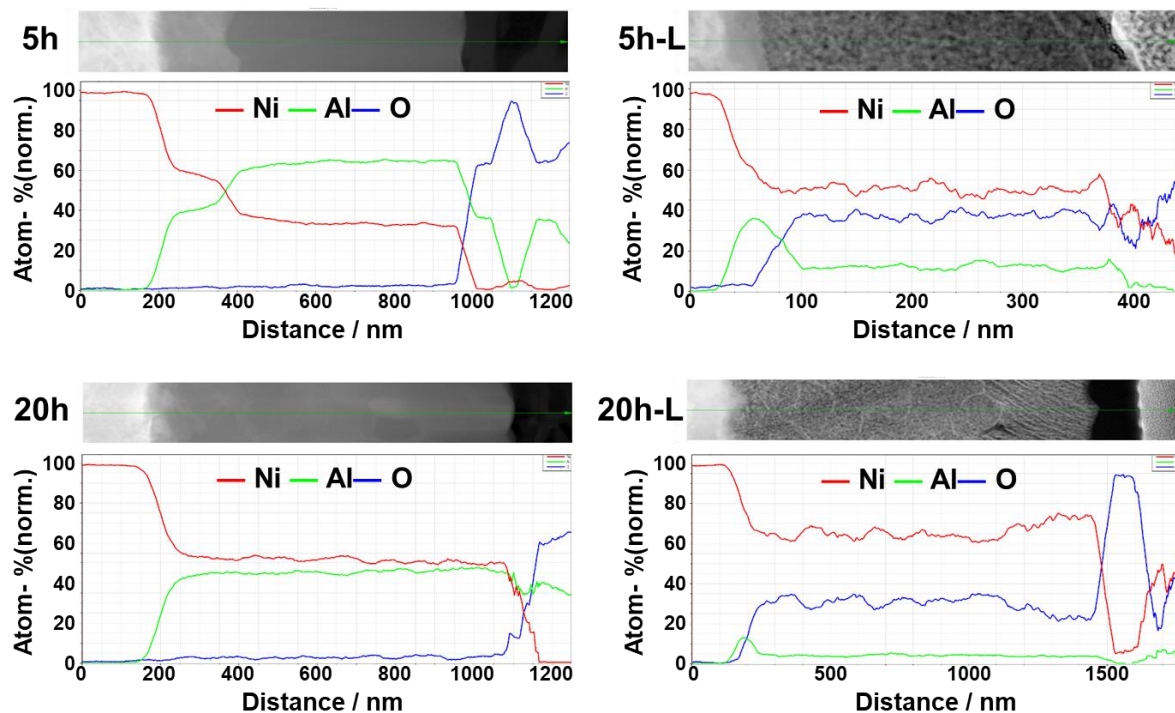


Figure S6. EDS line-scanning profiles of each sample (red, Ni; green, Al; blue, O) corresponding to TEM images of the samples (**Figure 4**).