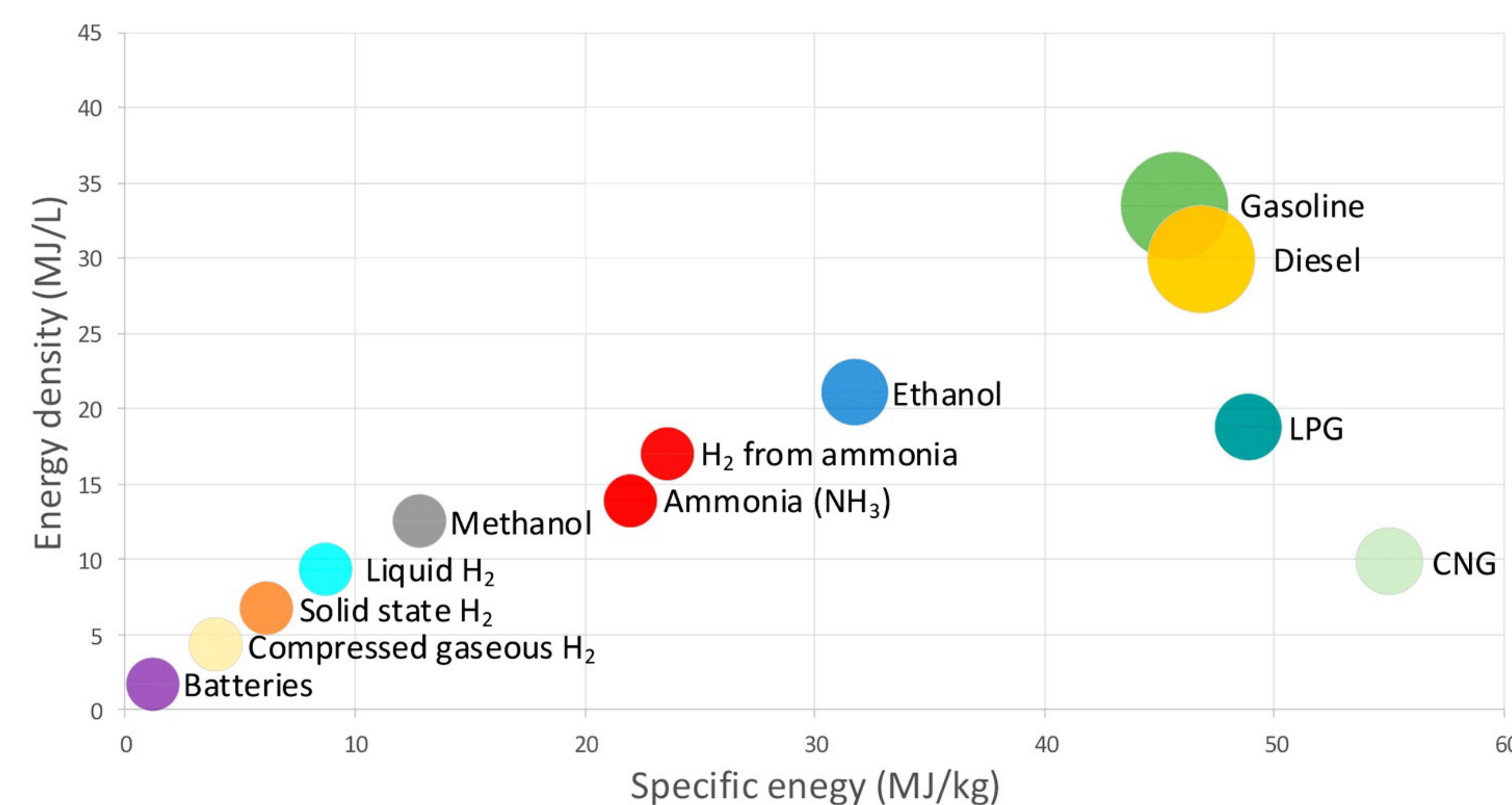
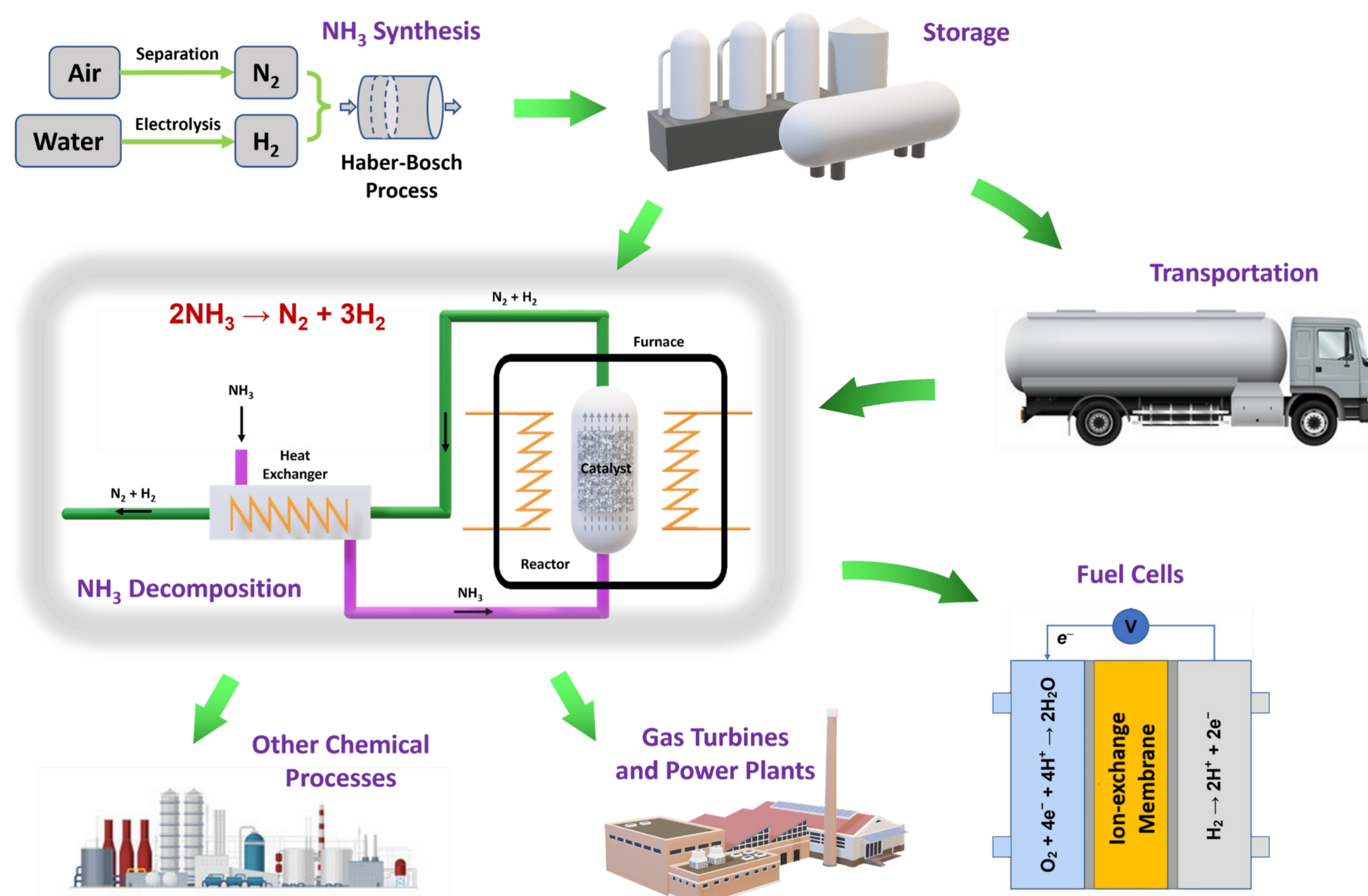


Efficient Ammonia Decomposition Using PGM-Free High-Entropy Alloy Catalysts

Chao Wang¹, Yannis Kevrekidis¹, Liangbing Hu², Jeffrey Greeley³

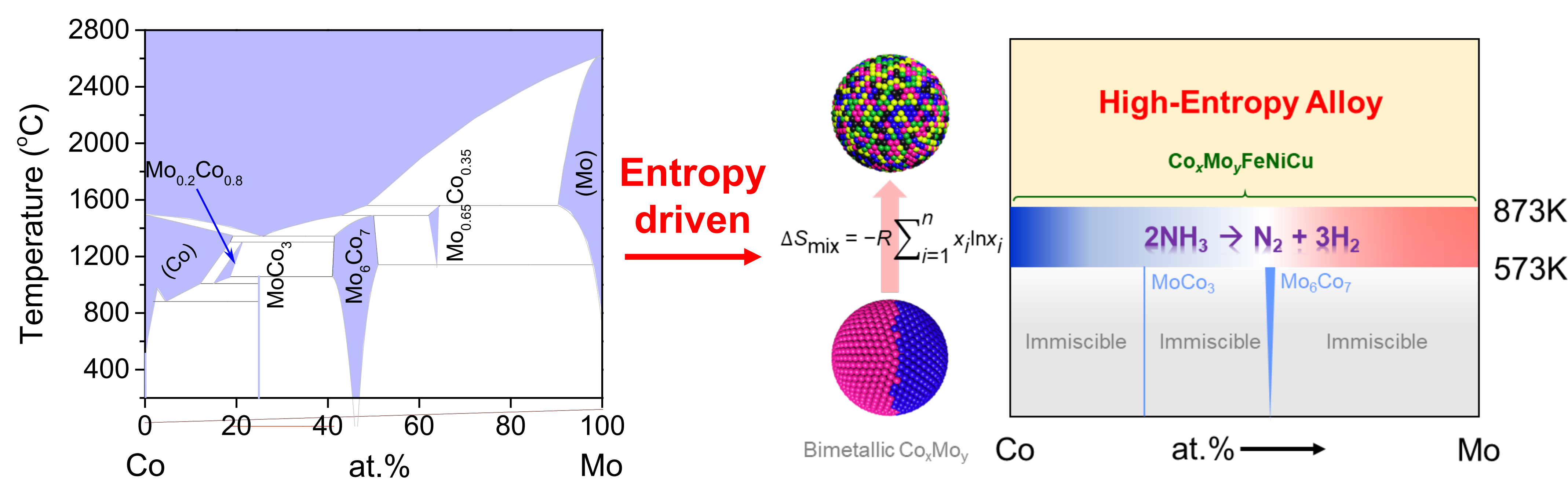
¹ Johns Hopkins University; ² University of Maryland; ³ Purdue University

NH₃ as a Liquid Carrier of Hydrogen

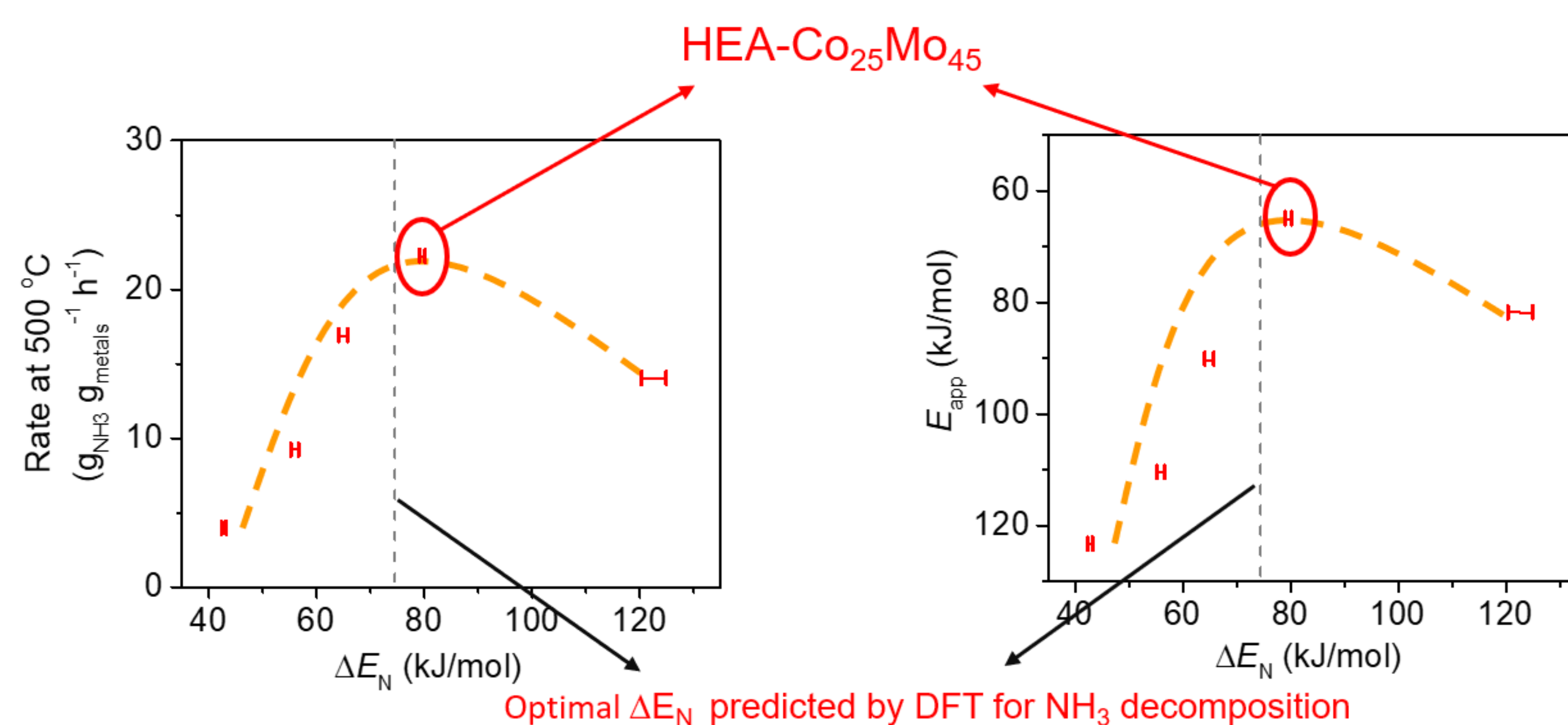
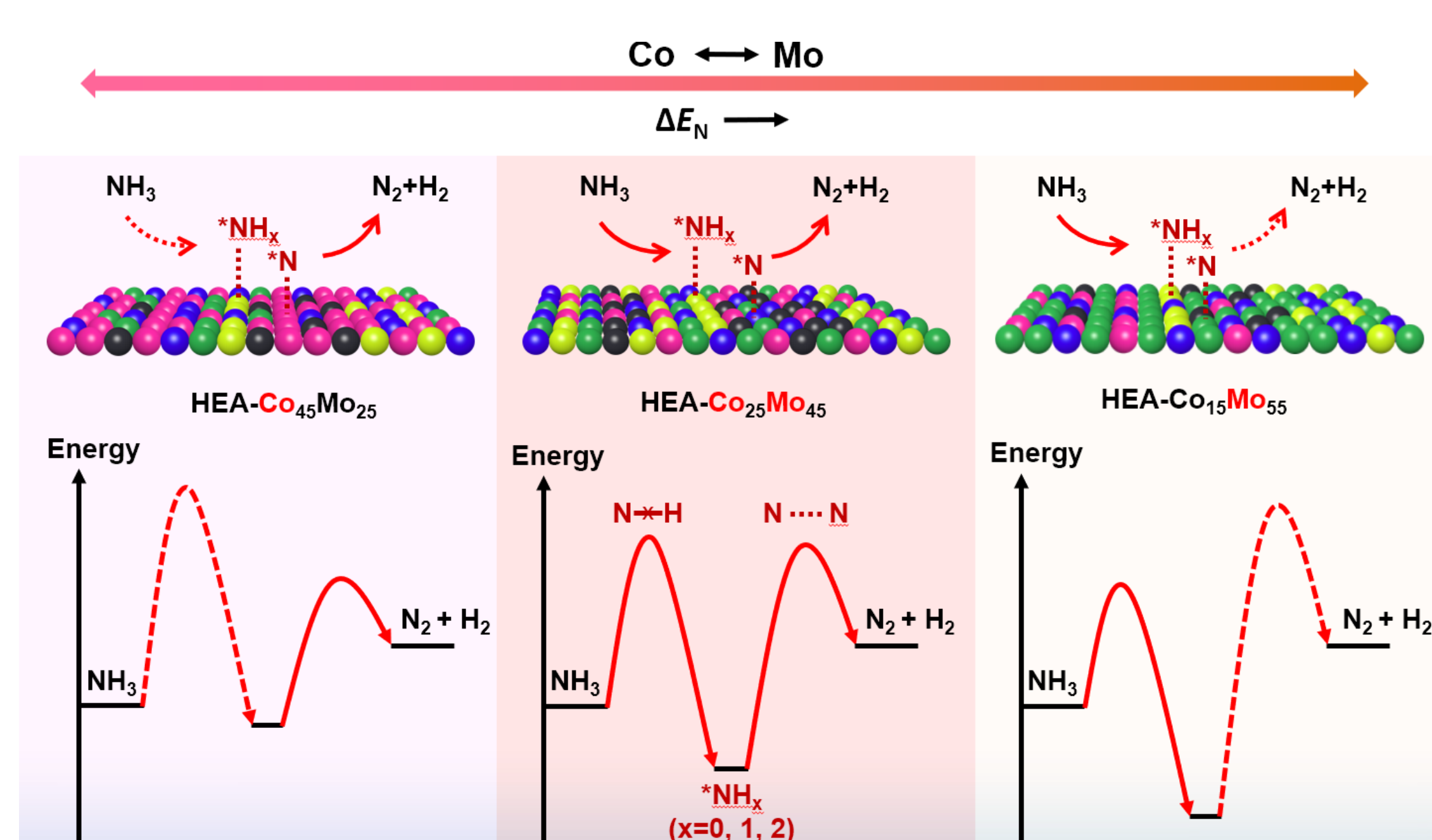


- High energy density and high specific energy
 - 4.25 kWh/L
 - 5.2 kWh/kg
- Easy to liquefy
 - >10 bar at room temperature
 - or below -33 °C at atmospheric pressure

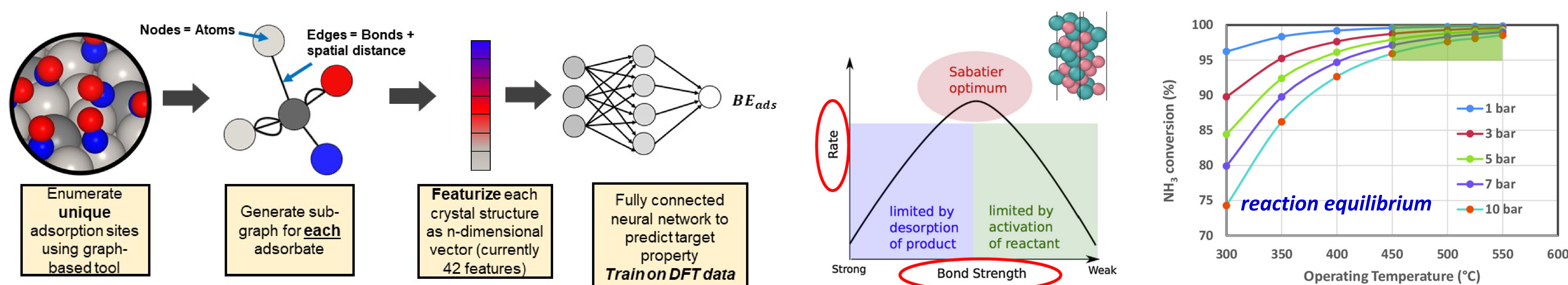
High-Entropy Alloy (HEA) Catalysts for NH₃ Decomposition



- Robust tuning of alloy compositions and mitigation of miscibility gap
- Optimization of surface properties for catalytic enhancement



Machine Learning for Predictive Simulation of Composition-Property Relationships



Team & Funding