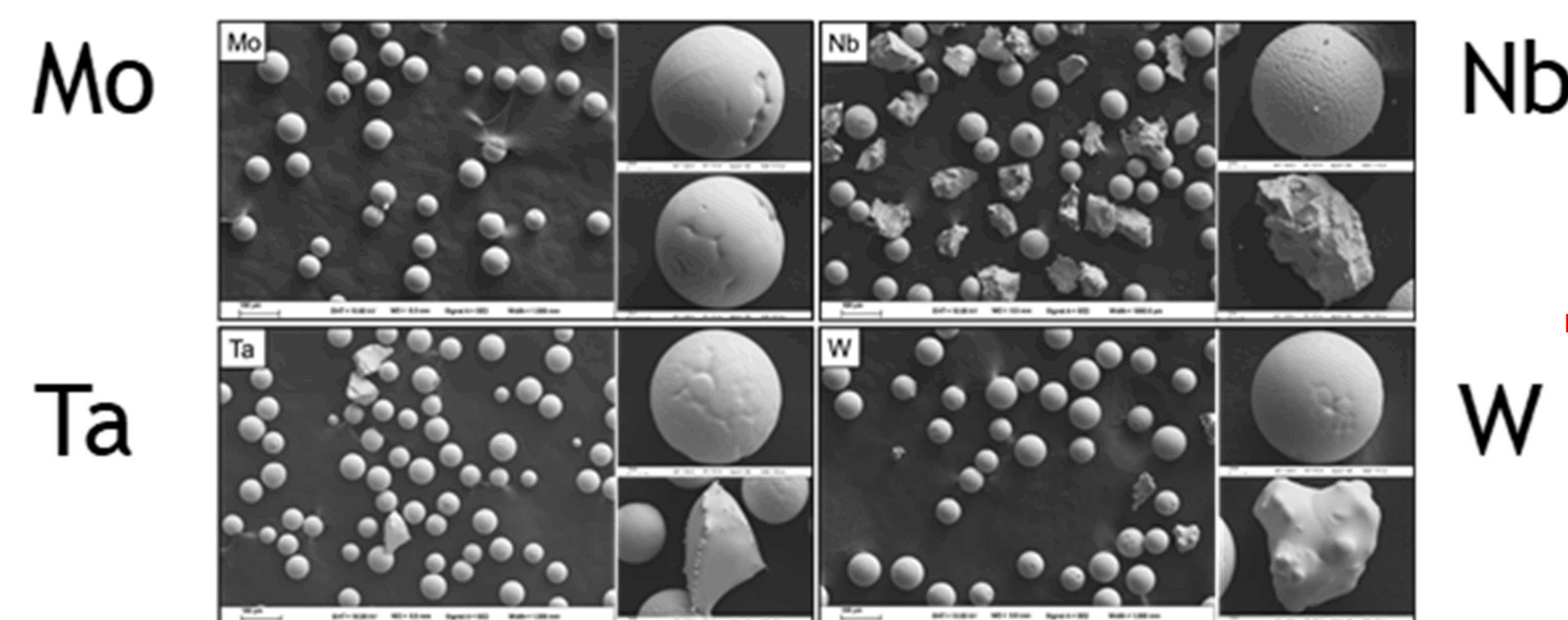


Rapid exploration of refractory complex concentrated alloys via additive manufacturing

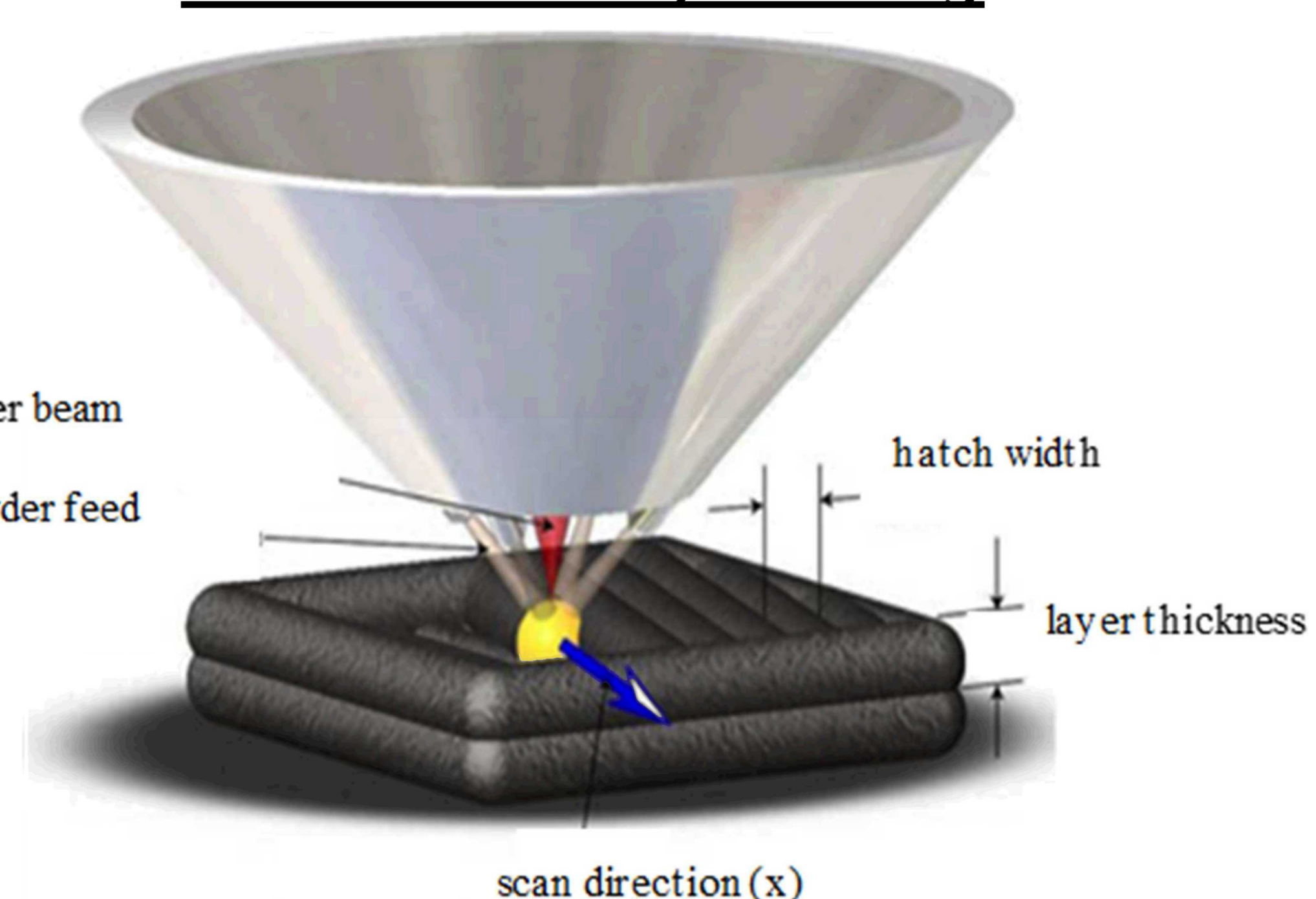
Andrew Kustas*, Michael Melia, Shaun Whetten, Raymond Puckett, Morgan Jones, Michael Heiden, Nicolas Argibay
Sandia National Laboratories, Albuquerque, NM, 87185; *email: akustas@sandia.gov

Executive Summary: High-throughput metal additive manufacturing and material characterization enables rapid assessment of process-structure-property relationships of refractory high entropy alloys. Hardness (and strength) increased proportionally with alloy configurational entropy.

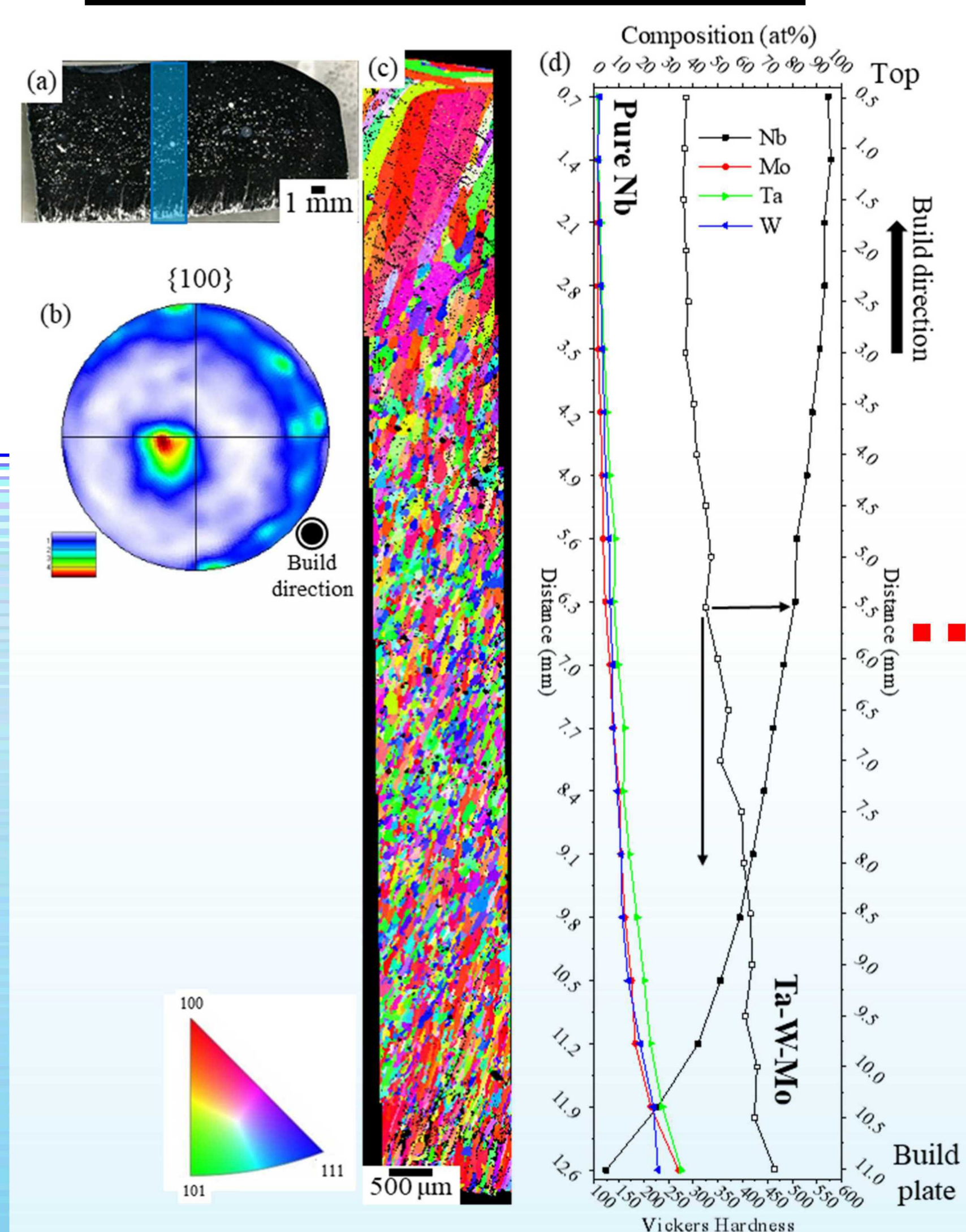
Refractory powder feedstock



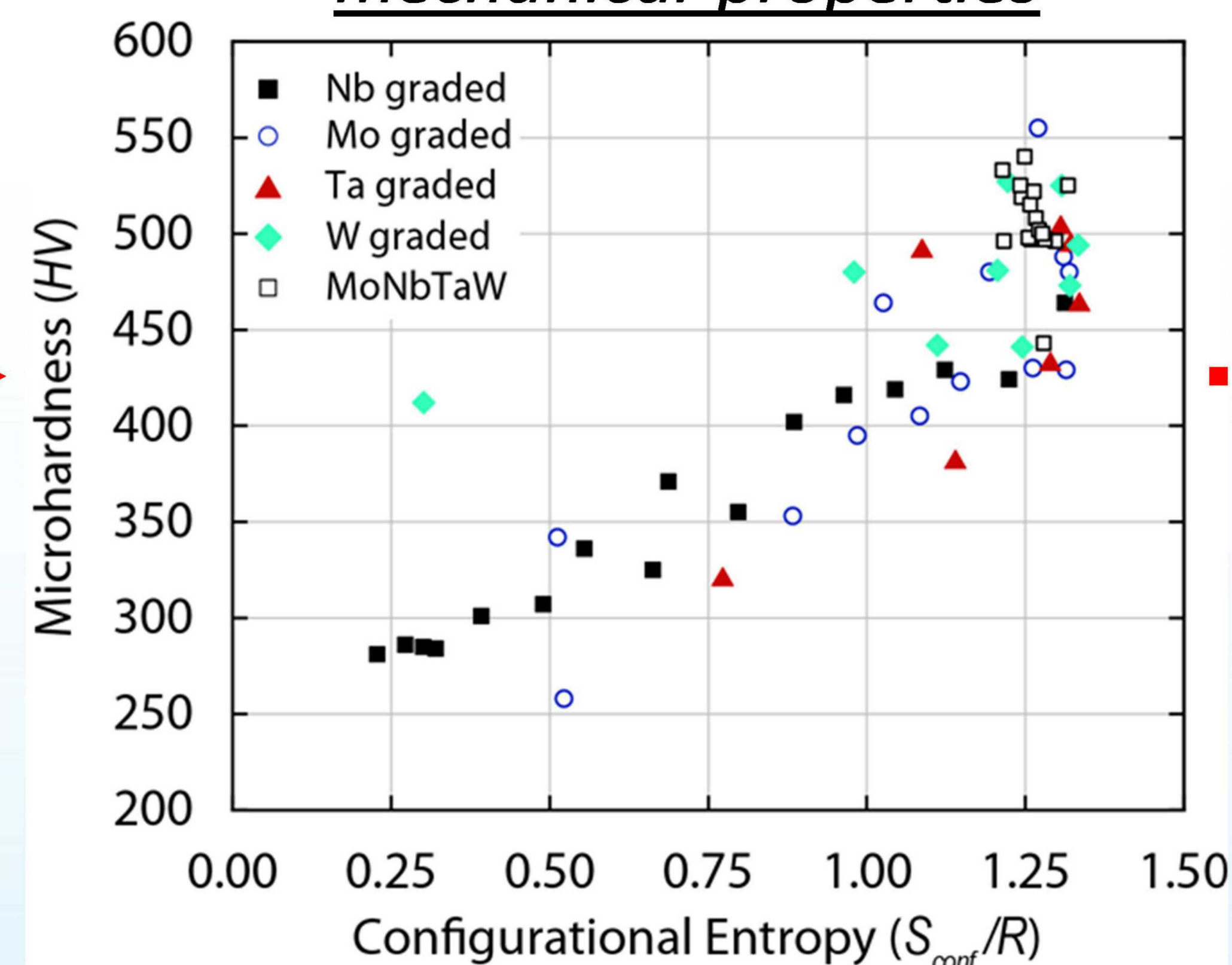
High-throughput additive manufacturing



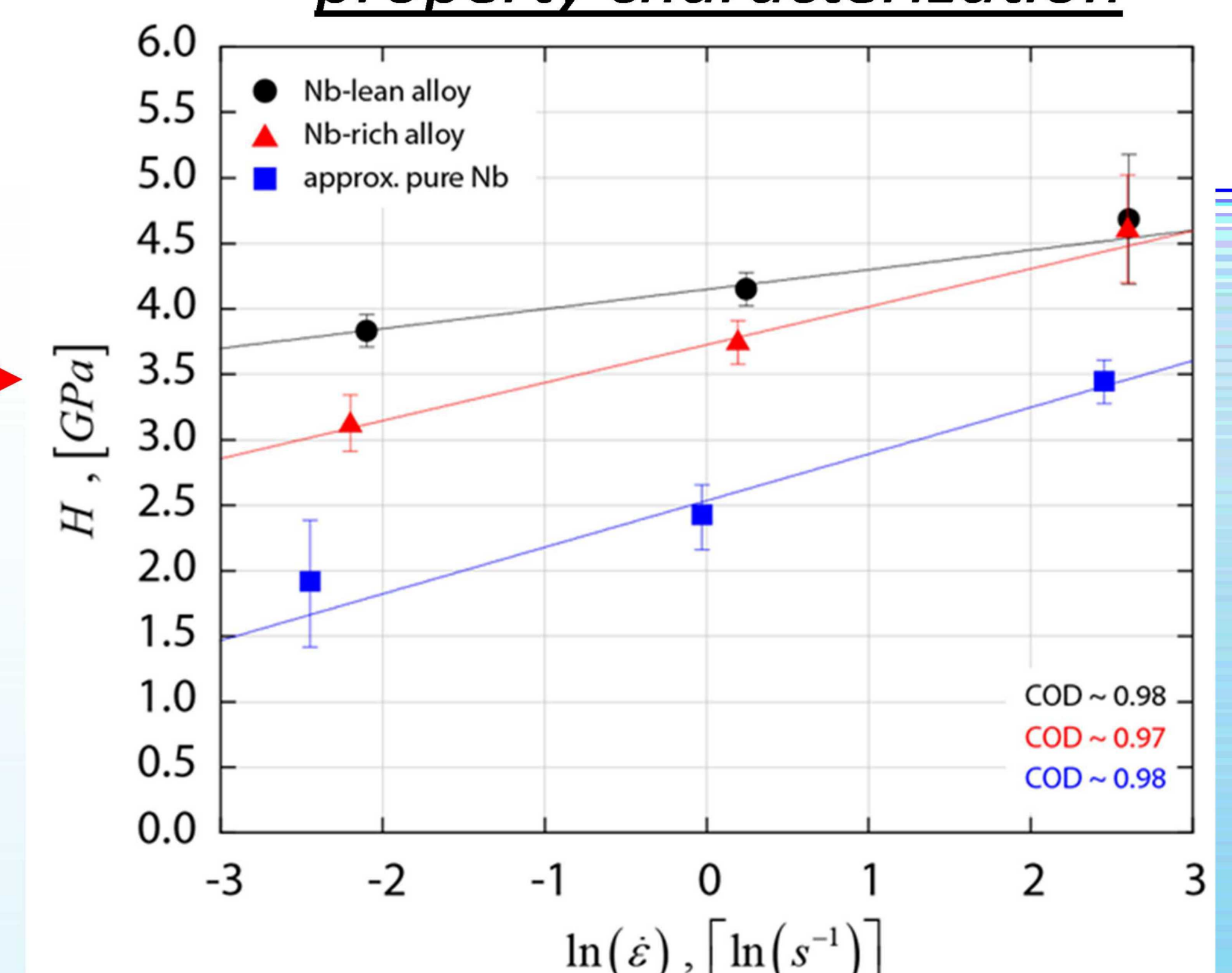
Library of unique RHEAs



Entropy-controlled mechanical properties



High-throughput property characterization



Additional details are available in recently published paper: **M. Melia, et al., High-throughput Additive Manufacturing and Characterization of Refractory High Entropy Alloys, *Applied Materials Today*, 2020, in press.**