

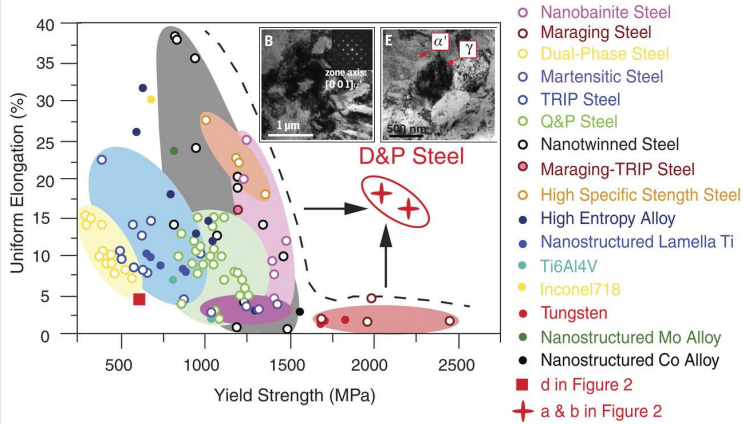


2GPa steel

Prof. M.X. HUANG

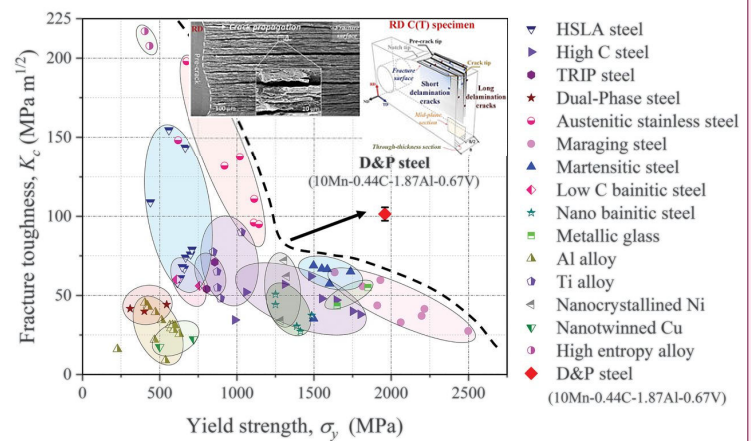
Department of Mechanical Engineering

Strength-Ductility



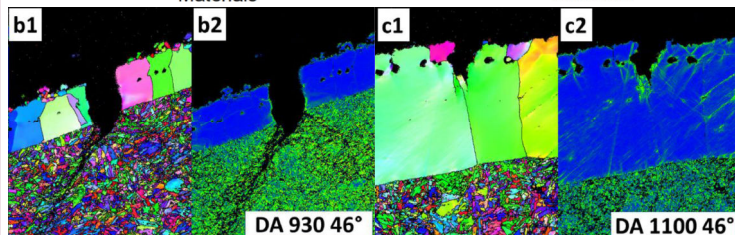
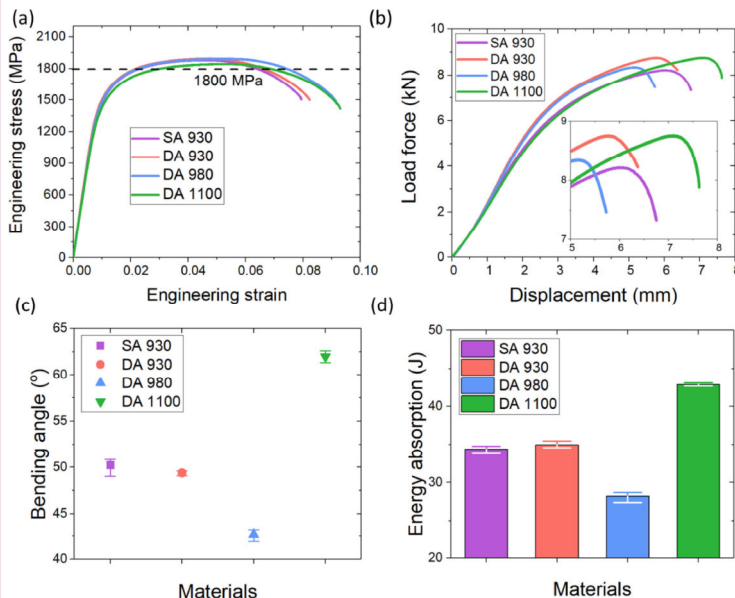
Ultrahigh dislocation density increases both yield strength and uniform ductility.

Strength-Toughness



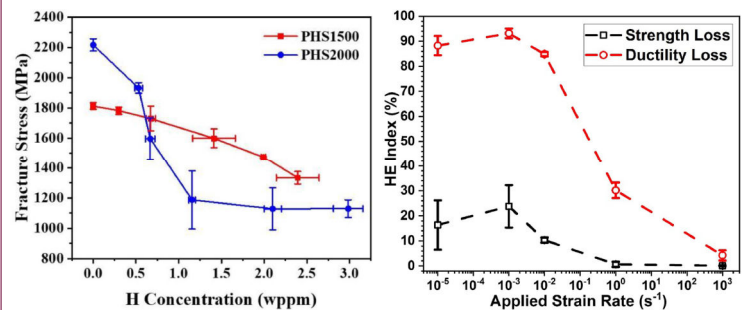
High-strength induced multi-delamination consumes excess energy and alleviates stress triaxiality, thus leading to high toughness.

Strength-Bendability



Deformable coating layer inhibits surface cracks and increases bending angle.

Strength-Hydrogen resistance



Evaluation criterion for hydrogen embrittlement of super strong steels should be resettled.

Publications

- [1] B.B. He, M.X. Huang, et al, Science (2017) 357.
- [2] L. Liu, M.X. Huang, et al, Science (2020) 368.
- [3] M. Guan, M.X. Huang, et al, Scripta Mater. (2023) 235.
- [4] Z.H. Cao, M.X. Huang, et al, J Mater. Sci. Technol. (2022) 124.
- [5] Z.H. Cao, M.X. Huang, et al, J Mater. Sci. Technol. (2025) 224.