

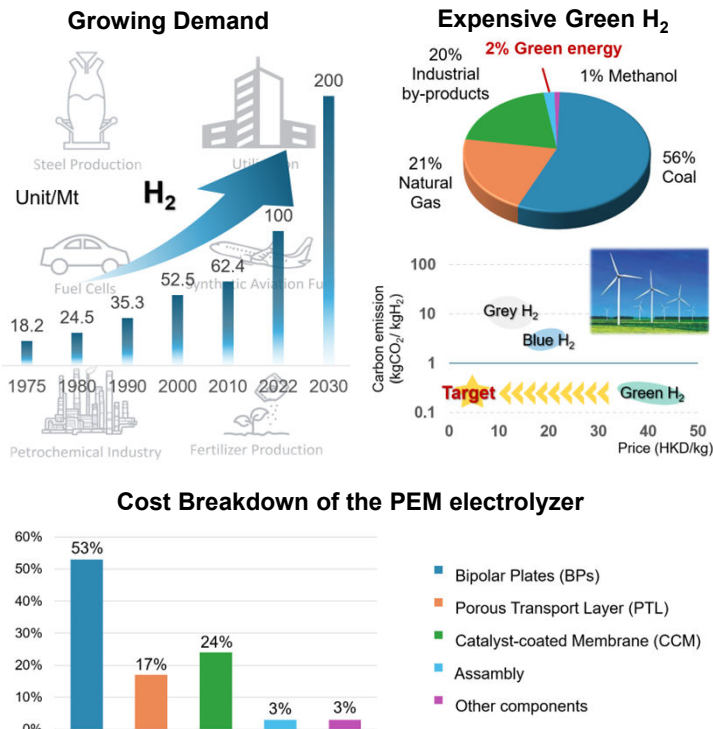


Cost-effective Green Hydrogen

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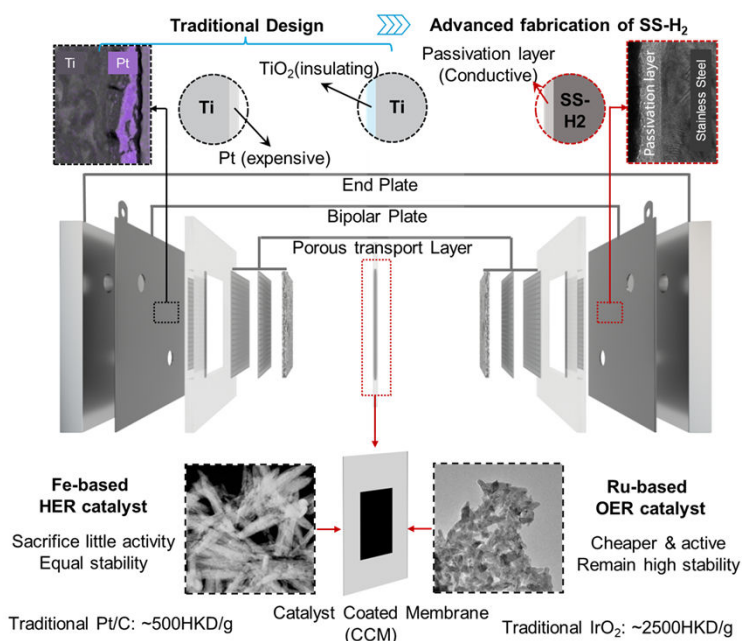
Department of Mechanical Engineering

Introduction



1. Despite growing demand, green hydrogen remains only ~2% of the total hydrogen supply.
2. High cost of green hydrogen hinders its economic viability, thus cost reduction is an urgent priority.

Methodology

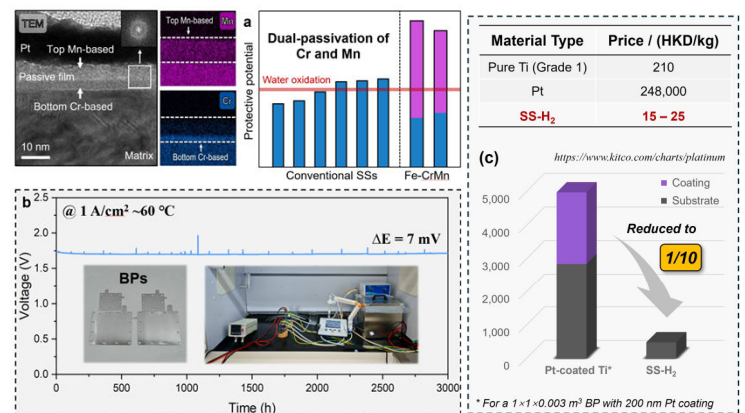


Objectives

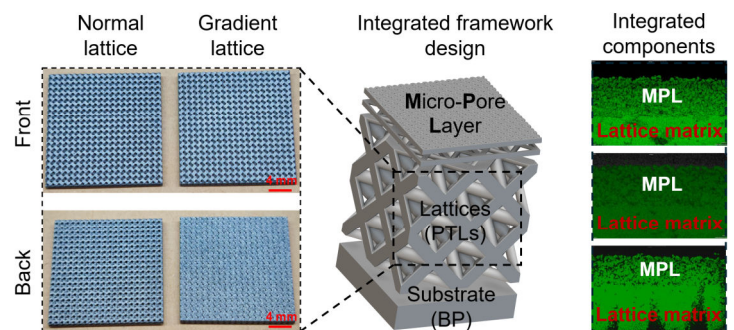
1. Replace the expensive Pt-cost Ti framework
2. Reduce interface contact resistance of framework
3. Design low-cost and efficient catalytic systems

Research achievement

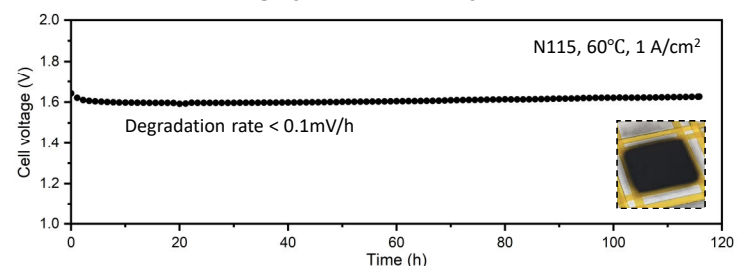
Low-cost stainless steel "SS-H₂"



Integrated framework



Highly efficient catalysts



Publications

- [1] K. P. Yu, M.X. Huang, et al, Materials Today (2023) 70.
- [2] K. P. Yu, M.X. Huang, et al, Corrosion Science (2025) 246
- [3] X. L. Chen, M.X. Huang, et al, Materials Today Sustainability (2025) 101185.
- [4] K.P. Yu, M.X. Huang, et al, Corrosion Science (2022) 208.