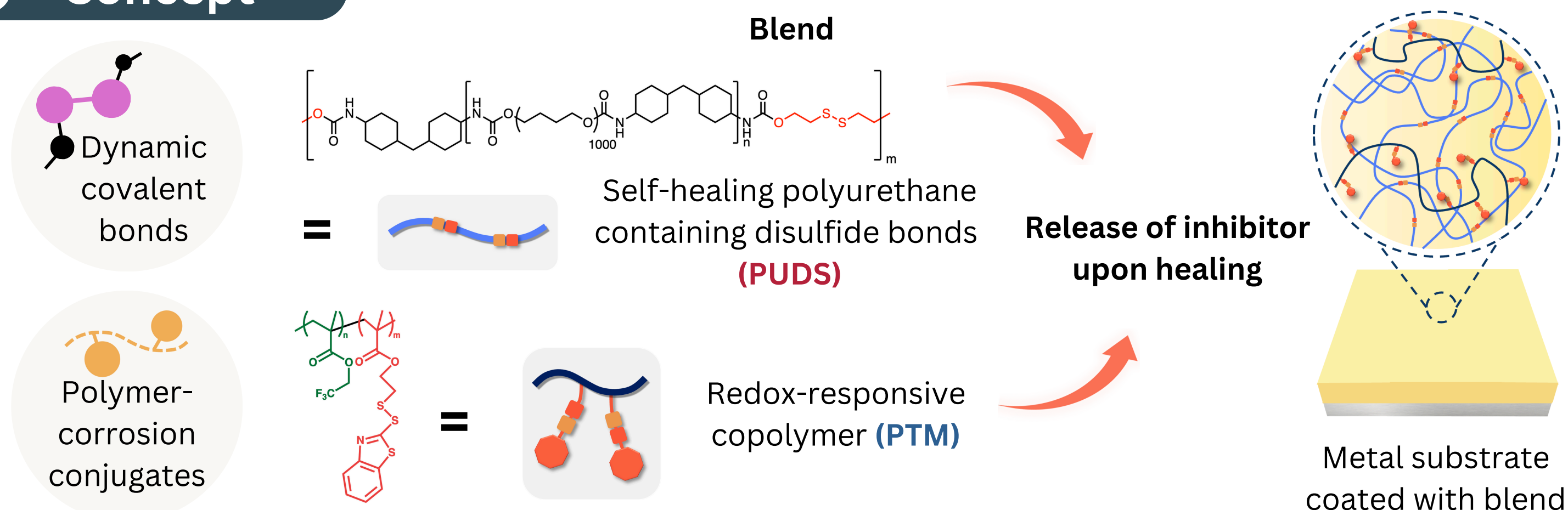


A polymer blend with self-healing and corrosion protection properties

1 Challenge

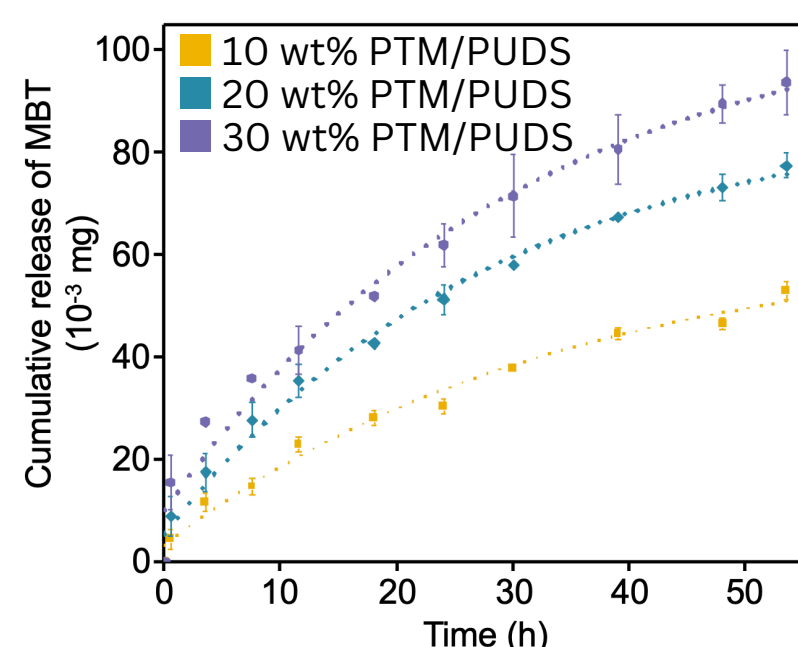
Protective organic coatings are widely employed to prevent the deterioration of metallic structures by corrosion. However, preserving their functions after mechanical damage remains a challenge. Herein, a coating displaying self-healing and anticorrosion properties after damage is prepared.

2 Concept



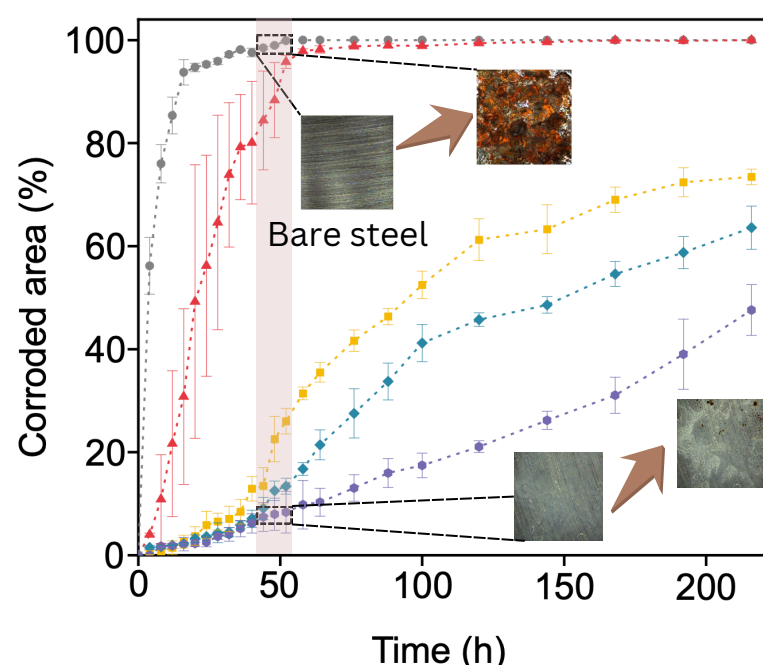
3 Coatings with blend

Release of MBT at healing condition

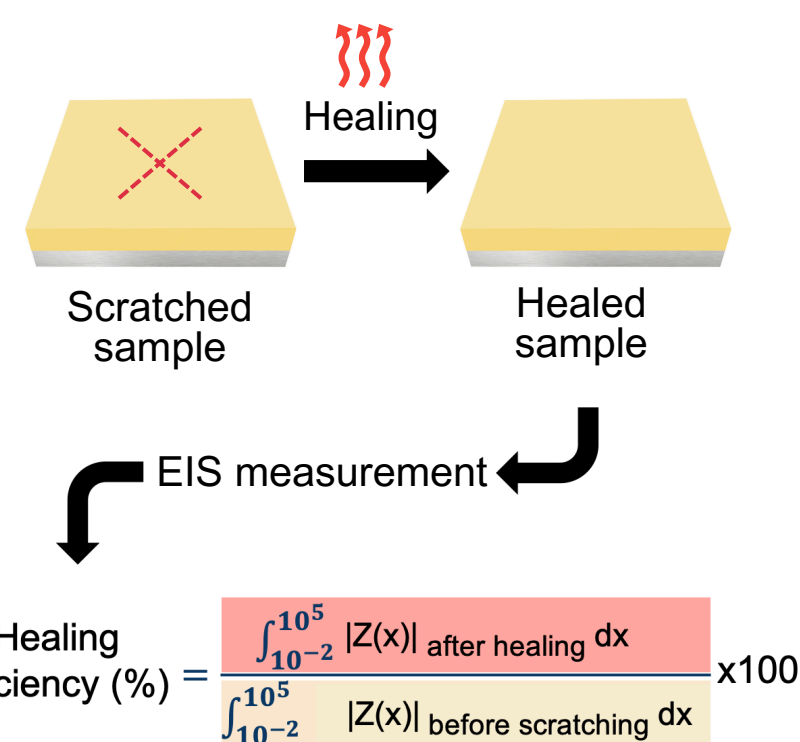


Corrosion protection

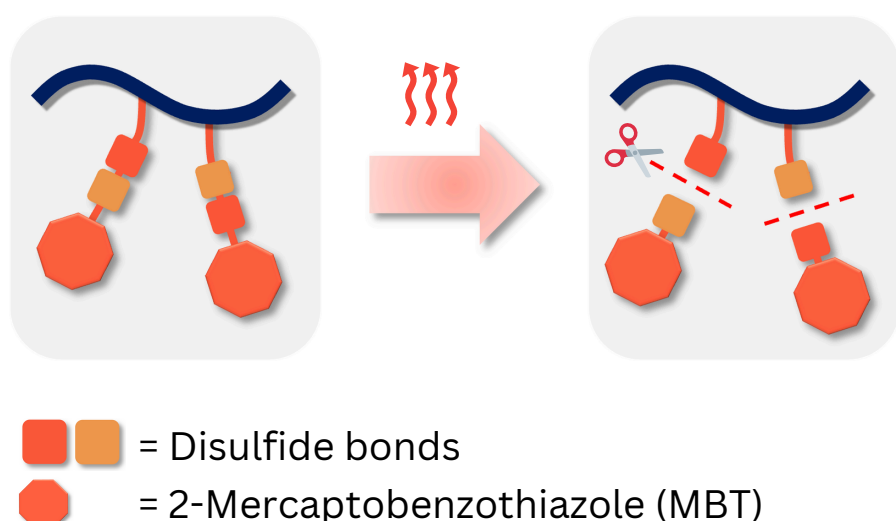
Salt spray test



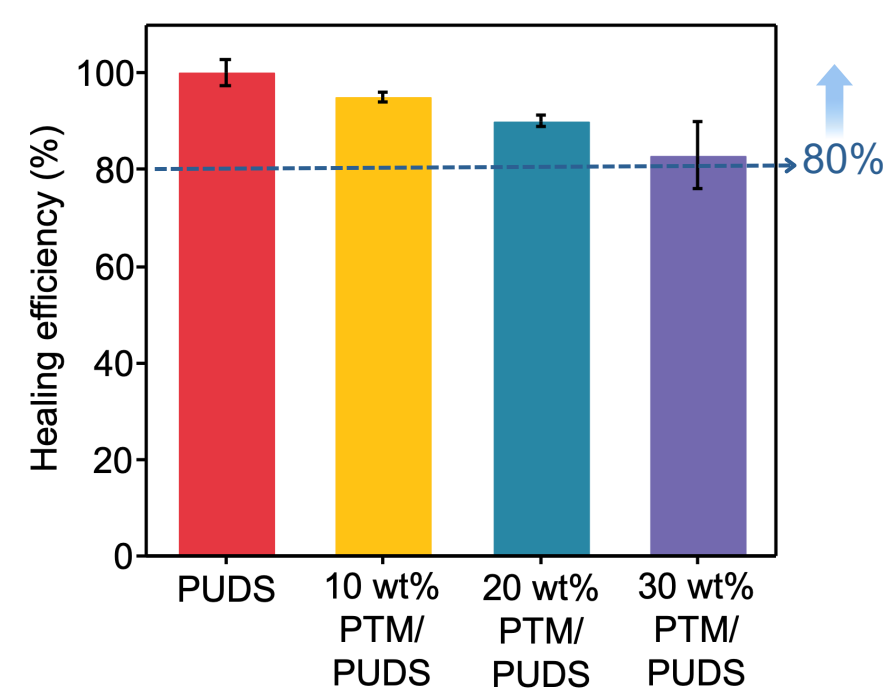
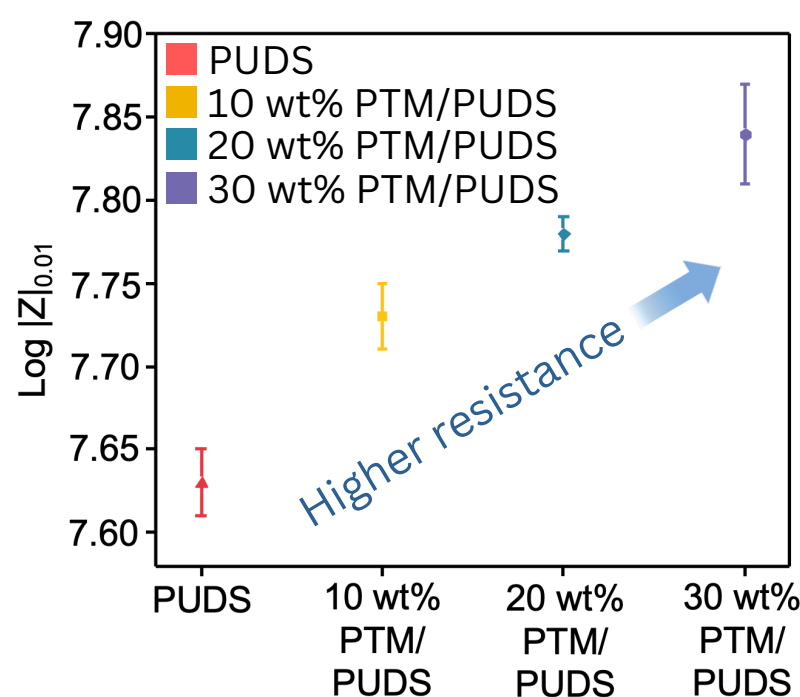
Self-healing performance



Exchange of disulfide bonds



EIS measurement



More PTM → Released MBT ↑ → Anticorrosion performance ↑ → Healing efficiency ↓

4 Conclusions

Blend could release corrosion inhibitors and heal damages