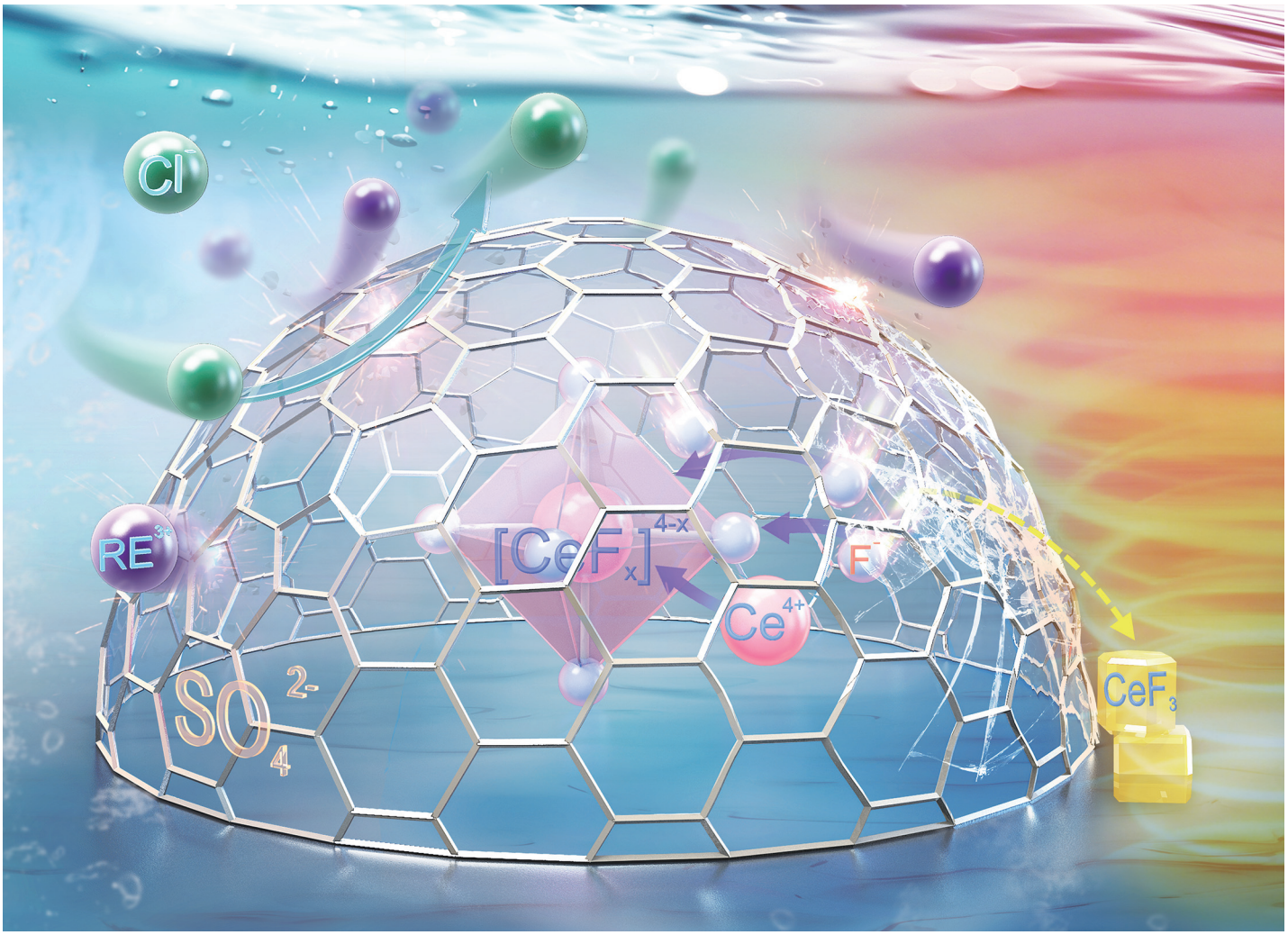

Showcasing research from Professor Liangshi wang's laboratory, National Engineering Research Center for Environment-friendly Metallurgy in Producing Premium Non-ferrous Metals, China GRINM Group Co., Ltd., Beijing, China.

Ionic atmosphere and temperature field–promoted dissociation and phase reconstruction of bastnaesite

A strategy for bastnasite processing was developed *via* coordination leaching under an ionic atmosphere and selective precipitation driven by temperature-field. SO_4^{2-} stabilizes $[CeF_x]^{(4-x)}$ through an ionic atmosphere during leaching, mitigating Ce^{4+} reduction and REF_3 formation. Temperature Field-driven phase reconstruction converts >98% of fluorine into size-controllable CeF_3. This approach enables efficient recovery of rare earths, cerium, and associated fluorine, offering a universal ionic atmosphere model for cleaner, short-process rare earth metallurgy.

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As featured in:

See Liangshi Wang *et al.*, *Green Chem.*, 2026, **28**, 6970.

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