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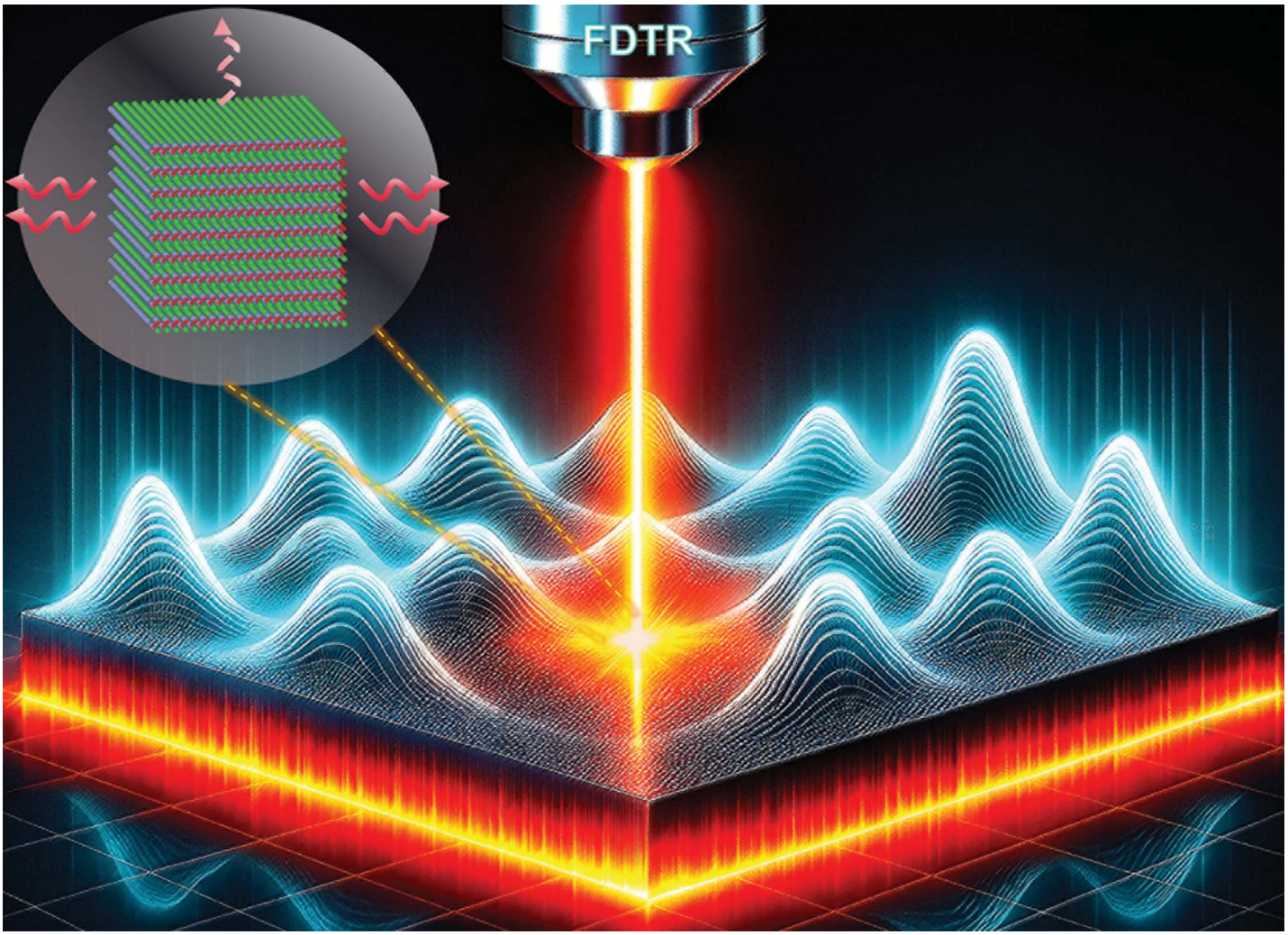

Showcasing research from Professor Guangzhao Qin's laboratory, College of Mechanical and Vehicle Engineering, Hunan University, Changsha 410082, P.R. China.

Asymmetric electron distribution induced intrinsically strong anisotropy of thermal transport in bulk CrOCl

The study reveals that asymmetric electron distribution in bulk CrOCl induces intrinsically strong anisotropy in thermal transport, with in-plane thermal conductivity (~21.6 W/mK) being ten times higher than cross-plane (~2.18 W/mK). Combining experiments and calculations, the work demonstrates that anisotropic electron localization fundamentally governs phonon transport, providing atomic-scale design principles for engineering anisotropic thermal properties in advanced functional materials. The insights enable directional heat dissipation strategies for next-generation electronic devices.

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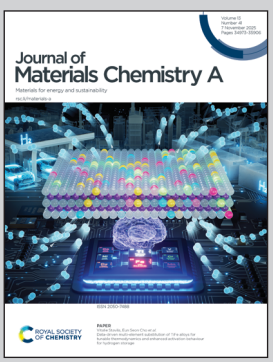

See Guangzhao Qin *et al.*, *J. Mater. Chem. A*, 2025, **13**, 35230.

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