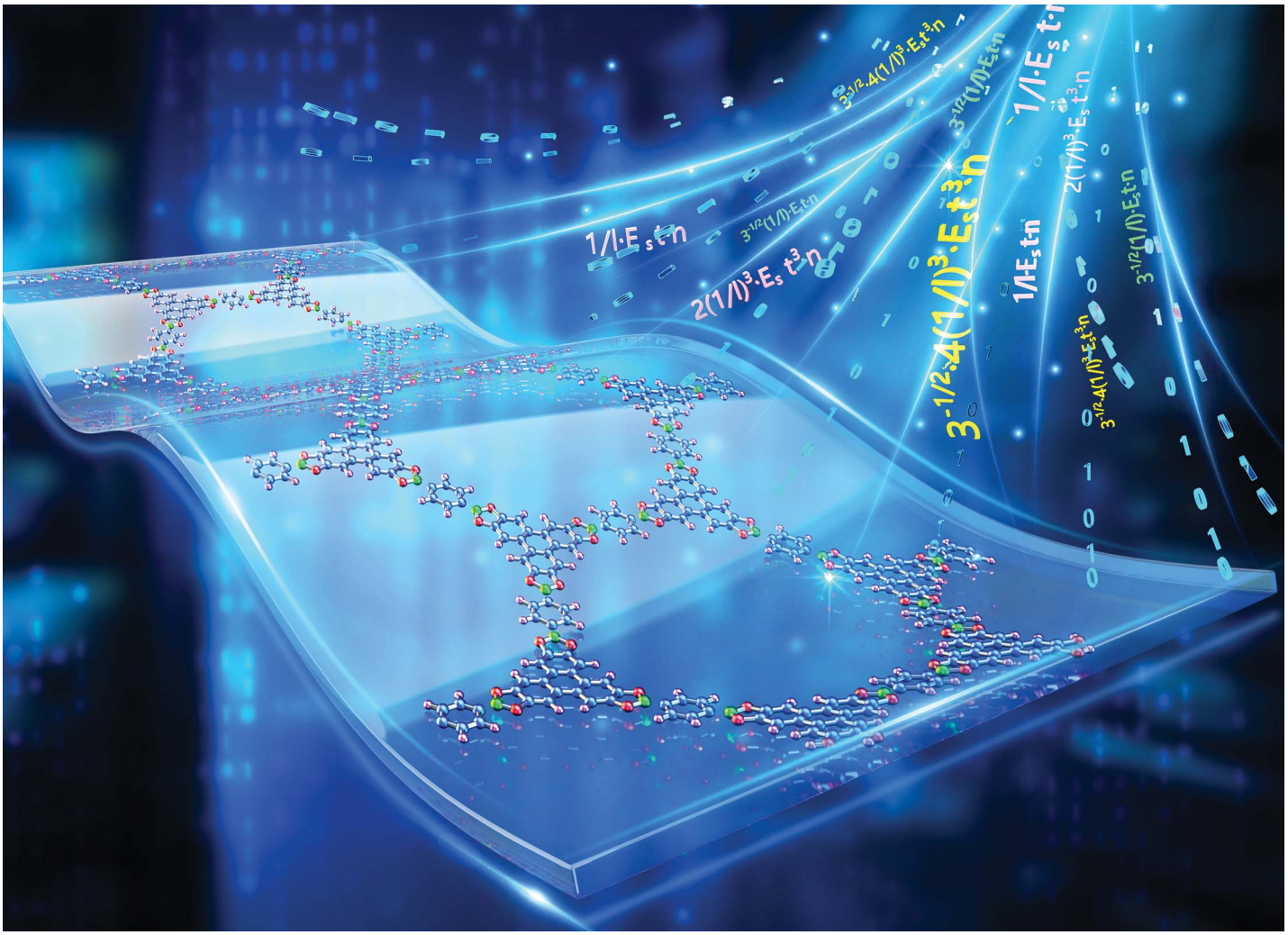

Showcasing research from Professor Haoyuan Li's laboratory, School of Microelectronics, Shanghai University, Shanghai, China.

Intrinsic mechanical properties of two-dimensional covalent organic frameworks

The authors conducted computer simulations and discovered that the intrinsic mechanical properties of two-dimensional covalent organic frameworks (2D COFs) can be described *via* principles traditionally applied to macroscopic objects. This enables the quantitative prediction of the mechanical properties of 2D COFs based on their chemical linkage, topology, and pore dimensions. Counterintuitively, integrating rigid molecular groups into a 2D framework can potentially compromise overall mechanical strength by inducing imbalanced local strain. These findings inform the rational design of 2D COFs for diverse applications.

Image reproduced by permission of Haoyuan Li from *Chem. Sci.*, 2025, **16**, 15913.

As featured in:

See Haoyuan Li *et al.*, *Chem. Sci.*, 2025, **16**, 15913.

ROYAL SOCIETY OF CHEMISTRY

15 YEARS ANNIVERSARY

rsc.li/chemical-science

Registered charity number: 207890