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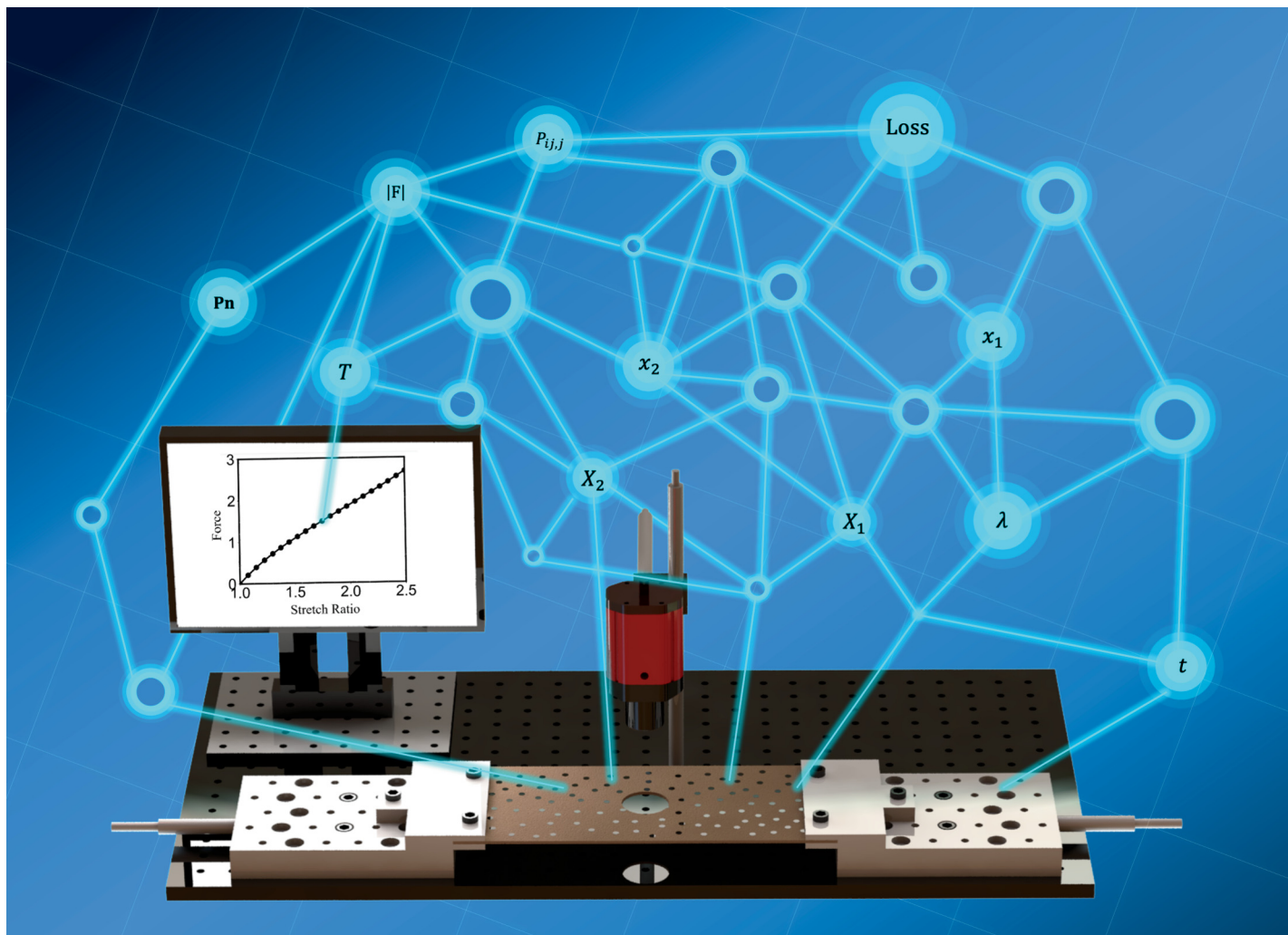
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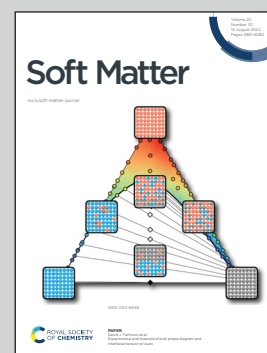


Showcasing research of Dr Hanxun Jin and Dr Siyuan Song, School of Engineering, Brown University, Providence, RI, USA.

Identifying constitutive parameters for complex hyperelastic materials using physics-informed neural networks

A robust PINN-based framework, with multi-modal synthetic experimental datasets consisting of full-field deformation and loading history, is designed to identify material parameters for soft materials, specifically those exhibiting complex constitutive behaviours, under large deformation in plane stress conditions. The PINN framework can accurately identify constitutive parameters of incompressible constitutive models for samples with intricate geometries, maintaining low errors even with experimental noise.

As featured in:



See Siyuan Song and Hanxun Jin, *Soft Matter*, 2024, **20**, 5915.