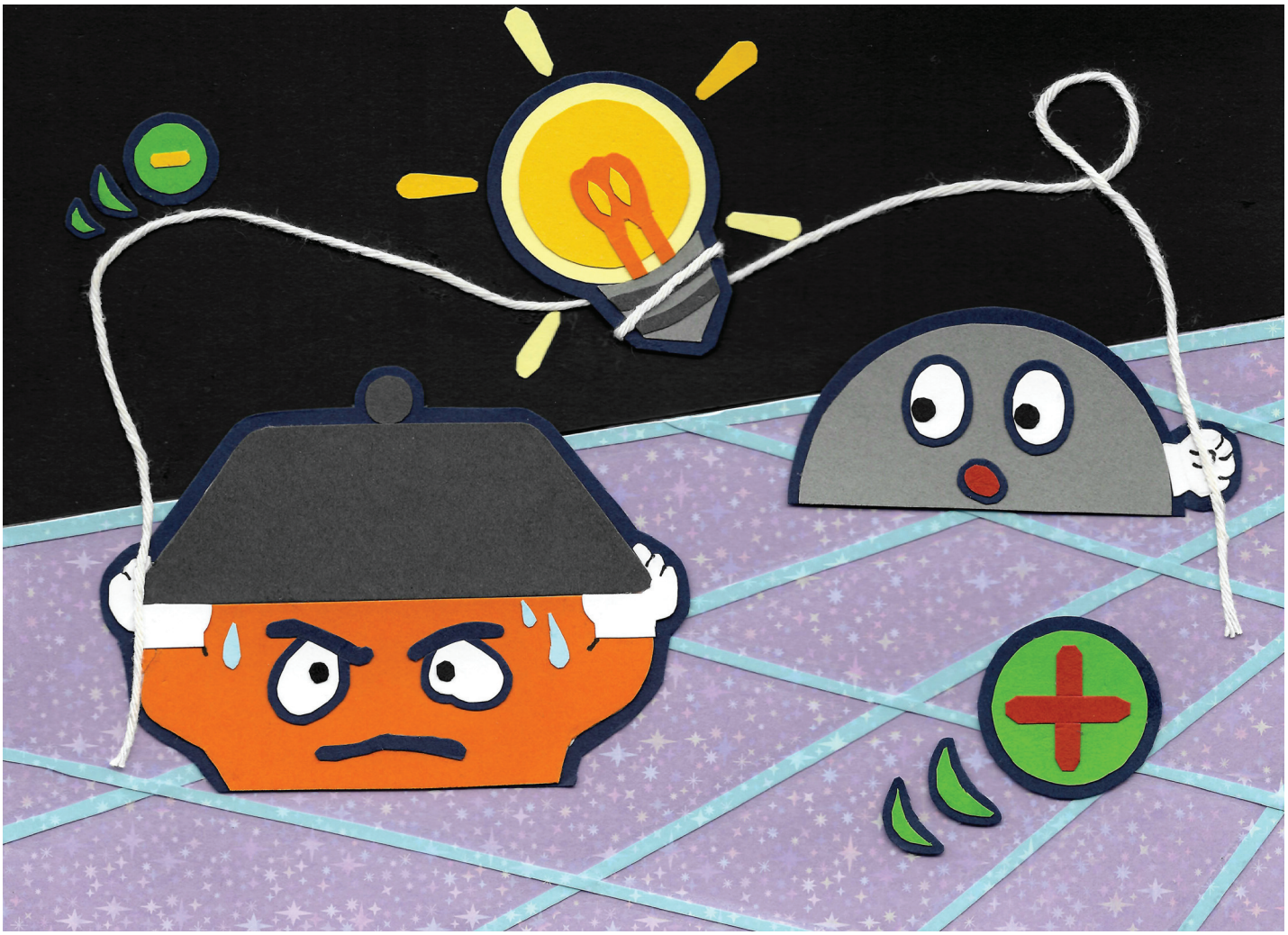

Showcasing research from Professor Paul Albertus's laboratory, Department of Chemical and Biomolecular Engineering, University of Maryland, College Park, USA.

Mechanics-modified equilibrium potential for linear-elastic electrode materials

A voltage difference is produced when a battery electrode is exposed to mechanical stress. In this work, we use tensor treatment to resolve the stress and strain states in three loading scenarios to derive equilibrium-potential expressions for a linear-elastic electrode material deposited on a solid electrolyte. The illuminating light bulb in the illustration captures the mechanics-driven voltage difference between the stressed orange electrode and the mechanically relaxed reference electrode in grey. The illustration also highlights the corresponding movement of an electron and a cation.

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Image designed and created by Taeho Jung.

As featured in:

See Paul Albertus *et al.*, *EES Batteries*, 2025, **1**, 450.

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