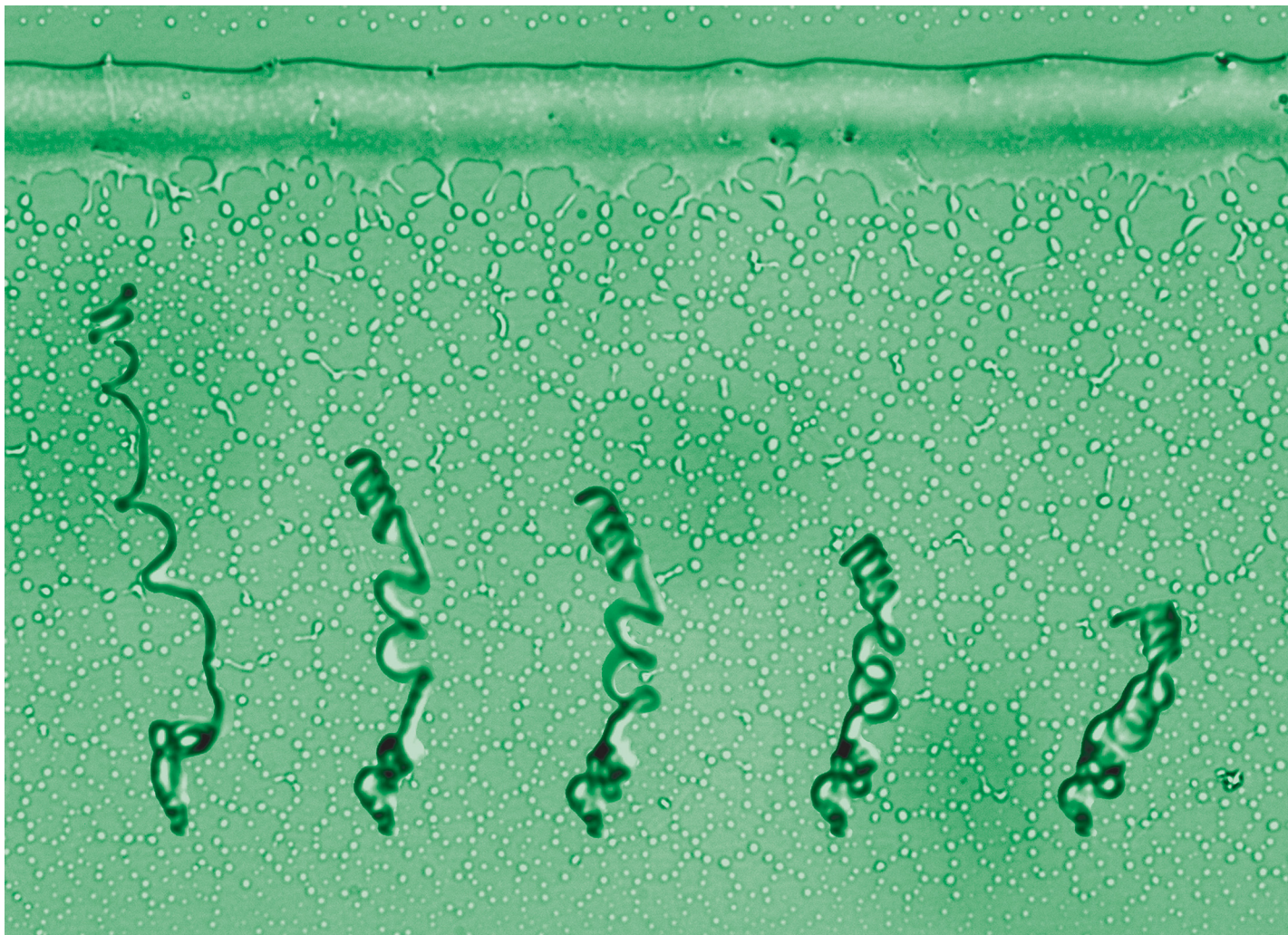




Showcasing research from Professor Alfred J. Crosby's & Professor Todd Emrick's laboratories, Department of Polymer Science and Engineering, University of Massachusetts Amherst, USA.

Fabricating mesoscale polymer ribbons with tunable mechanical properties *via* evaporative deposition and dewetting

Synthetic replication of mesoscale structures found in nature poses substantial challenges. We address this challenge by using evaporative deposition to fabricate thin polymer ribbons with precise control over dimensions (thickness 700 nm, width 25 μm , length 4 mm) and elastic modulus (GPa to MPa). Using the phenomenon of dewetting to our advantage, we uniquely preserve chemical fidelity, composition and dimensions of the ribbons. The soft elastomer ribbons spontaneously form helices in water, allowing them to potentially serve functions resembling mesoscale filaments found in living systems.

Image Credit: Cornelia Meissner

As featured in:



See Todd Emrick, Alfred J. Crosby *et al.*, *Soft Matter*, 2024, **20**, 5324.