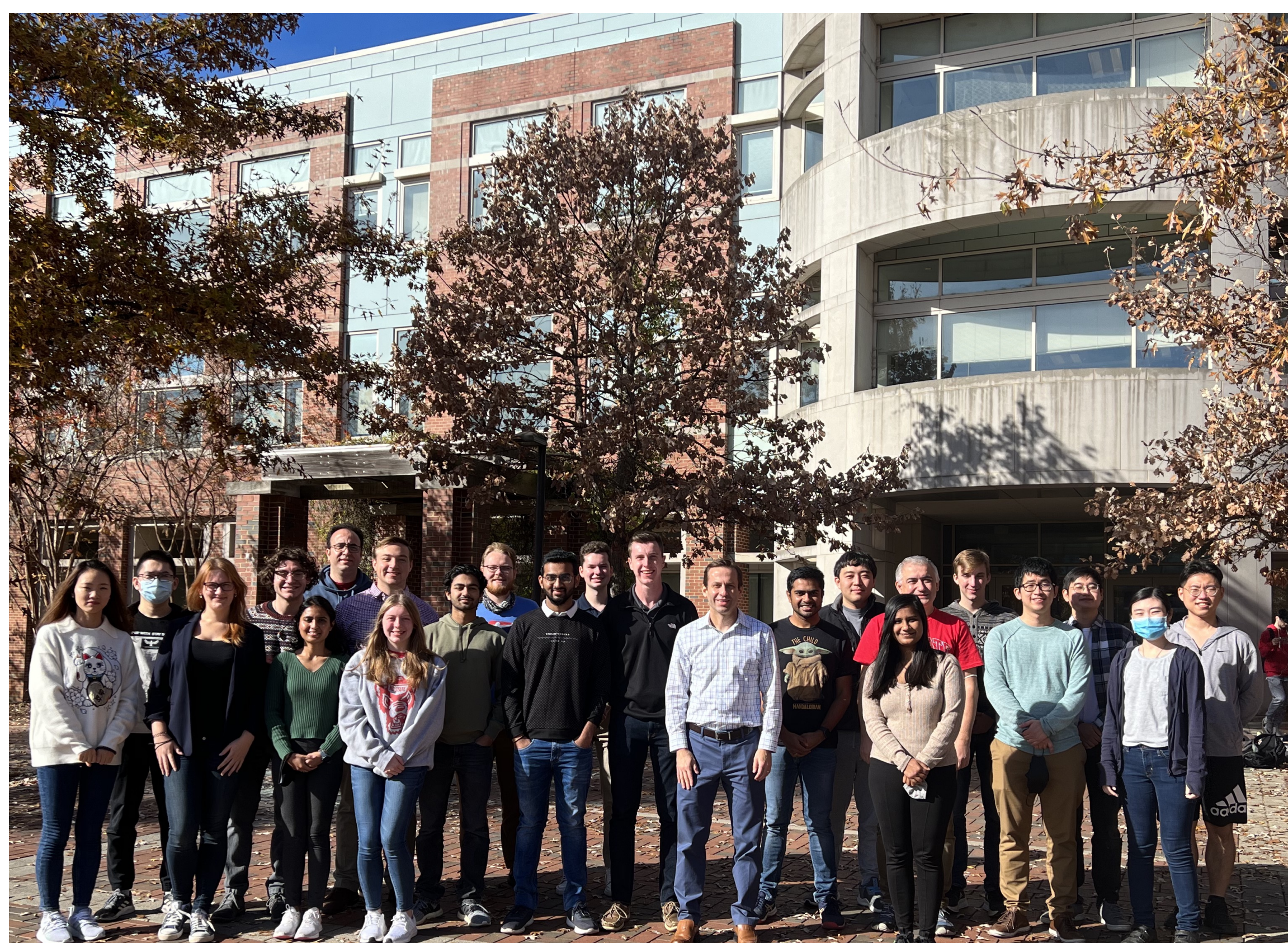
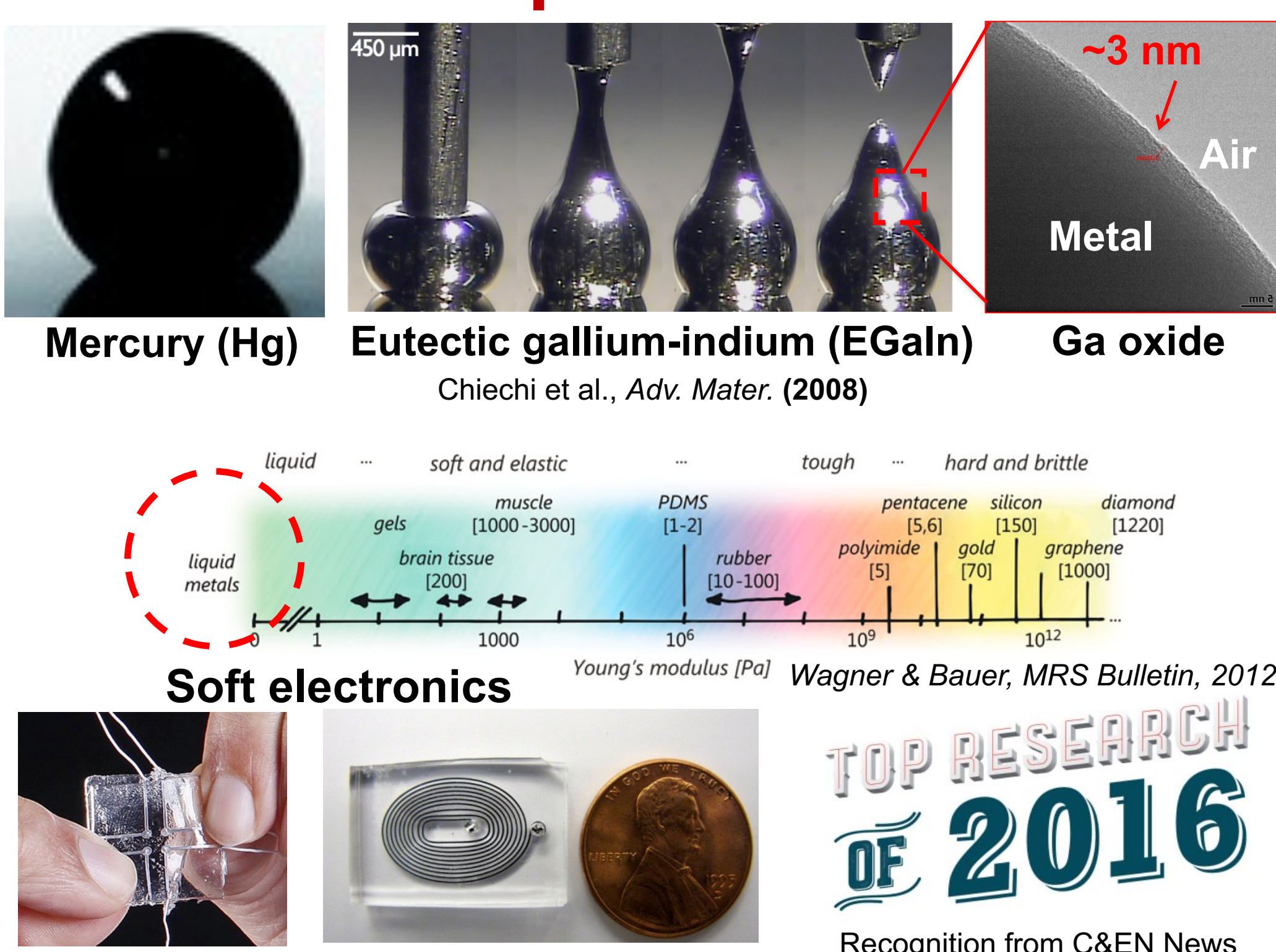


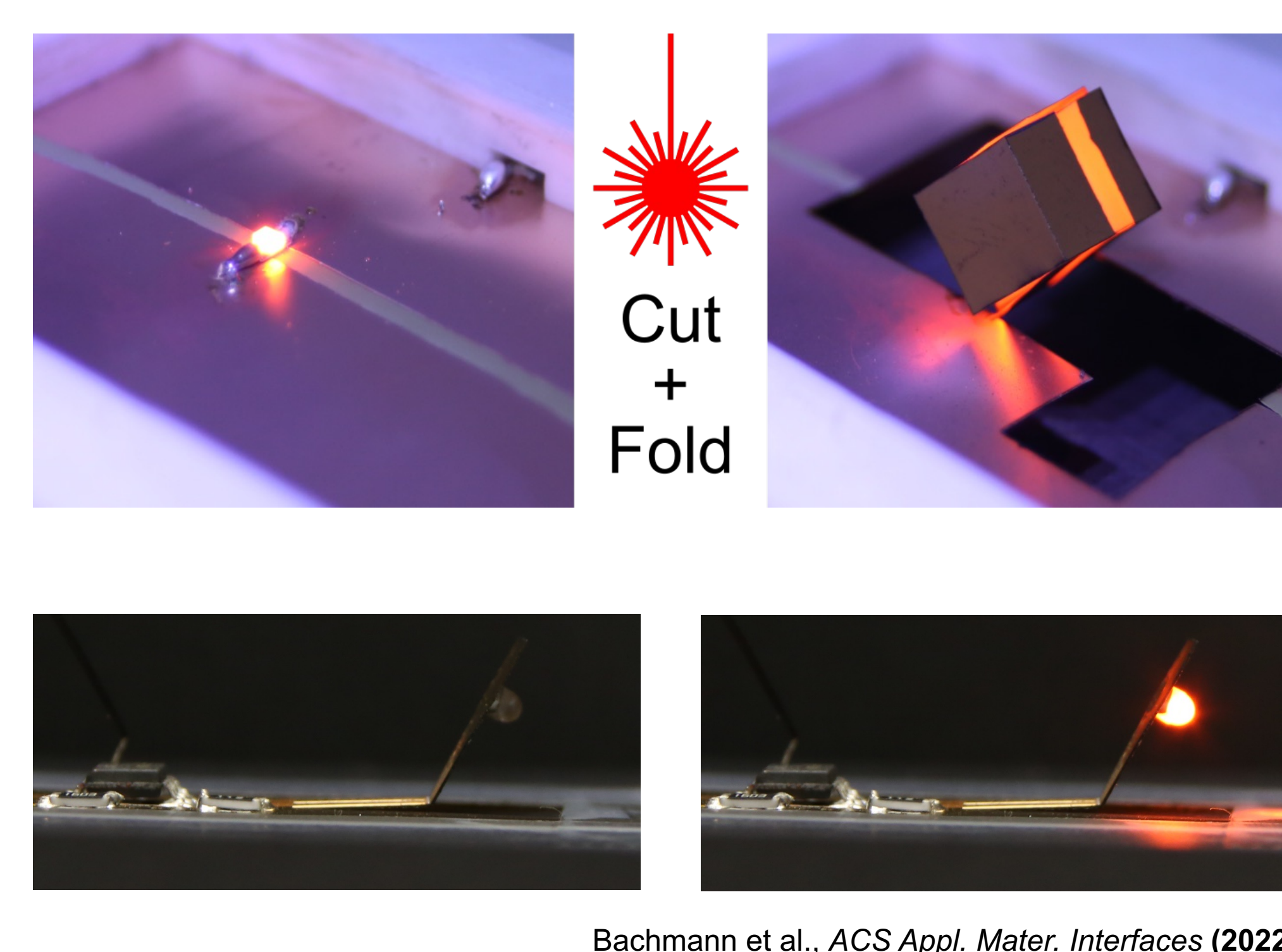


Overview: Our group is studying ways to actuate, utilize, and pattern soft materials (gels, polymers, elastomers, liquid metals). A common theme of our projects is the importance of thin films, interfacial phenomena, and micro- and nanofabrication. Applications of the research include 3D printing, surface patterning, stretchable and reconfigurable electronics, self-folding/actuation, microfluidics, surface modification, and soft robotics. This interdisciplinary work combines fundamental scientific studies with theoretical engineering principles. The following examples highlight aspects of our research.

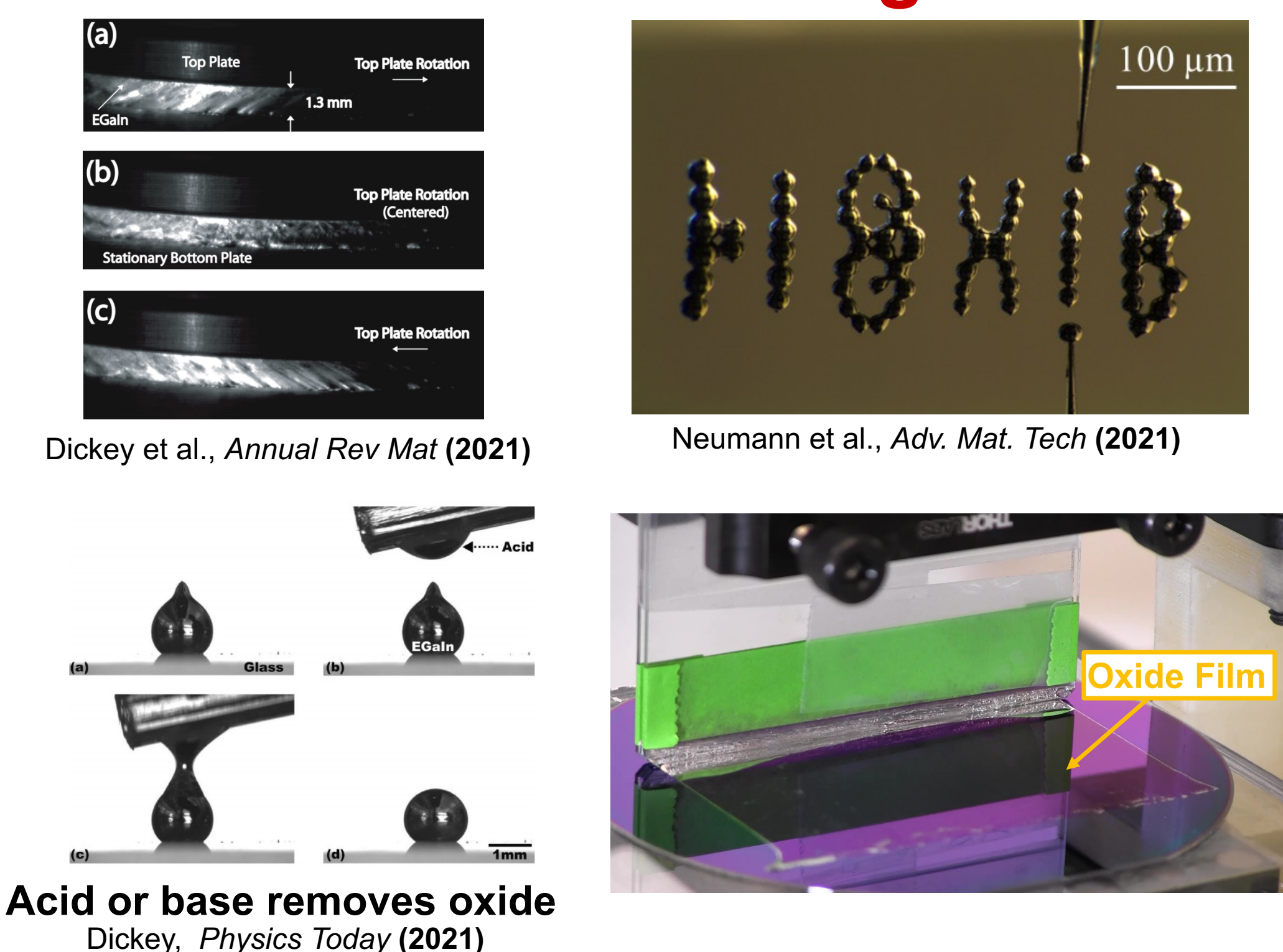
Liquid Metals



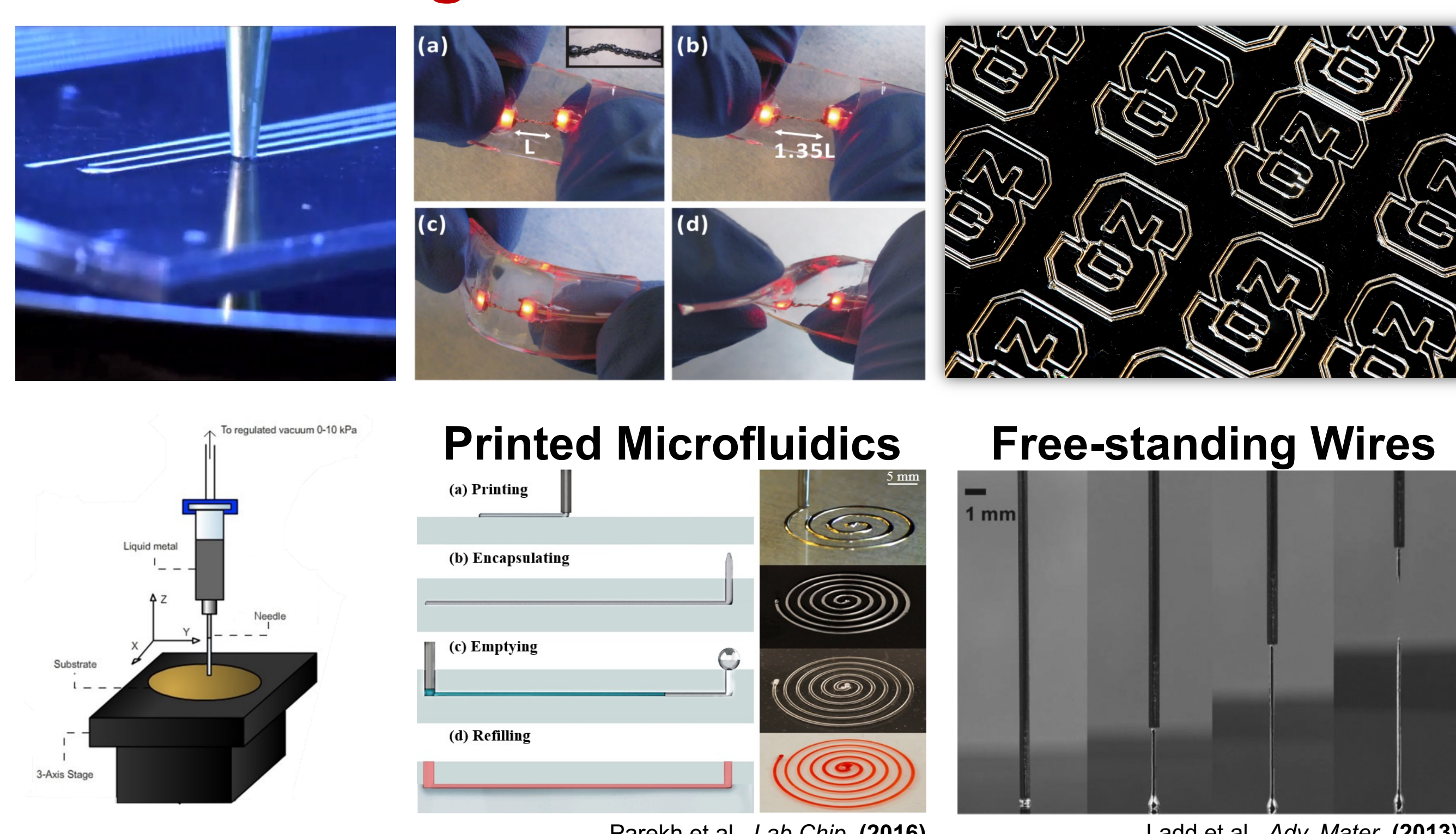
2D to 3D Electronics



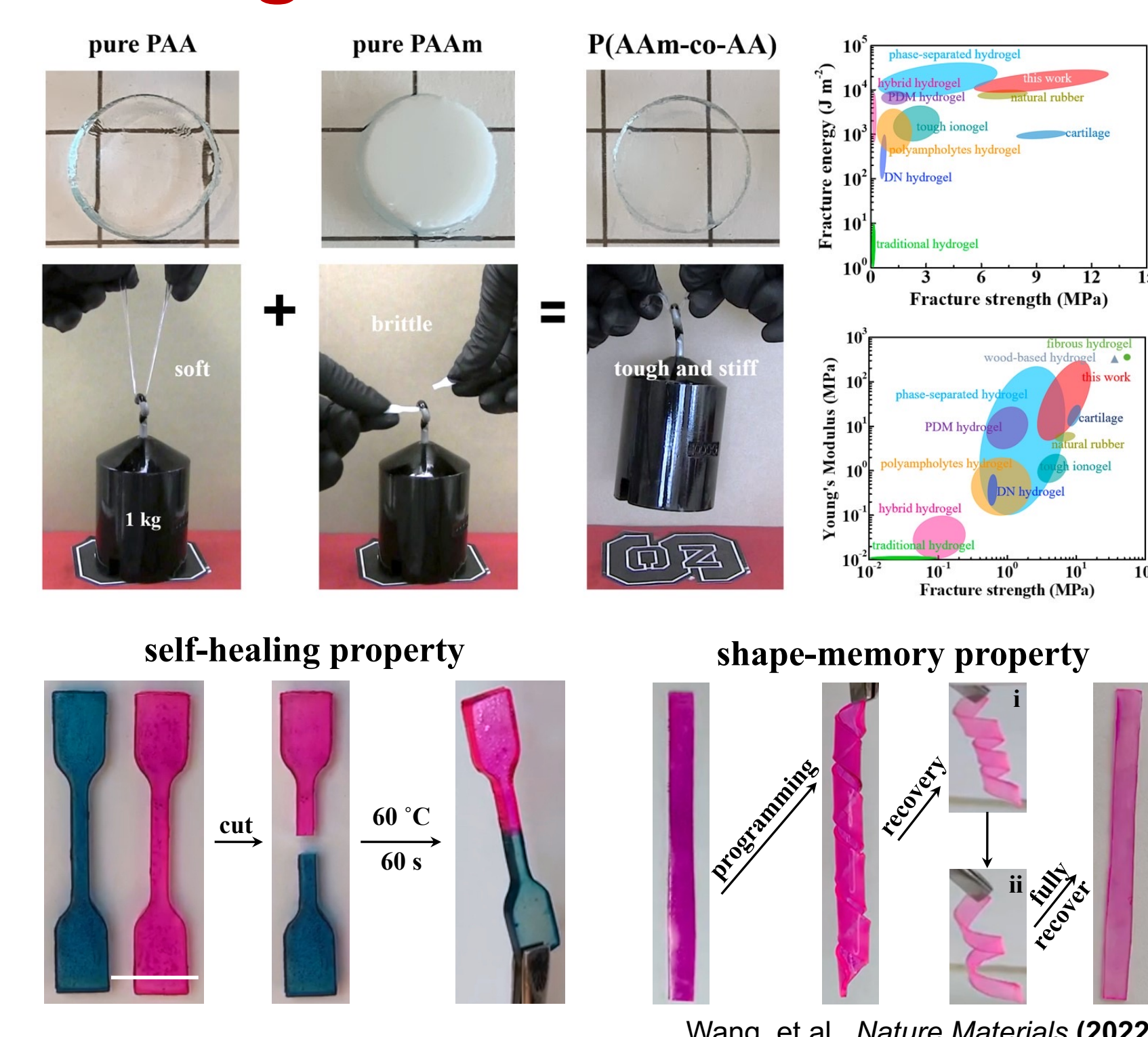
Oxide Printing



3D Printing of Multifunctional Materials

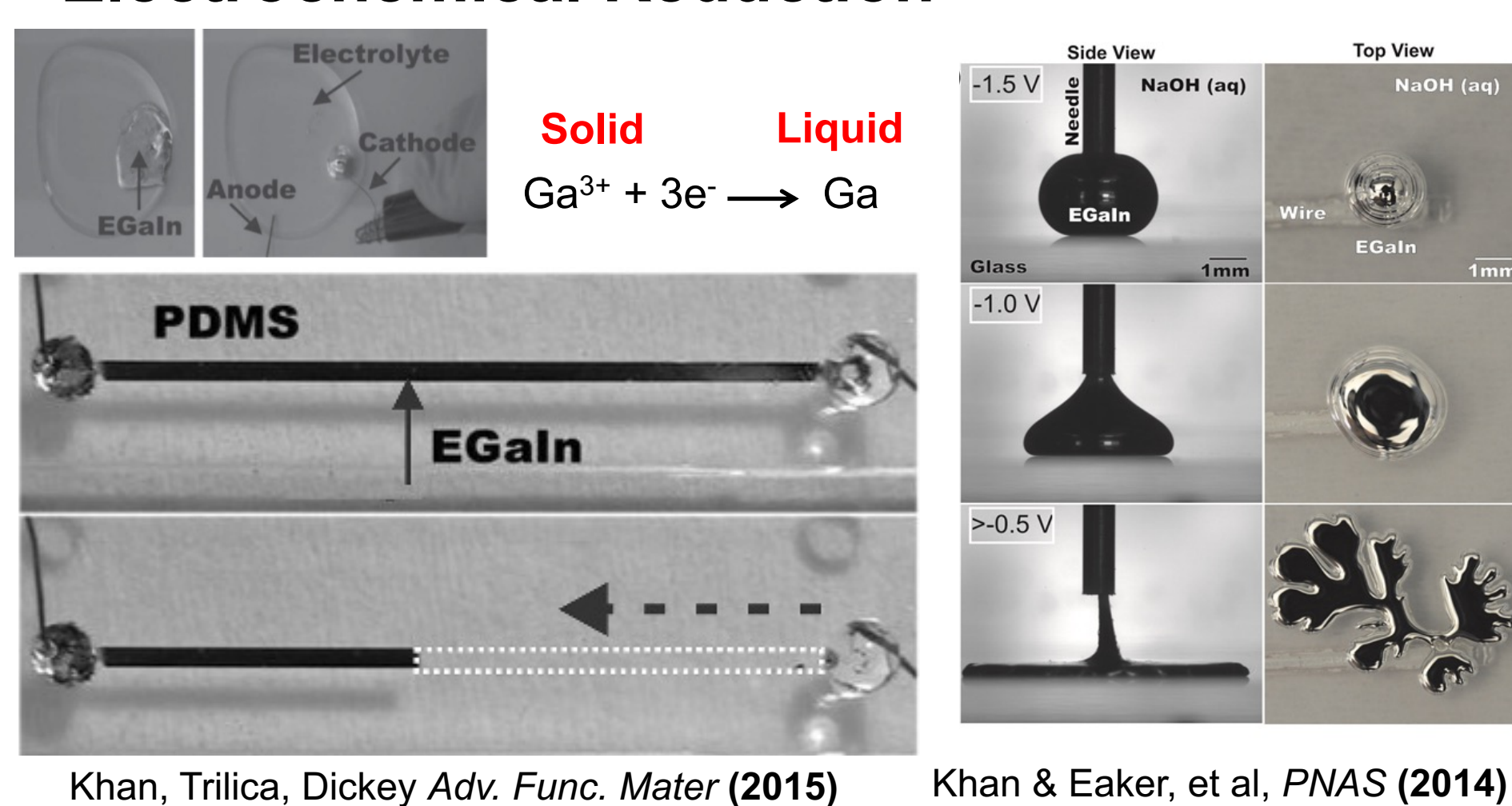


Tough & Healable Gels

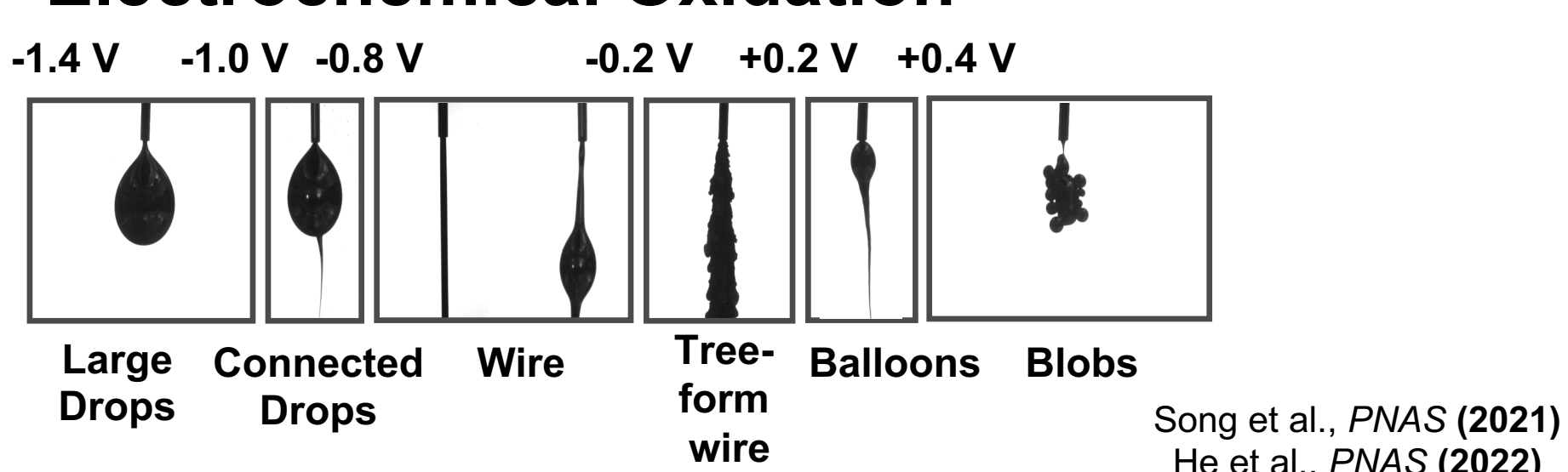


Actuating Liquid Metals

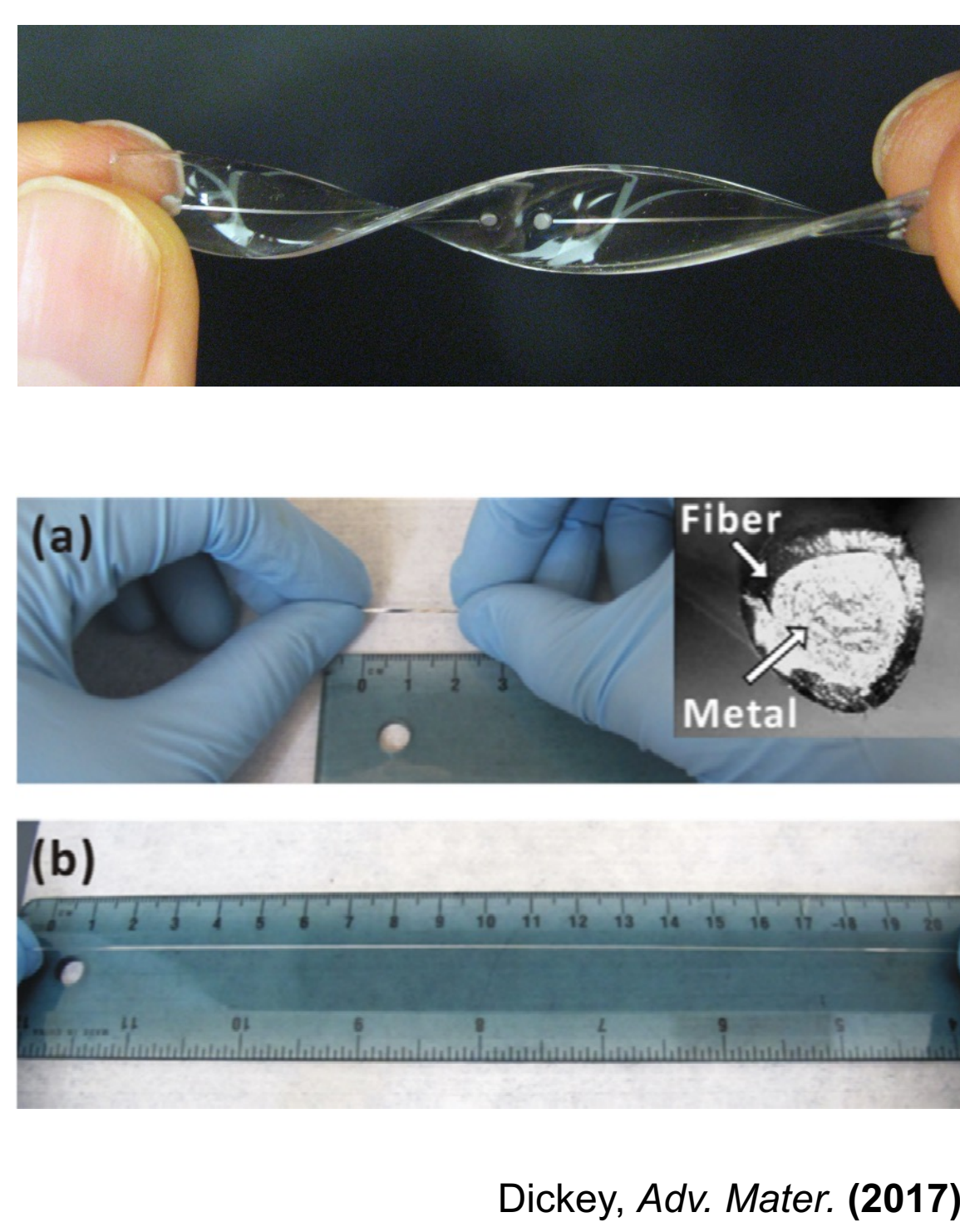
Electrochemical Reduction



Electrochemical Oxidation

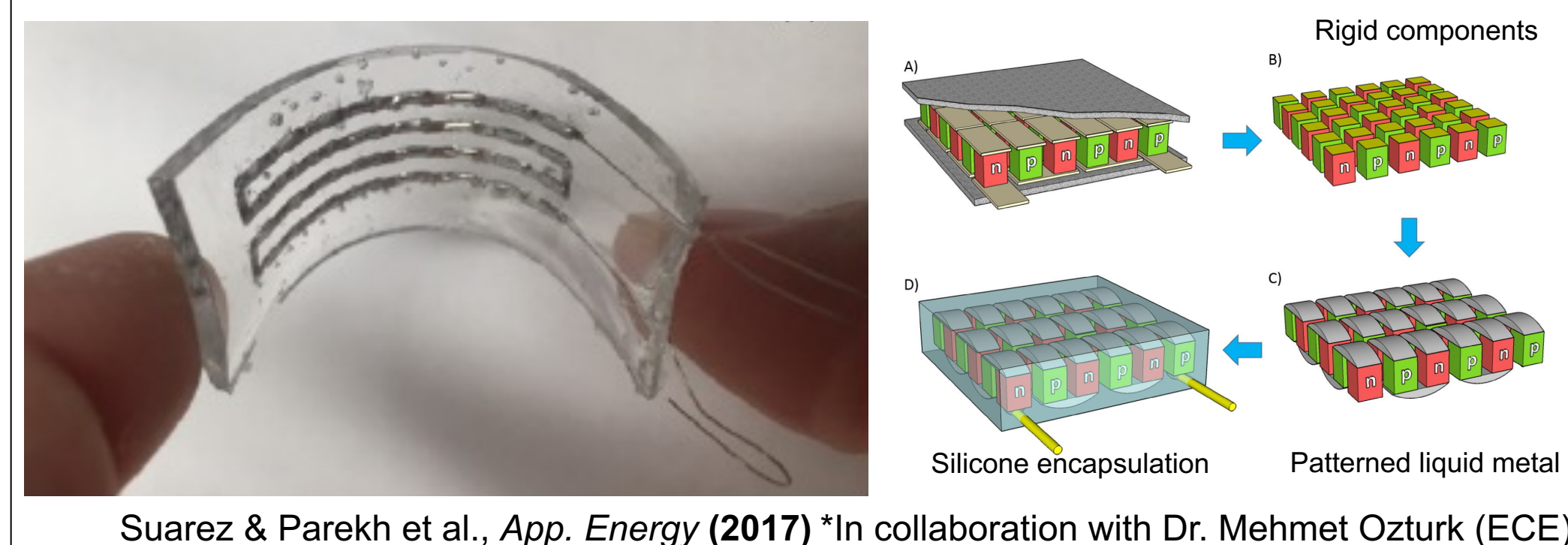


Stretchable & Healable Electronics

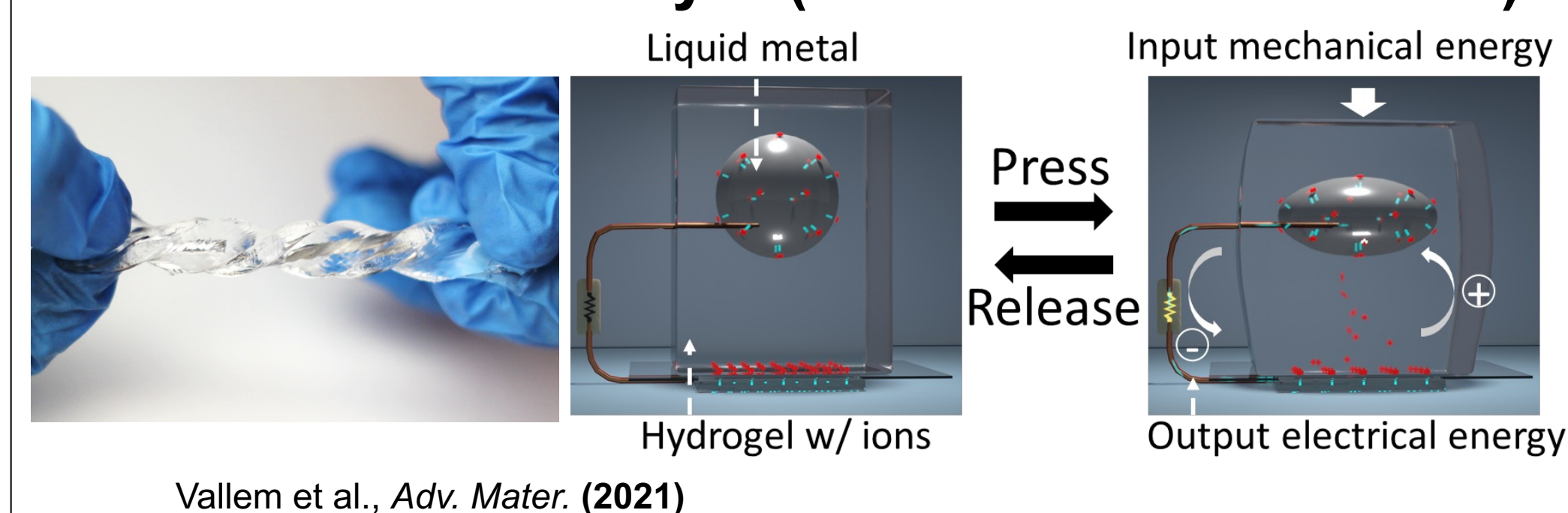


Energy Harvesting

Wearable Thermoelectric Generators



Electrical Double Layer (Mechanical Harvesters)



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