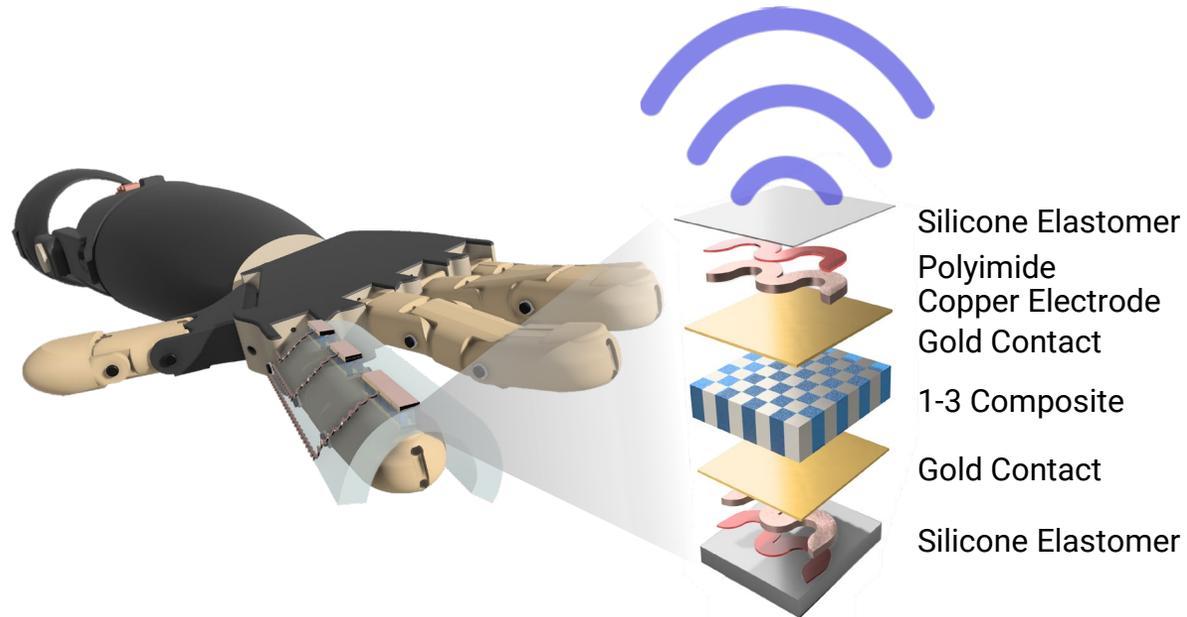


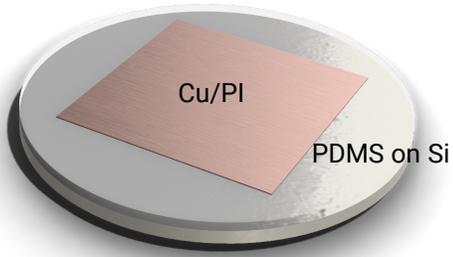
Ultrasound Array for Contactless Gesture and Material Detection

Ultrasound array to reduce the input impedance (by 8 orders) of non-contact triboelectric system (capacitive coupling)
Using **Fringe Capacitance** for sensing

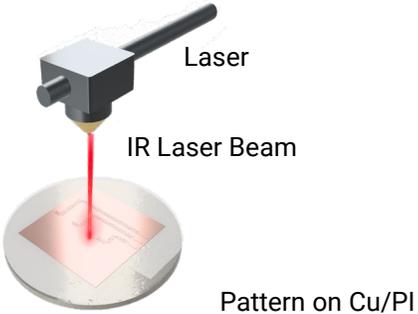


Fabrication of Stretchable Ultrasound Array

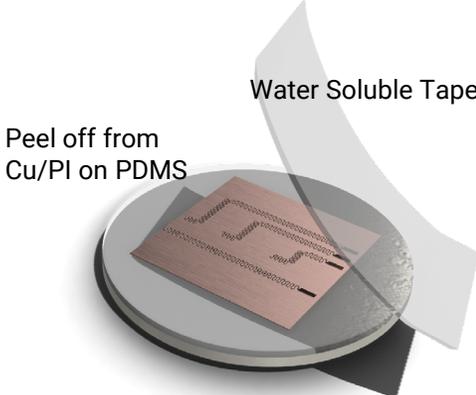
I Surface Activation and Bonding



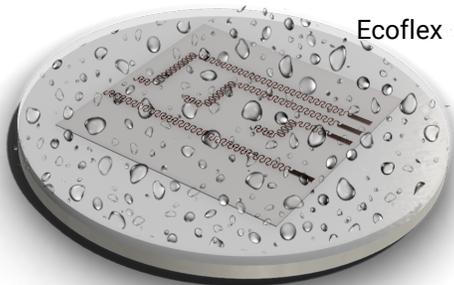
II Laser Processing



III Peel off and Bonding

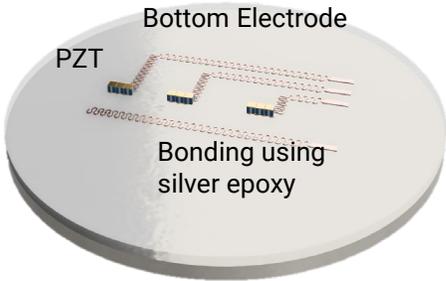


IV Transfer Printing

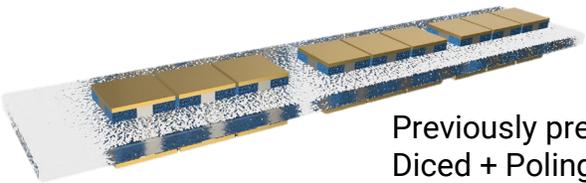
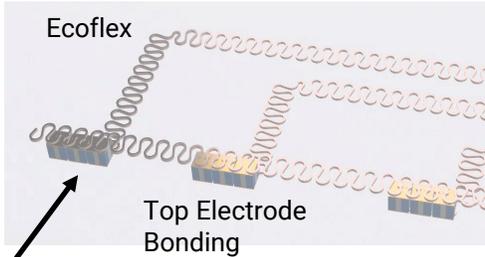


Water assisted tape removal

V PZT Bonding

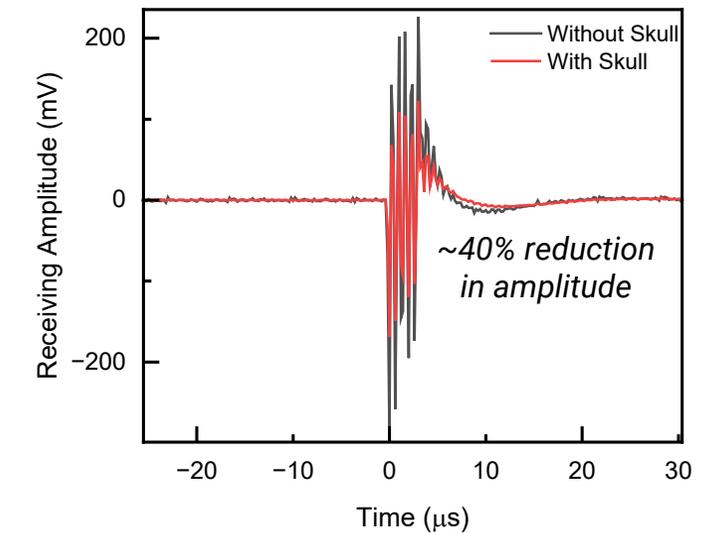
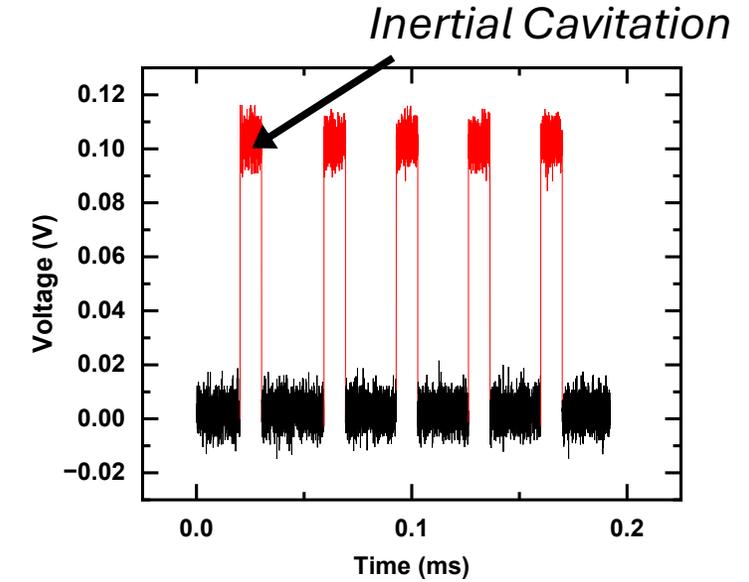
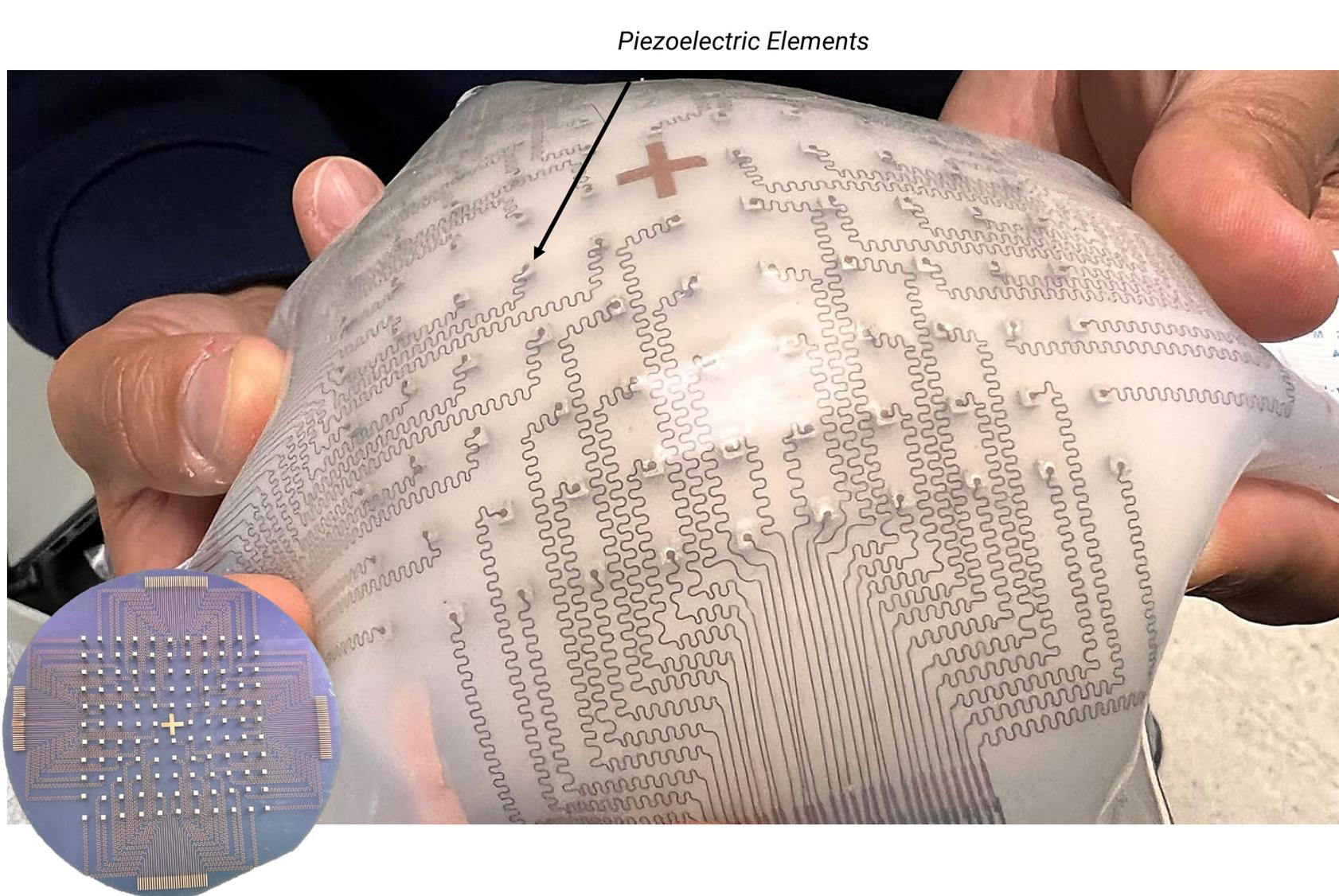


VI Electrode Bonding and Packaging

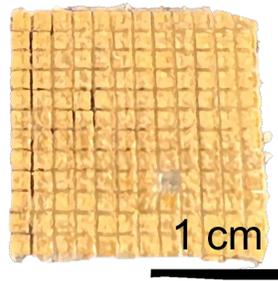
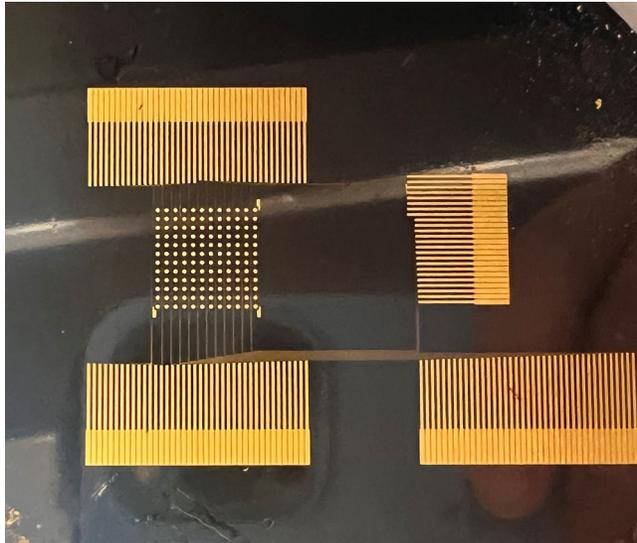
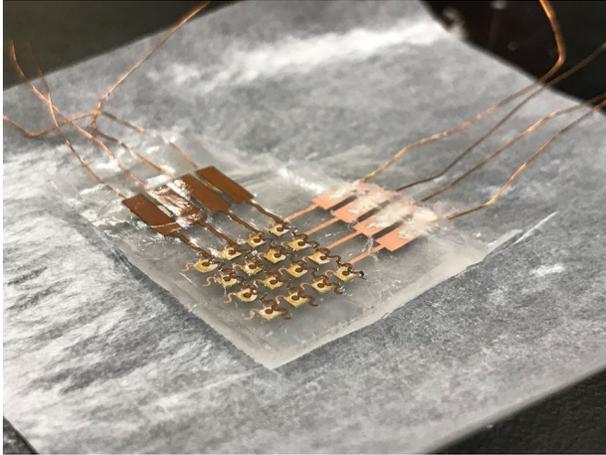


Stretchable Ultrasound Array for Cavitation Detection during TBI

120 – element stretchable ultrasound array for transcranial brain imaging during blasts. Elastomer acts as a better shock absorber than rigid probes.

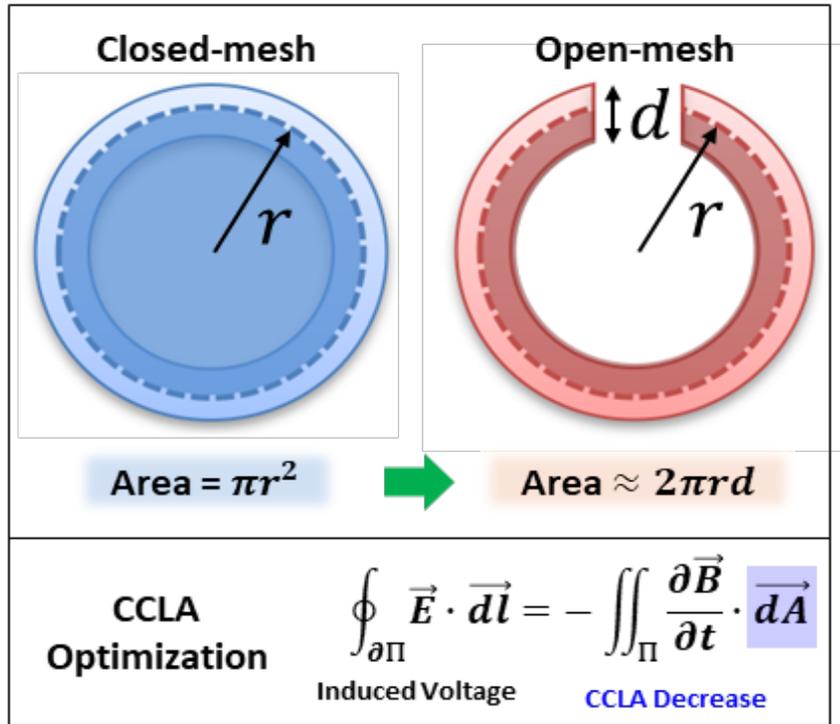


Other Stretchable Ultrasound Array

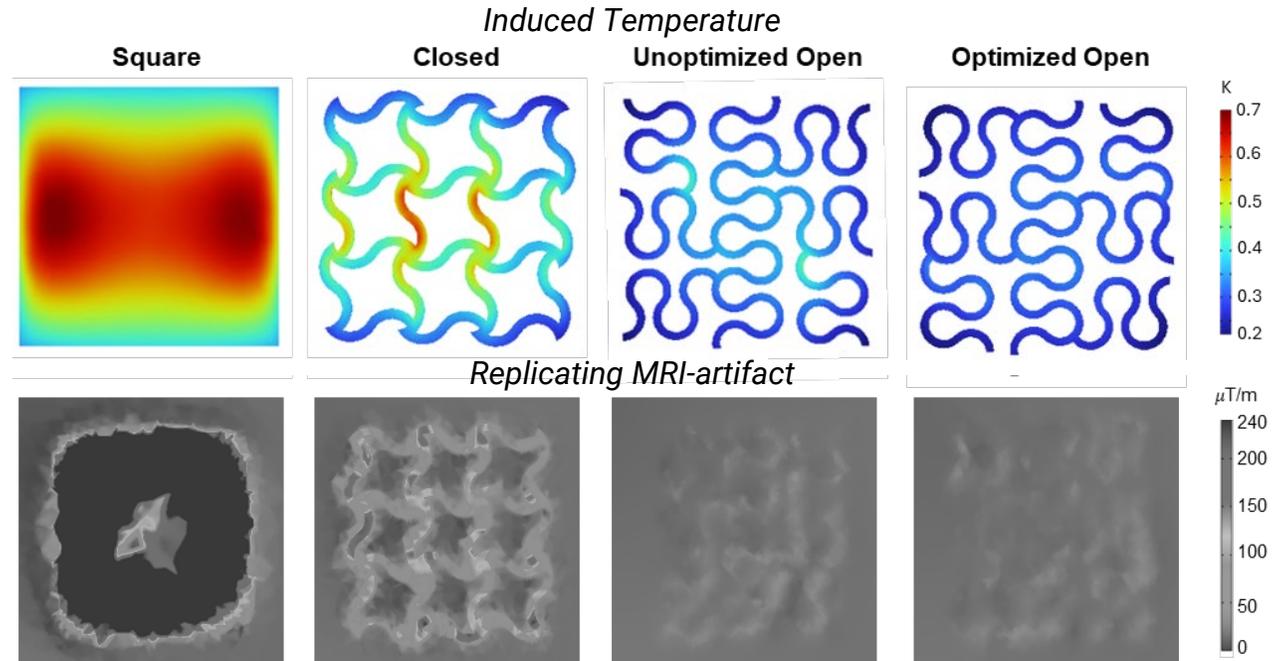


MRI-Compatible Neural Probe Design Optimization

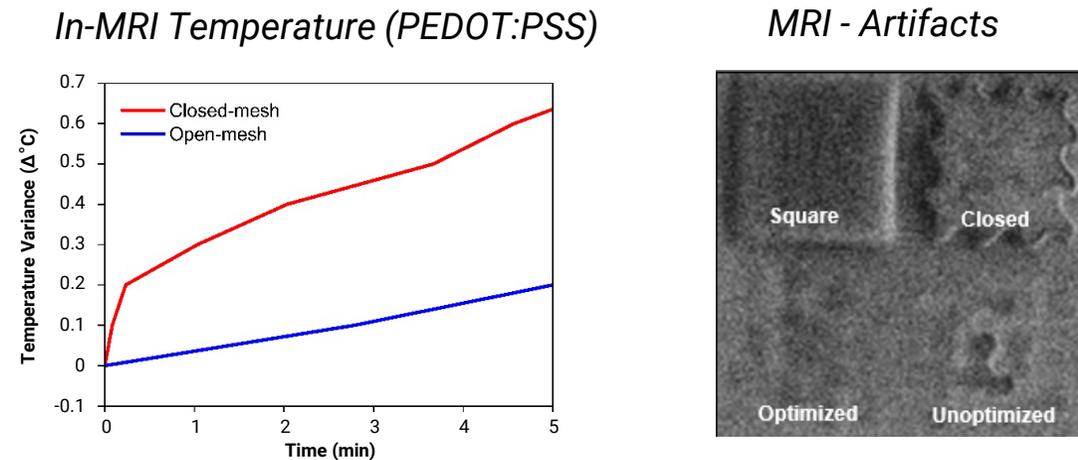
Mesh Structure Optimization



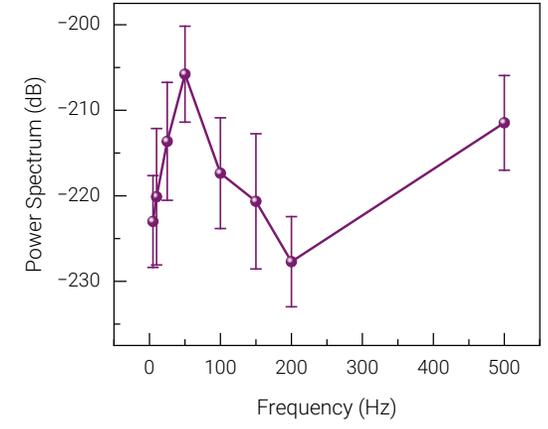
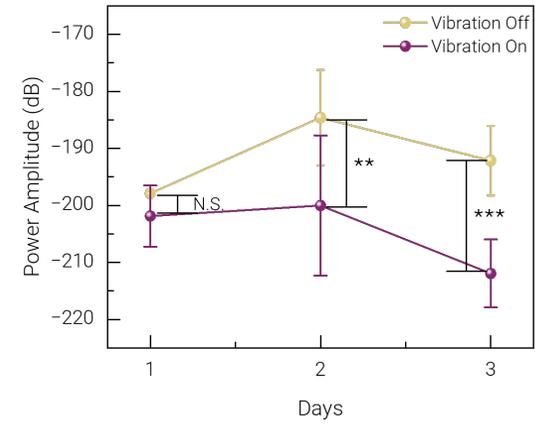
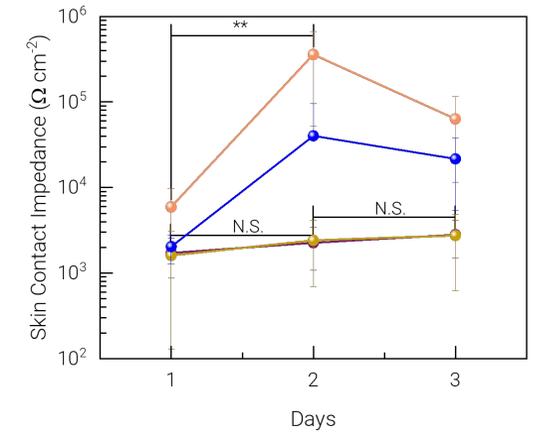
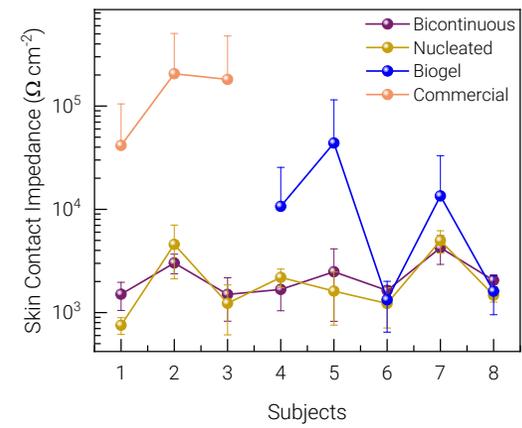
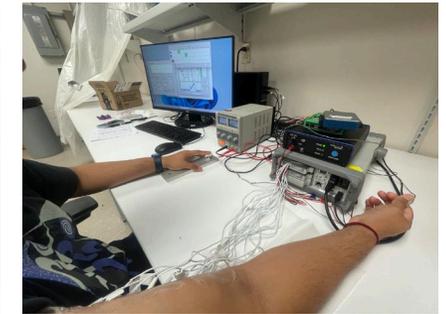
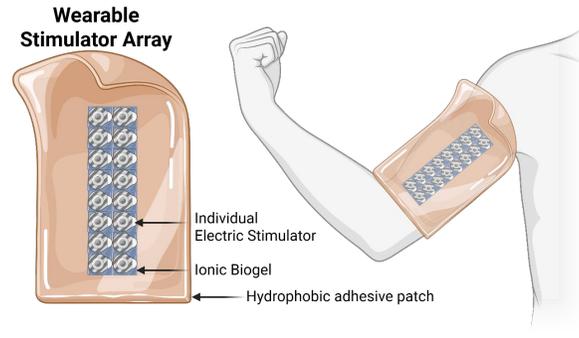
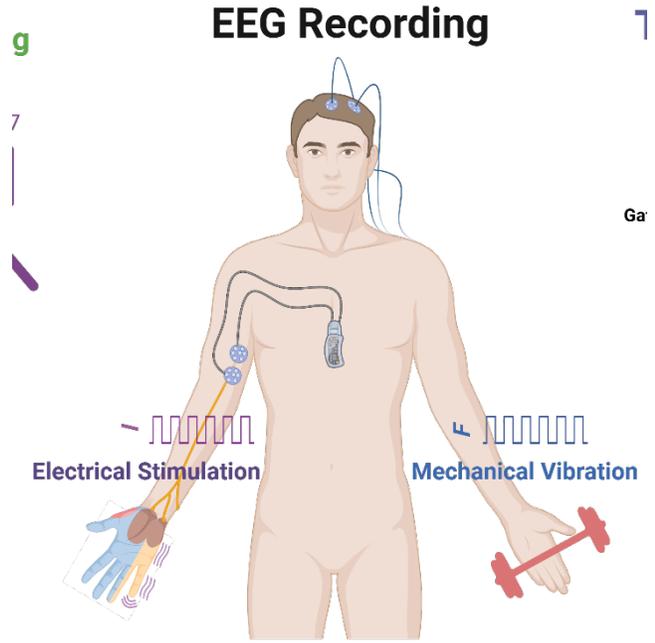
Simulation



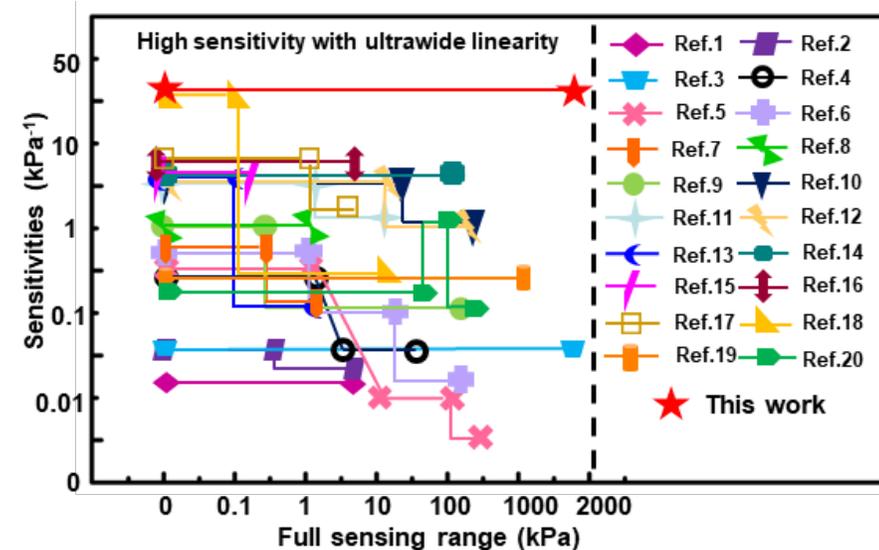
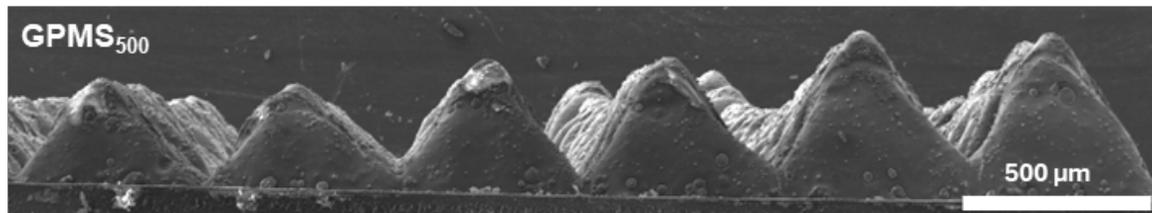
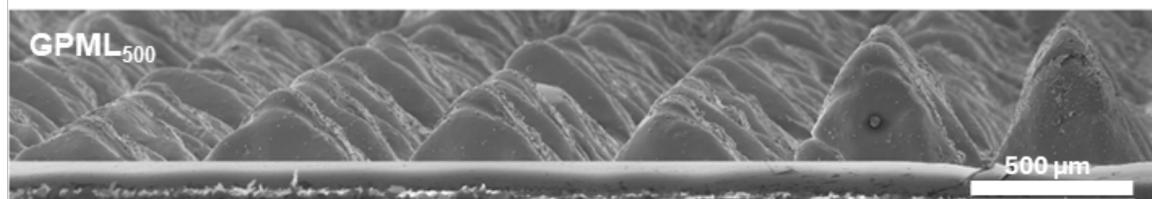
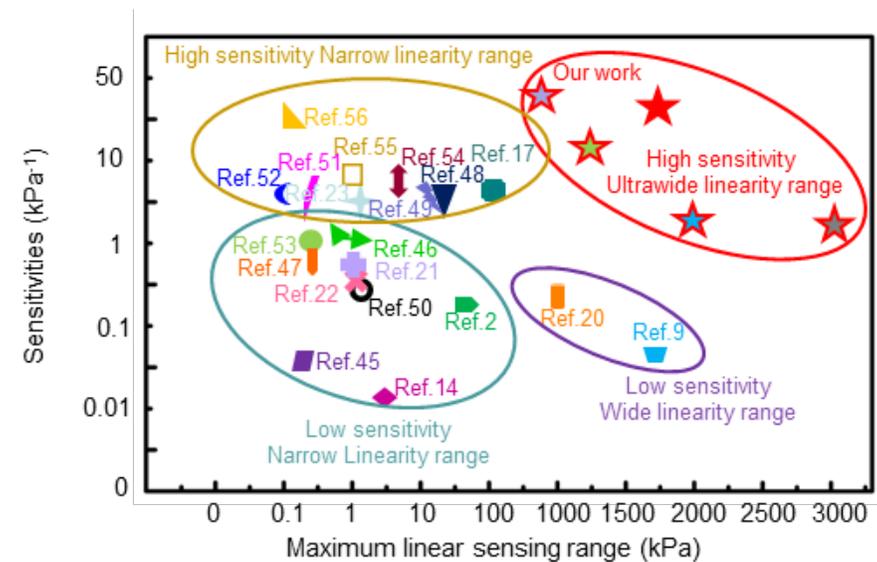
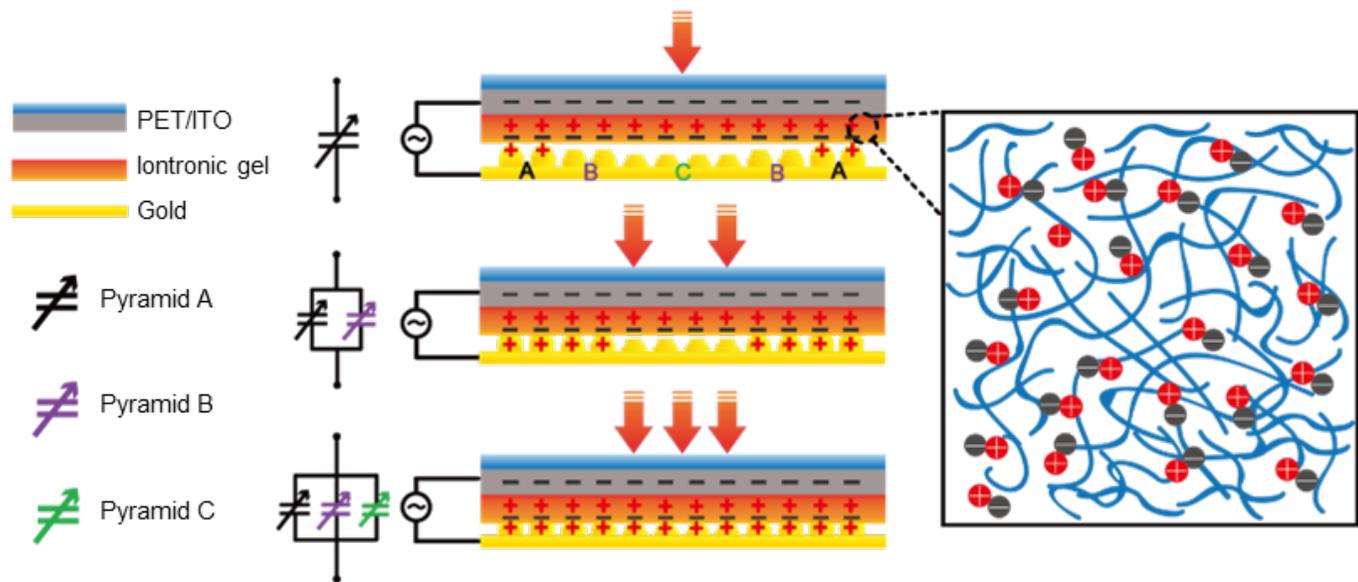
Experimental



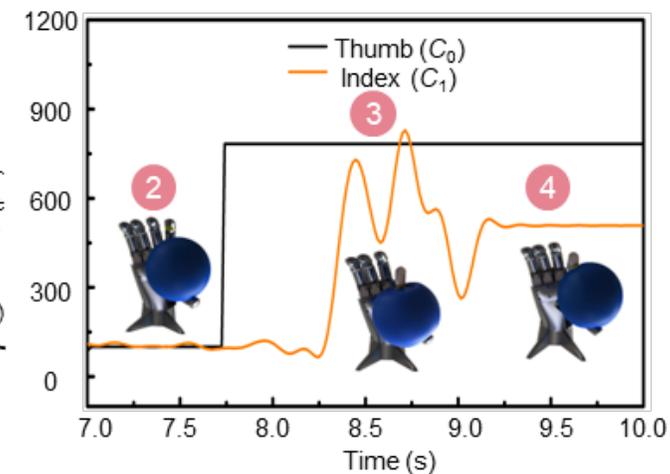
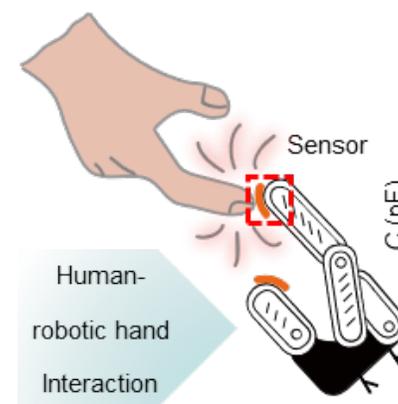
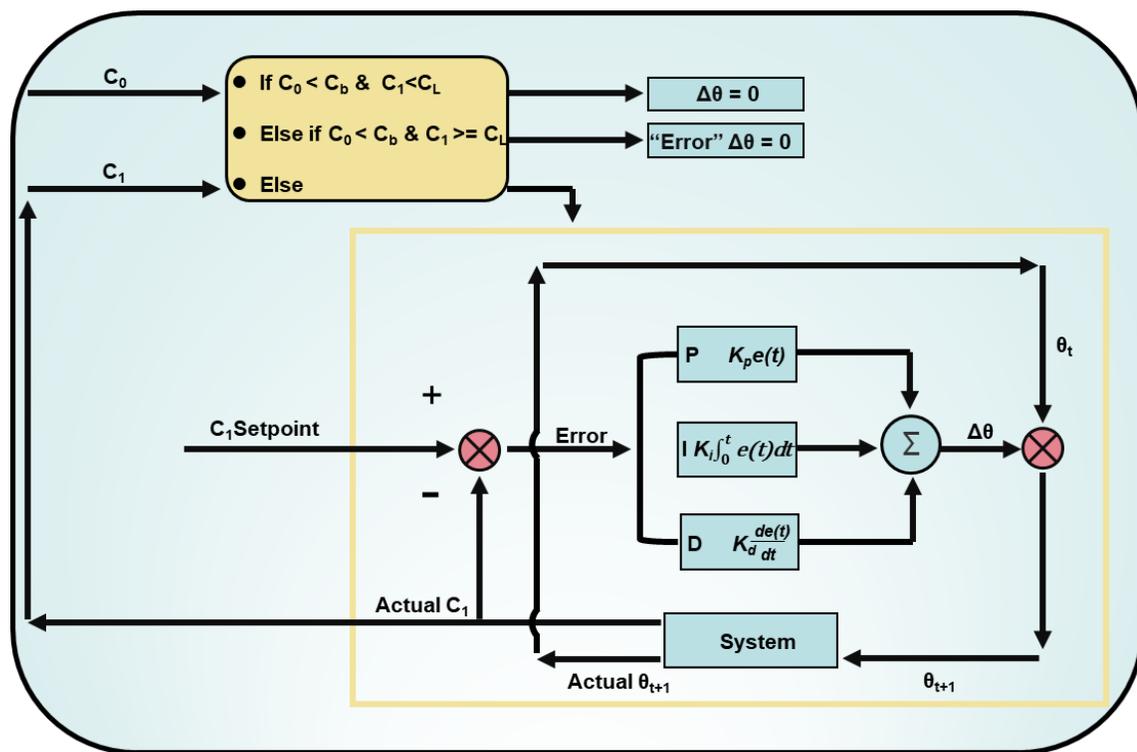
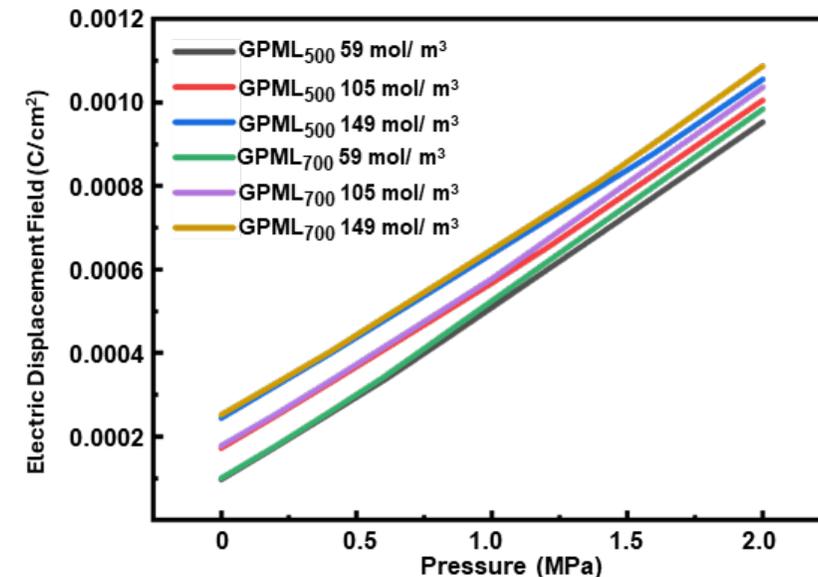
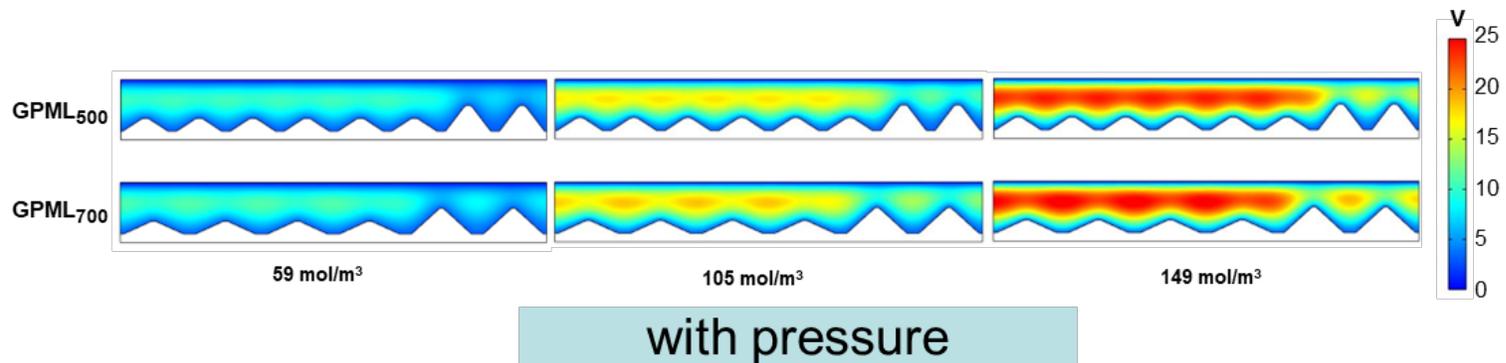
Neural Recording during Haptic Sensation



High sensitivity and sensing range Pressure Sensor



FEA based Optimization and Controller for Grasping



Quantifying Precision Grip (Slip and Force)

Blue – 50g
Red – 100g
Yellow – 500g

