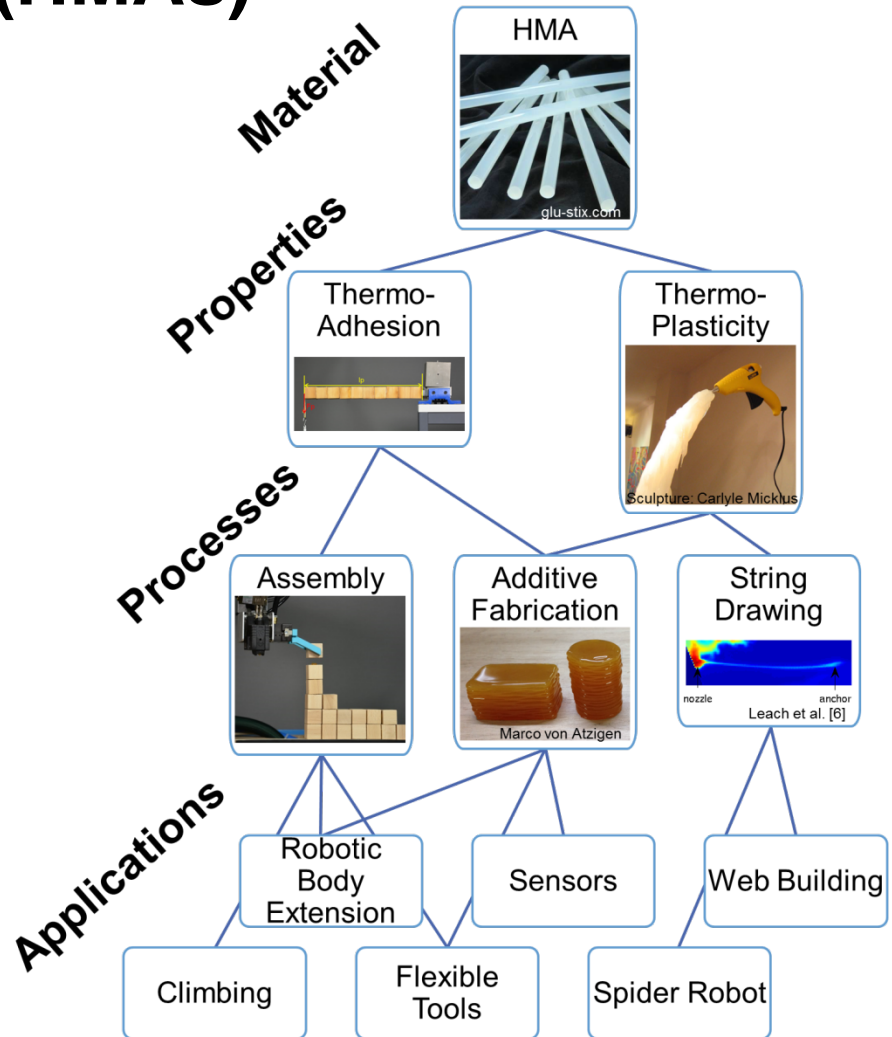




Physically Adaptive Robots Exploiting Thermoplasticity and Adhesion

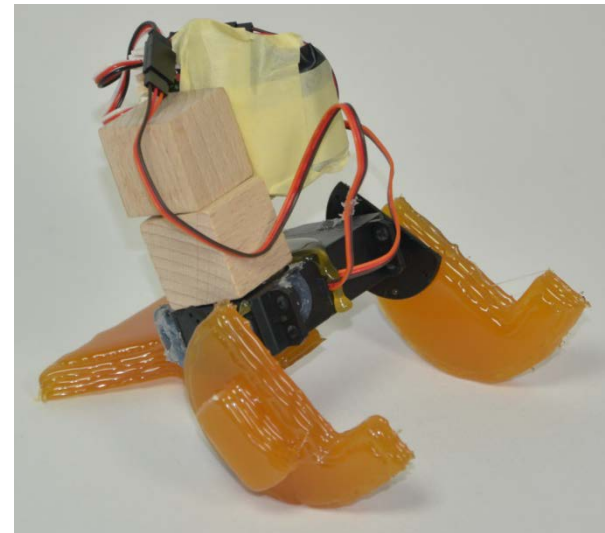
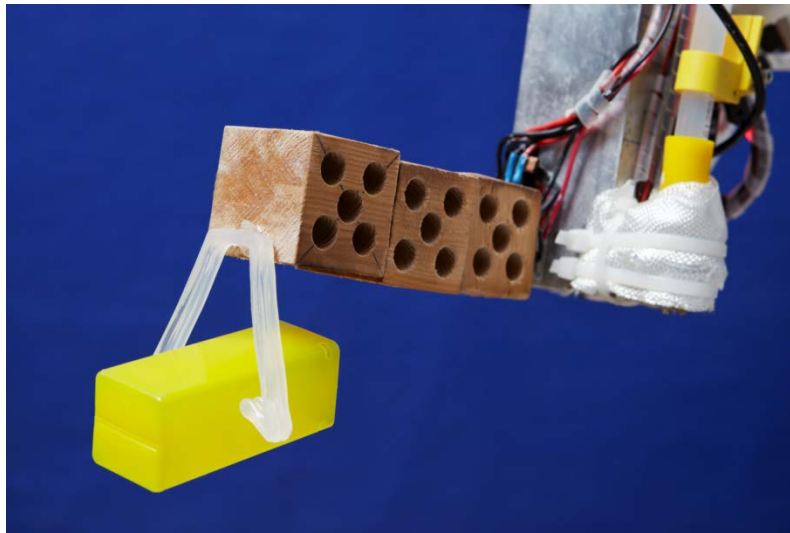
Luzius Brodbeck, Liyu Wang, Surya G. Nurzaman, Derek Leach, Utku Culha, Dorothea Reusser and Fumiya Iida

Hot Melt Adhesives (HMAs)



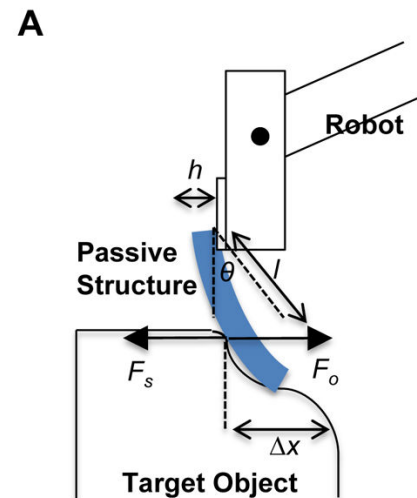
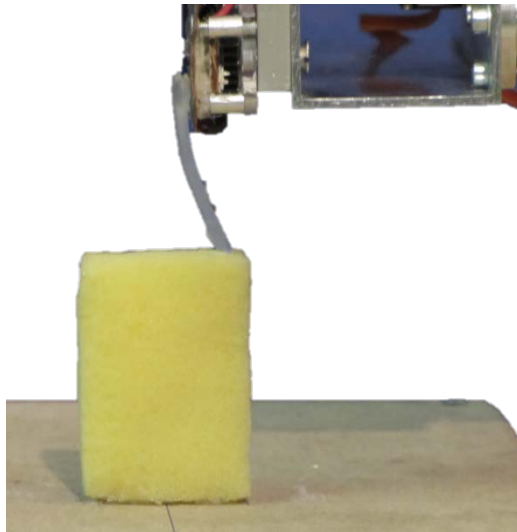
Combining Additive Fabrication & Assembly

- Automatic fabrication of robot extensions
- Additive fabrication of flexible tools with HMAs
- Assembly of hybrid (hard/soft) structures



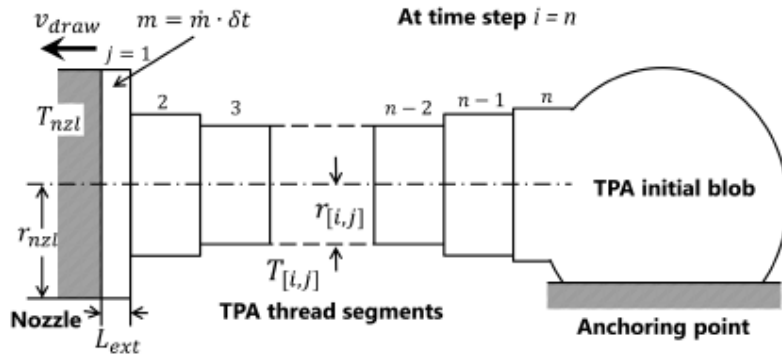
In-situ Adjustable Sensor Morphology

- HMA probe attached to robot end-effector
- Active sensing of different physical quantities
- Adjustable sensing range and sensitivity

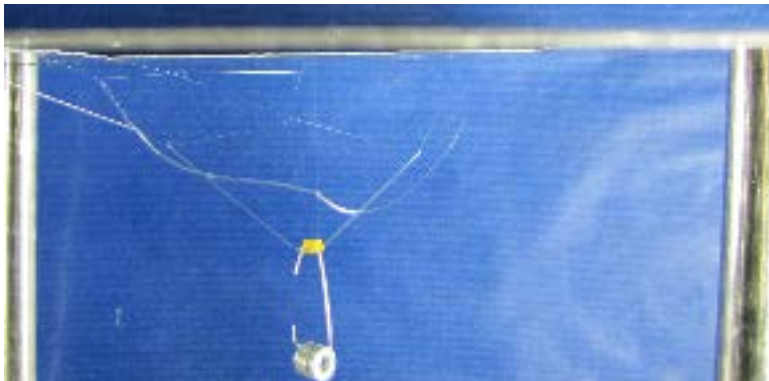


String Drawing: Web Building

String drawing model



Payload bearing HMA web



'Spider' Robot

