MECHANICAL ENGINEERING GRADUATE STUDENT SEMINAR SERIES

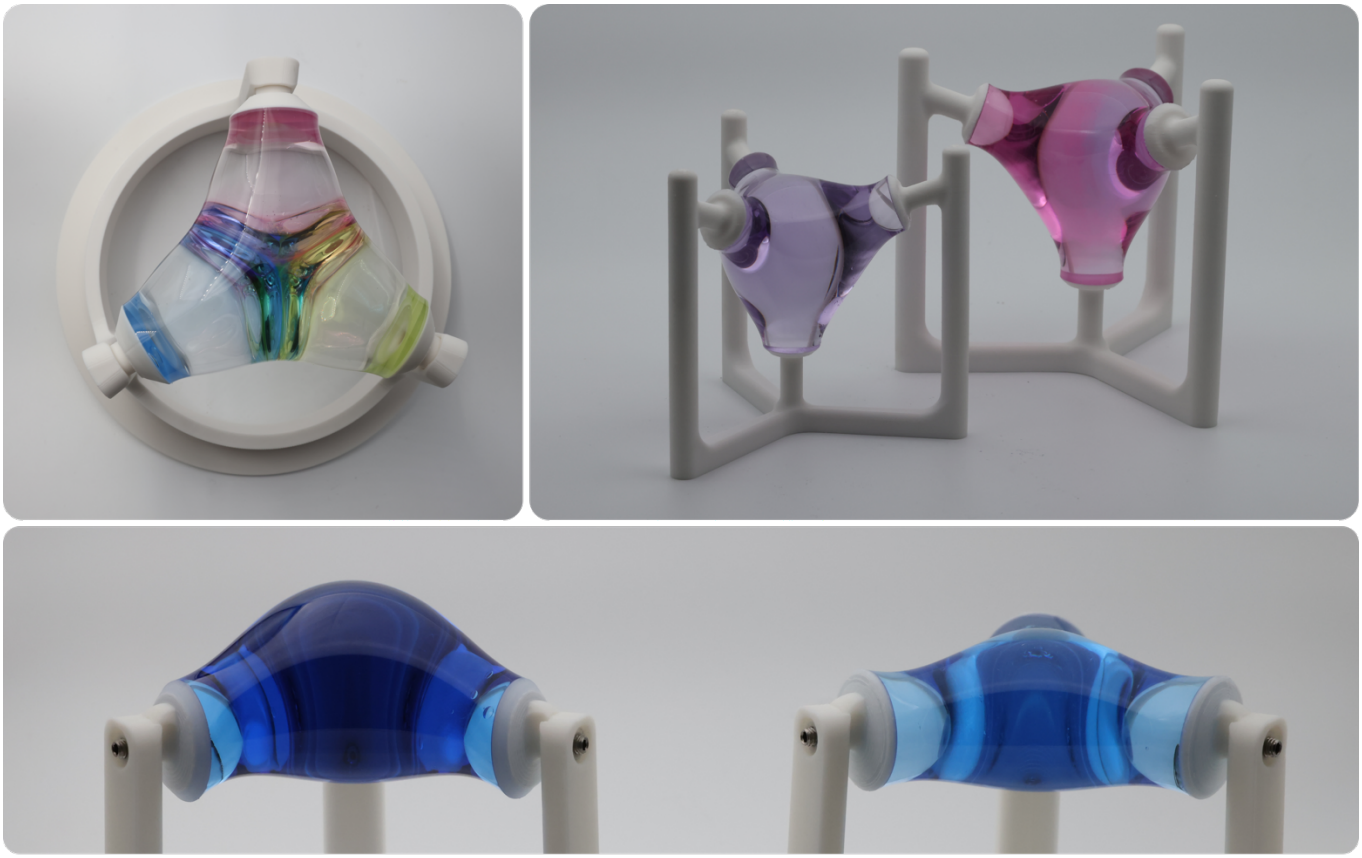
Sunday, February 1, 2026, at 12:30, D. Dan and Betty Kahn Building, Room 217 and ZOOM

Building with liquids in weightlessness

Erez Hochman

Advisers: Prof. Moran Bercovici & Prof. Aaron Sprecher

I will present a new fabrication method that uses surface tension and boundary elements to drive a volume of liquid polymer into a desired structural element in a simulated zero-gravity environment. This method creates rigid elements with extremely smooth surfaces, which can be used independently or assembled into larger constructs. I will start with a short introduction on the motivation for my research: the architectural concept of 'form-finding' and the challenges associated with in-space manufacturing. Next, I will present three basic modes of fabrication and dive into some of the technical details that allow the formation of various surface topologies. I will follow by presenting a programmable framework that creates complex structures through an in-situ sequential formation of geodesic elements. Finally, I will discuss the limitations of the method and present a vision for future developments.



Note: the seminar will be given in English

Seminars Coordinator: Prof. Steven Frankel.