

Colloquium

Functional Molecular Machines: From Switchable Molecular Tweezers to Cyclodextrin-Based Information Ratchets

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How can molecular motion be transformed into function? Molecular machines offer unique opportunities to control motion at the molecular scale, yet achieving the complexity and functionality of natural systems remains challenging. This lecture will present our approach to designing molecular machines that convert controlled mechanical motion into function. First, switchable molecular tweezers will be presented as versatile platforms for controlling luminescence, magnetism, catalysis, and even sol-gel transitions. Our work on cyclodextrin-based rotaxanes will also be highlighted, exploiting the cone-shaped structure and selective functionalization of cyclodextrins to achieve unidirectional, active motion through an information-ratchet mechanism.

Thursday, October 22, 2026 10:30am - 12:00pm
Office Bldg West / Ground floor / Heinzel Seminar Room (I21.EG.101)

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
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