



UNIVERSITÀ
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DNA NANOTECHNOLOGY AS A PLATFORM TO BUILD SYNTHETIC CELLS AND PROGRAMMABLE MATERIALS



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University of Trieste
Main hall, Building C11

Living cells take advantage of spontaneous aggregation of certain proteins and RNA species to spatially and dynamically organize a variety of molecules and reactions. Taking inspiration from nature, our group is developing methods to build assemblies, condensates and patterns using structured motifs built with artificial DNA, that are relevant to the synthesis of self-regulated, autonomous biomaterials. I will present our recent results on controlling the rate of self-assembly and condensation and dissolution of artificial DNA motifs using chemical reactions. I will also discuss mathematical models that support and guide our experiments by capturing specific and non-specific interactions among the motifs.