



Graduate Students Seminar

Department of Chemistry

Sunday June 25th, 2023

Time 14:30

Bldg. 43 Room 015

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Under the supervision of Prof. Doron Pappo

From Theory to Practice: Practical Insights into Oxidative Phenol Macrocyclization and Dynamic Resolution of Binaphthol

The growing concern over the environmental impact of toxic chemical by-products has increased the demand for meticulously designed green synthetic methodologies. Thus, the need for developing new carbon-carbon (C–C) bond-forming reactions that combine efficiency with environmentally benign procedures has increased. One of the most appealing yet challenging methods is metal-catalyzed oxidative coupling. This reaction nullifies the need for the pre-functionalization of substrate precursors, which is required in the Pd-catalyzed cross-coupling reactions. Promising as it seems, inducing enantioselectivity under harsh oxidation conditions is challenging and requires chiral redox catalysts capable of promoting the formation of C–C bonds with high efficiency and face selection. In my study, we focus on two aspects of oxidation coupling reactions. In the first project, we intend to introduce a new type of dynamic kinetic resolution based on reversed electron transfer process to prepare optically pure 2,2'-BINOLs from their racemic mixture.



In addition, the copper-catalyzed oxidative macrocyclization of tethered diphenols reaction will be applied for preparing biologically active macrocyclic biphenols.

