



KEMIJSKI INŠTITUT

Vabilo na Preglov kolokvij / Invitation to the Pregl colloquium

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Velika predavalnica Kemijskega inštituta /
Great Lecture Hall
National Institute of Chemistry
Hajdrihova 19, Ljubljana, Slovenia

**Empowering Synthesis:
From Unique Methods to Complex Natural Products**

Small, heteroatom-containing molecules are highly desired in all areas of chemistry but are also often difficult to access. Selective transformations of aromatic compounds could provide a more direct route to such desirable targets; however, the many challenges associated with dearomative functionalization have left these types of reactions widely underdeveloped. Our group is developing new strategies that bridge the gap between dearomatization and alkene chemistry. In pursuit of such goals, we established dearomative functionalizations using small molecules known as arenophiles. Arenophiles photochemically react with arenes in [4+2]-fashion, enabling reactions of formally isolated alkenes in aromatic substrates. Thus, well-established olefin reactions, such as dihydroxylation, epoxidation, and reduction can now be more directly applied to arenes. Additionally, arenophiles in combination with transition metal catalysis enable rapid access to a diverse range of products that are both challenging to synthesize via existing methods and complementary to those acquired through biological or chemical dearomative processes. Finally, using this dearomatization chemistry, we have recently completed the synthesis of several complex natural products, including pancratistatins, narciclasine, idarubicinone, and aminoglycoside antibiotics.

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Vljudno vabljeni / Kindly invited