## Seminario



Ciclo di Seminari 'Frontiers in Chemistry'

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## **Dearomative Functionalizations: From** Novel Methods to Complex Natural Products

Giovedì 15 Luglio 2021, ore 15.00 Aula A - Link zoom: <u>https://unipd.zoom.us/j/763282419</u>

Small, heteroatom-containing complex molecules are highly desired in all areas of chemistry, but they 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 - arenophiles. Arenophiles photochemically react with arenes in [4+2]-fashion, enabling 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.



## References:

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- (2) Hernandez, L. W.; Klöckner, U.; Pospech, J.; Hauss, L.; Sarlah, D. Nickel-Catalyzed Dearomative Trans-1,2-Carboamination. J. Am. Chem. Soc. 2018, 140, 4503–4507.
- (3) Okumura, M.; Sarlah, D. Arenophile-Mediated Dearomative Functionalization Strategies. Synlett 2018, 29, 845-855.
- (4) Hernandez, L. W.; Pospech, J.; Klöckner, U.; Bingham, T. W.; Sarlah, D. Synthesis of (+)-Pancratistatins via Catalytic Desymmetrization of Benzene. *J. Am. Chem. Soc.* **2017**, *13*, 15656–15659.
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La presenza della S. V. sarà molto gradita.

Prof. Michele Maggini Direttore del Dipartimento di Scienze Chimiche



Università degli Studi di Padova

Corso di Dottorato in Scienze Molecolari

