Mechanochemical synthesis for mitigation pollution in API production

Summary

New sustainable methods are needed to decrease hazardous waste generation during synthesis of active pharmaceutical ingredients (API). Macrocycles, efficiently synthesized by benign methods, and which are capable to act as selective receptors for removal of hazardous organic compounds are needed. We are looking for a motivated PhD student willing to contribute to the development of new mechanochemical synthetic methods for preparation of such receptor molecules, which are suitable for capture of organic pollutants based on supramolecular (host-guest) interactions. The PhD project will also include development of remediation pathway for side products in API production, that employs a mechanochemical conversion of the captured pollutants as an energy-efficient and low- waste technology, which comprises a facile product isolation protocol, fast reaction rates, easy recovery and recycling.

Research field:	Chemistry and biotechnology
Supervisors:	Prof. Dr. Riina Aav Dr. Dzmitry Kananovich
Availability:	This position is available.
Offered by:	School of Science Department of Chemistry and Biotechnology
Application deadline:	Applications are accepted between June 01, 2022 00:00 and June 30, 2022 23:59 (Europe/Zurich)

Description

Experimental work will be conducted in chemistry research lab and access to NMR, HPLC, MS, IR, UV, FS, CD, VCD, single crystal XRD analysis is available in the group. The PhD student will be supported by Department of Chemistry and Biotechnology through PRG399 and other grants of PI

Responsibilities and tasks:

Development of new synthetic methods and synthesis of complex molecules for supramolecular applications. Supervision of undergraduate students in research lab.

Qualifications:

Master degree or equivalent in chemistry

The applicants should fulfill the following requirements:

Strong knowledge of organic synthesis (essential) and experience with the analysis of organic compounds (desired).

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