

POSTGRADUATE RESEARCH OPPORTUNITY

Project Title: Lipase mediated synthesis of chiral amines

Duration of Project: 2 years

Funding Agency: Presidents Seed Fund

Type of Degree Offered: MSc

Stipend: The MSc student will be paid a stipend of €12,000 per annum and receive full fees remission for a maximum duration of two years.

Minimum Qualifications/Experience Necessary/Any Other Requirements:

Applicants should hold a minimum of an honours bachelor's degree at 2:1 level or equivalent in a discipline relevant to the project, such as Chemistry/Materials Science. Excellent first-hand knowledge of chemical techniques and characterisation methods.

IELTS [International English Testing System] Applicants must have a minimum of 6.0 with no component score less than 6.0.

Research Supervisors: Dr. Noreen Morris & Dr. Sean Reidy

For further information please contact: noreen.morris@tus.ie

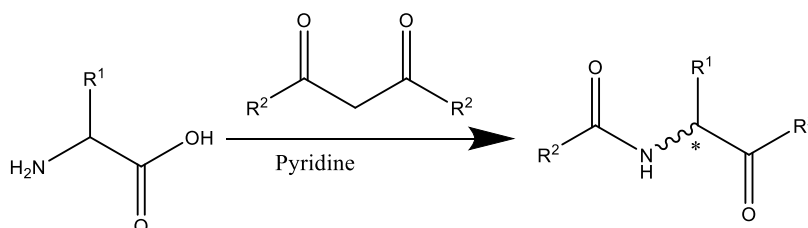
Applications: Download Application Form at <https://www.ait.ie/research-and-innovation/postgraduate-research-opportunities>

Closing date for receipt of completed application forms is **5pm May 27th 2022**
Please submit your completed application by Email to: pro@ait.ie

Main Objectives

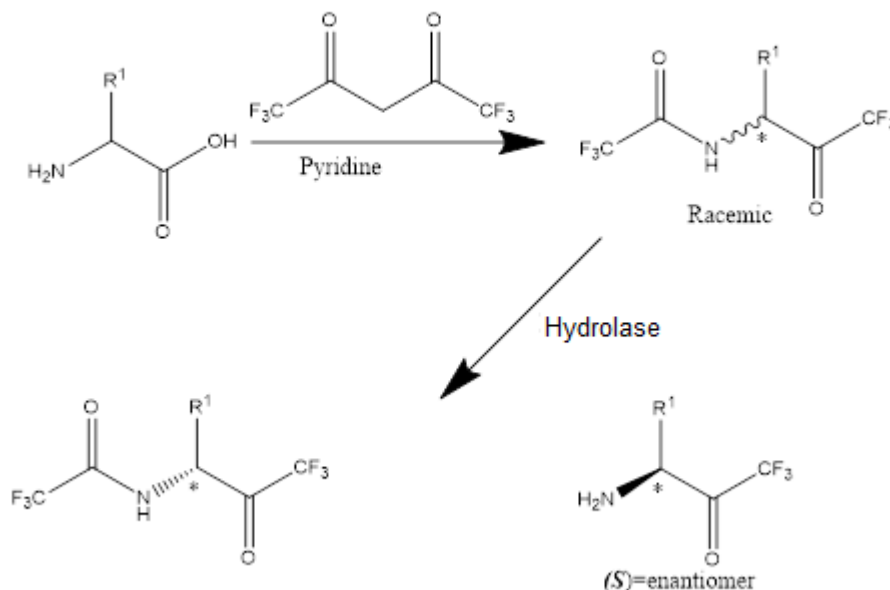
This project aims to exploit the Dakin West reaction to produce fluorinated amino-ketone substrates which will then be biotransformed into subsequent chiral amines by treatment with lipases. The Dakin West reaction is illustrated below and involves the rearrangement of amino acids in the presence of an anhydride to produce the corresponding racemic amino-ketone.

Dakin West Reaction



By using trifluoro acetic anhydride we can prepare the corresponding trifluoro ketone which can be further modified biocatalytically. The project will seek to exploit this reaction to prepare a series of fluorinated analogues.

Modified Dakin West Reaction



The project will investigate the potential for preparation of enantiopure amines by treatment of the fluorinated racemate with lipases.