LERU STudent REseArch Mobility Programme (STREAM)
Project proposal

Host University: Leiden University

Main Research Field (drop-down list): 13.3 Chemistry

Specified field, subject:
Energy & Sustainability, Spectroscopy, Organic Chemistry, Energy, Chemical Biology, Inorganic Chemistry, Chemistry, Life science

Research project title:
Metal complexes in Catalysis, Biomimetics and Inorganic Materials

Possible starting month(s):

Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐

Possible duration in months:
Minimum: 3 months
Maximum: 2 semesters

Suitable for students in: ☒ Bachelor level ☒ Master level

Prerequisites:

- Minimum GPA 3.2 out of 4
- Basic knowledge (sophomore level) in general chemistry, inorganic chemistry, organic chemistry and basic spectroscopy.

Description:
Transition metal complexes are central in catalysis, materials science, and biomimetics. In this project the student prepares organic ligands in order to coordinate them to metal ions. After characterisation of the new metal-containing compounds, a number of specific features such as catalytic properties, fluorescence, photochemical or biological activities, might arise. While some copper or nickel complexes might mimic the catalytic properties of natural enzymes, such as proton or CO2 reduction, lanthanide complexes might be made that show intense luminescence so that they can potentially be used in LEDs, and ruthenium complexes may be prepared that have potential as light-activated anti-tumor drugs. A literature survey is part of the project and serves to determine the choice of systems to be studied.

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The exact topic of the research depends on the interests and preferences of the student, but is also dependent on the availability of supervision at a given time.

Faculty: Science

Faculty Department: Leiden Institute of Chemistry (LIC)

Deadline for nomination to reach host university:
1 April or else 1 October.

Notification of admission given by the end of:
Approximately 6 weeks after receipt of the application.

Additional information:
Number of placements available: 1 per semester (more upon request, to be decided by the dept.)
The exact duration needs to be determined in consultation with the Research Project Supervisor

Contact person:
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