



Mechanisms of coccolithophore calcification

A PhD studentship is available in the group of Dr Fabio Nudelman (School of Chemistry, The University of Edinburgh; <http://www.chem.ed.ac.uk/staff/academic-staff/dr-fabio-nudelman>). The studentship is fully funded for 42 months by the University of Edinburgh and covers tuition fees and an annual stipend (starting at £19,273 per annum) for a candidate satisfying EPSRC residency criteria. <https://www.ukri.org/councils/esrc/career-and-skills-development/funding-for-postgraduate-training/eligibility-for-studentship-funding/#contents-list>

Project Summary

Coccolithophores are marine unicellular phytoplankton that are one of the most prolific calcifiers in the oceans. They produce polycrystalline scales made of crystals of CaCO_3 in the form of calcite called coccoliths, displaying a remarkable ability to orchestrate the multi-level assembly of mineral building blocks into hierarchical structures.

It is known that some species of coccolithophores – *Coccolithus braarudii*, *Syracosphaera apstenii*, and *Calcidiscus leptoporus* – require Si for calcification. When Si is absent from the medium, or when Ge, which competitively inhibits Si uptake, is present, calcification results in malformed coccoliths. The aim of this research is to exploit the dependence of Si for calcification to understand how coccolith formation is controlled. To answer this question, we will use a combination of synchrotron-based and cryogenic electron microscopy techniques to characterize the composition, shape and the intracellular environment of normal and malformed coccoliths. This will allow us to link compositional and morphological variation seen in the coccoliths to biological events taking place in the cell.

In the first instance, the initial application (including cover letter and CV) should be directed to: Dr Fabio Nudelman, School of Chemistry, University of Edinburgh, David Brewster Road, Edinburgh EH9 3FJ, UK.
Fabio.nudelman@ed.ac.uk

The position will remain open until filled

References

IMPORTANT

Before Submitting your cover letter and CV, please complete the online [School of Chemistry Equality, Diversity and Inclusion Form 2024](#).

The form will automatically generate a unique “Receipt Number” that you MUST include in your cover letter.

Equality and Diversity

The School of Chemistry holds a Silver Athena SWAN award in recognition of our commitment to advance gender equality in higher education. The University is a member of the Race Equality Charter and is a Stonewall Scotland Diversity Champion, actively promoting LGBT equality. The University has a range of initiatives to support a family friendly working environment. See our University Initiatives website for further information. University Initiatives website: <https://www.ed.ac.uk/equality-diversity/help-advice/family-friendly>