

CiQUS Lecture



Prof. Matthew Langton

**Stimuli-responsive supramolecular ion receptors
and transmembrane transporters**



Department
of Chemistry

FONDO EUROPEO DE DESENVOLVIMENTO REGIONAL
PO FEDER Galicia 2014-202 - *Unha maneira de facer Europa*

Wednesday, March 15, 2023
12:15 pm - CiQUS Seminar Room

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Abstract:

Ion transport across lipid bilayer membranes mediated by membrane proteins is a fundamental process in biology. Synthetic ion transporters find numerous applications, including therapeutics, tools for probing biological systems and regulating flow of material in and out of artificial cells.¹ In this talk, I will present our recent work on developing synthetic stimuli-responsive receptors, fluorescent sensors and transmembrane transporters for anions. In particular I will discuss how we can use photo-responsive receptors to bind and sense anions,² demonstrate how anion transport across lipid bilayer membranes may be achieved using unconventional non-covalent interactions such as halogen bonding,³ and how this process may be regulated with external stimuli.⁴⁻⁷

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Biosketch:

Matthew Langton studied Chemistry at Lincoln College, University of Oxford, carrying out his Part II research year in the group of Harry Anderson FRS. He remained in Oxford for a DPhil with Paul Beer, followed by a short spell as a EPSRC Doctoral award PDRA in the same group. In 2015 he moved to the University of Cambridge to take up an Oppenheimer Early Career Research Fellowship, based in the group of Chris Hunter FRS. Matthew returned to Oxford in 2018 where he is now a Royal Society University Research Fellow, Associate Professor of Inorganic Chemistry and Fellow and Tutor at Balliol College.