Illuminating Chemical Approaches for the Study of Living Systems

Abstract: Our newly established research group at King's College London (since October 2023) operates at the intersection of synthetic chemistry and biology, with a focus on leveraging chemistry to address pressing challenges in medicine. We specialise in developing "smart" chemical probes for pre-clinical and clinical imaging, as well as designing advanced drug delivery systems.

Currently, our research focus is based on the recent discovery of hypoxia-activated platinum(IV) prodrugs. Tumours often contain hypoxic regions—areas with low oxygen levels—due to the high metabolic demands of cancer cells and poor tumour blood supply. This unique feature presents an opportunity to create therapies that selectively target cancerous tissues, by exploiting the stark contrast in oxygen levels between tumour and healthy cells. In this talk, I will present our latest findings on platinum(IV) prodrugs and discuss the future directions for this exciting area of research.