Milo Smith

2019 cohort

Yusuf Hamied Department of Chemistry

I did my undergraduate MChem degree at Oxford, where I spent my fourth year working on organocatalysis with Professor Darren Dixon. After a spending a year as a chemistry tutor I returned to research, completing an MRes with Dr James Bull at Imperial College London working on synthetic methods to access medicinally relevant azetidine derivatives.

In 2019 I joined the Gaunt group in Cambridge as part of the SynTech CDT, where my research is centred on the use of an ultrahigh-throughput nanoscale synthetic chemistry platform. I am using the platform to study photoredox catalysis for alkylamine synthesis. Within this theme, my research aims fall into three categories: (1) directed screening for reaction discovery; (2) generation of high-quality, standardised datasets for machine learning applications (such as predictive modelling); (3) tandem library synthesis and bioassay for the discovery of new lead compounds for drug discovery.

SynTech is a great programme for me because its core values are aligned with my own beliefs about the future of synthetic chemistry. We have come long way with two hands, flasks and measuring cylinders, and this method of working will continue to be indispensable for many purposes. However, it seems undeniable to me that supplementing these well-established workflows with new ones which leverage modern technology, such as automation and artificial intelligence, will accelerate discovery and innovation. As an organic chemist, my core interests lie in reactivity and mechanism, but using these tools synergistically with those from other disciplines to address key global challenges is something I find very exciting.