

LIEBIG LECTURESHIP

der Liebig-Vereinigung für Organische Chemie
in der Gesellschaft Deutscher Chemiker



December 2022

John F. Bower

University of Liverpool / UK

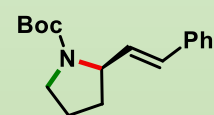
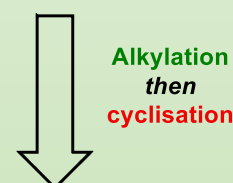
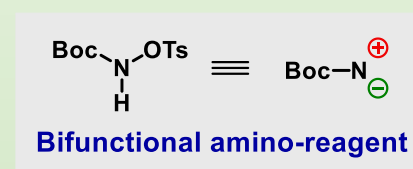
New Electrophilic Amination Strategies for N-Heterocycle Synthesis

Our group develops catalysis platforms that enable the efficient generation of chiral building blocks and heterocyclic scaffolds. Selected highlights of our activities in N-heterocyclic chemistry will be presented. This will include recent advances in the development of aza-Heck reactions that are triggered by oxidative addition of N-O bonds to Pd(0)-complexes. Metal-free processes that exploit the innate electrophilicity of N-O bonds will also be discussed. The seminar will encompass methodological advances,^[1] mechanistic aspects and applications in total synthesis.^[2]

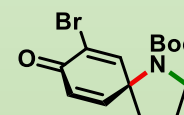
Representative Publications

[1] X. Ma, I. R. Hazelden, T. Langer, R. H. Munday and J. F. Bower; Enantioselective aza-Heck cyclizations of N-(tosyloxy)carbamates: synthesis of pyrrolidines and piperidines. *J. Am. Chem. Soc.* **2019**, *141*, 3356-3360.

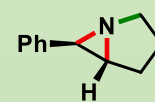
[2] B. T. Jones, J. García-Cárceles, L. Caiger, I. R. Hazelden, R. J. Lewis, T. Langer and J. F. Bower; Complex polyheterocycles and the stereochemical reassignment of pileamartine A via aza-Heck triggered aryl C-H functionalization cascades. *J. Am. Chem. Soc.* **2021**, *143*, 15593-15598.



Aza-Heck reactions
(Pd-catalysed)



Dearomatizations
(metal free)



Alkene aziridinations
(metal-free)



Mülheim

Tuesday

December 6th

Münster

Wednesday

December 7th

Berlin

Thursday

December 8th

Gießen

Friday

December 9th

Freiburg

Monday

December 12th

München

Tuesday

December 13th

John obtained his PhD degree under the supervision of Professor Timothy Gallagher at the University of Bristol (2003-2007). He then undertook postdoctoral appointments with Professor Michael Krische (University of Texas at Austin, 2007-2008) and Professor Timothy Donohoe (University of Oxford, 2008-2010). In 2010, he was awarded a Royal Society University Research Fellowship and commenced his independent career at the University of Bristol, where he was promoted to Professor in 2017. In 2020, he was appointed to the Regius Chair of Chemistry at the University of Liverpool. The group's research interests lie broadly within the areas of organic synthesis and catalysis, with a particular focus on metal-catalysed processes and their application to heterocyclic chemistry.