

Durham's Integrated Chemical Reaction Facility (ICRF) in Full Bloom

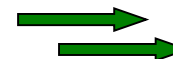
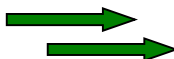
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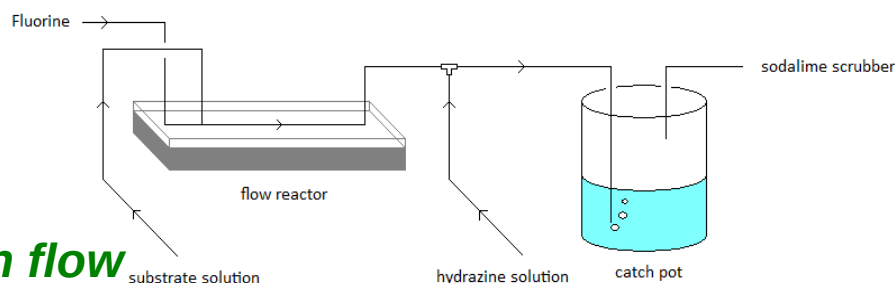


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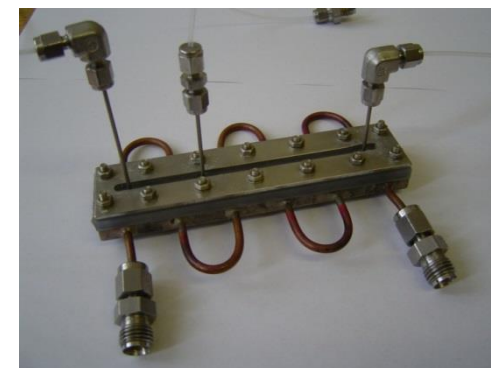
- Metal-catalysed transformations
- Organocatalytic reactions
- Aqueous chemistry and water-based or -tolerant reactions
- Organofluorine chemistry
- Design and application of flow reactor systems
- High pressure / hazardous process chemistry
- Chemistry for energy feedstock production and interconversion
- Chemicals from biomass
- Polymer chemistry



- Creation of an **Integrated Chemical Reaction Facility** (ICRF) in 2012/13 (£750K) :
 - new laboratory, new equipment, one new post (managerial / technical)
- Semi-commercial research and innovation facility exploiting CSCP research
- For industry and academia use; education; and training (technical and safety)
- Unique equipment and expertise available for internal use and external collaboration/development/proof of concept studies/consultancy
- Providing an interface for access to expertise and equipment
- Environment to build research collaborations and foster enterprise



Fluorination in flow



- Highly reactive/toxic gas handling laboratory facilities
(e.g. organofluorine chemistry)
- State-of-the-art equipment and instrumentation



- Durham Chemistry's unique high pressure laboratory
 - The high pressure laboratory includes one control room and 4 blast cells



➤ **Dedicated High Pressure Chemistry Facility**

- Rated up to 5 L, 300 atm
 - Pressure intensifier
- Autoclaves up to 350 atm
- Stirred autoclaves up to 350 atm
- Rigs for catalytic studies
 - Infrared cells and FTIR spectrometer

*Autoclave construction,
modification and maintenance*

➤ Agilent GC/MS (7820A GC/G7036A MS)

➤ Agilent HPLC

➤ Bruker 450 GC

➤ Analytix Pyrolyser

(Pyrolysis unit with catalyst bed and steam injection capability)



Thank you for listening!

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