C-H functionalisation and Fluorination Using Main Group Electrophiles

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Our group have an ongoing interest in making and using main group electrophiles, particularly boron, zinc and aluminium based electrophiles. While the group’s major focus has been on developing stoichiometric electrophilic C-H borylation reactions this talk will focus on some of our most recent studies that use main group electrophiles for other things, specifically: (i) to effect catalytic C-H metalation and (ii) to perform fluorinations (phase transfer fluorination and highly secondary selective deoxyfluorination). We will discuss the transformations shown below, along with our mechanistic studies into these processes.

1. Main group catalysed C-H metalation1,2



1. Boranes in fluorination chemistry2,3



**References**

1. *ACS Catalysis*, **2023**, 13, 2286.
2. Unpublished work.
3. *Chem. Sci.* **2022**, 13, 2661.