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Research Proposal Seminar

Asymmetric Halogen Bonding Catalysis

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Guide: Prof. G. Sekar **Venue: Zoom**

Abstract

Halogen bonding is the non-covalent interactions based on electrophilic halogen substituents featuring very interesting properties and the numerous applications emerging in recent years. It is now considered as a hydrophobic and the soft analogue of the well-known hydrogen bond.[1]The distinctive features of halogen bonding are the high level of directionality and the flexibility of using different back bones and several halogen atoms even in different oxidation States which can lead to diverse solubility profiles and binding strengths. [2, 3] There are only very few studies dealing with asymmetric catalysis using this, and in our opinion clear cut proof of the principal case for the realization of this concept scenes still to be missing.[4] Though there are a few reports where enantioselectivity has been induced in moderately or better levels, these however cannot be taken as an exemplification of exclusive halogen bonding interactions. Given all the major breakthroughs in asymmetric bonding catalysis, our aim is to synthesize an efficient chiral halogen bond catalyst which would possibly eradicate the before mentioned challenges in this area to an extent.

References

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