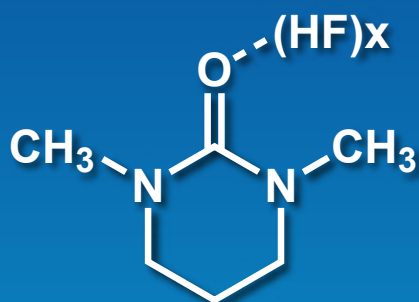


Stable Hydrogen Fluoride (HF) Complex for Nucleophilic Fluorination DMPU-HF



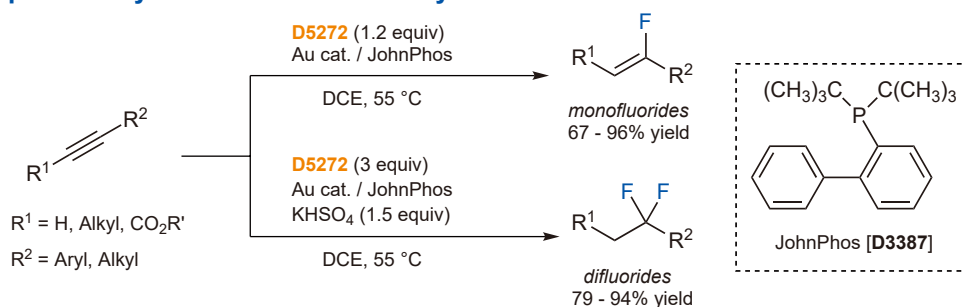
[D5272]

Advantages

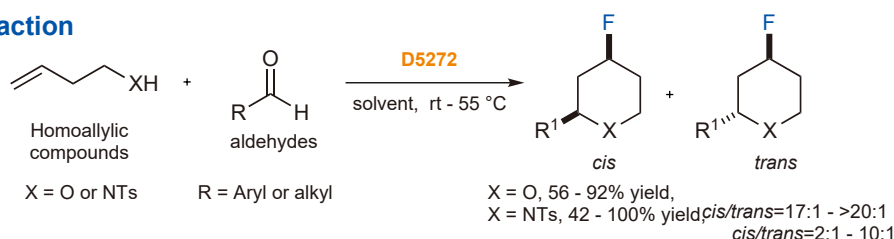
- Alternative Liquid for HF Gas
- Bench-top Stable
- Less Interference with Metal Catalysts

Applications

Gold Complex Catalyzed Fluorination of Alkynes

References O. E. Okoromoba, J. Han, G. B. Hammond, B. Xu, *J. Am. Chem. Soc.* **2014**, 136, 14381.

Fluoro-Prins Reaction

References O. E. Okoromoba, G. B. Hammond, B. Xu, *Org. Lett.*, **2015**, 17, 3975.

Fluorination of Aziridines

References O. E. Okoromoba, Z. Li, N. Robertson, M. S. Mashuta, U. R. Couto, C. F. Tormena, B. Xu, G. B. Hammond, *Chem. Commun.* **2016**, 13353.

DMPU-HF Reagent (HF 65%)

1g / 5g [D5272]

Related Products

JohnPhos

1g / 5g [D3387]

Triethylamine Trihydrofluoride

10g [T2022]

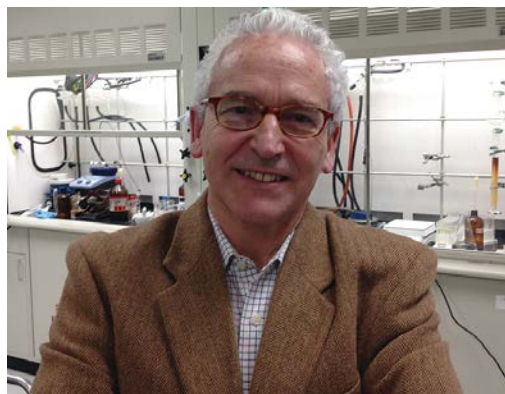


Stable Hydrogen Fluoride (HF) Complex for Nucleophilic Fluorination: DMPU-HF

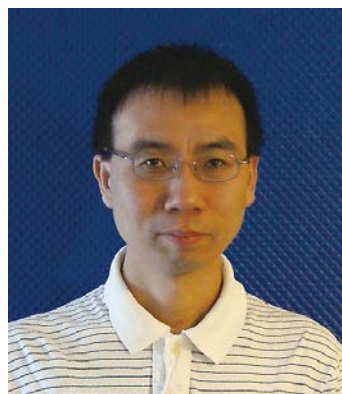
Introduction of the Researcher

The Hammond-Xu Research Group

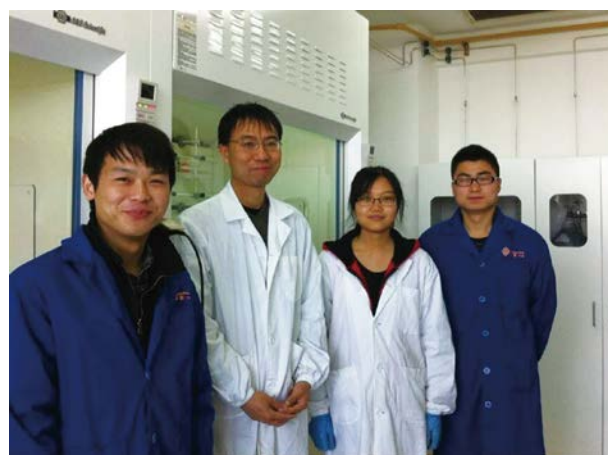
Fluorine chemistry, Green chemistry, Gold catalysis and Medicinal chemistry



Professor **Gerald B. Hammond**, Ph. D.
University of Louisville, USA



Professor **Bo Xu**, Ph. D.
Donghua University, China



Research Description

Nucleophilic Fluorination:

The selective substitution of hydrogen by fluorine constitutes a key strategy in drug discovery. Despite its importance in medicinal chemistry and in agrochemicals, the chemical space of fluorine is limited to mostly aromatic fluorine containing building blocks. Fluoroaliphatic or fluoroheterocycles are prepared on a case-by-case basis using boutique-type reactions that may employ either expensive, corrosive, and toxic fluorinated reagents, or in other cases fluorinated reagents that can only be used at low temperatures and inert atmospheres due to their limited thermal- and air/water stability, whereas yet in other applications, fluorinated reagents pose environmental problems.

Because most, if not all, fluorinating reagents are made from hydrogen fluoride (HF), an HF-based fluorinating reagent would be an ideal reagent in terms of cost and atom economy, but HF itself is a hazardous gas at room temperature and is very difficult to handle without special equipment. Recently, Hammond-Xu research group developed a new HF-based reagent—DMPU-HF (DMPU = *N,N'*-Dimethylpropyleneurea), and demonstrated that it was a stable and efficient nucleophilic fluorination reagent in the gold-catalyzed hydrofluorination of alkynes, in the fluoro-Prins cyclization, and in the synthesis of β -fluoroamines from aziridines. DMPU-HF is compatible with many metal catalysts, and is highly reactive, yet a selective reagent, in acid-catalyzed reactions.

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