



CHEMISTRY &
BIOCHEMISTRY

DATE 10/11/2024 | TIME 10:30am | LOCATION ADMIN 364

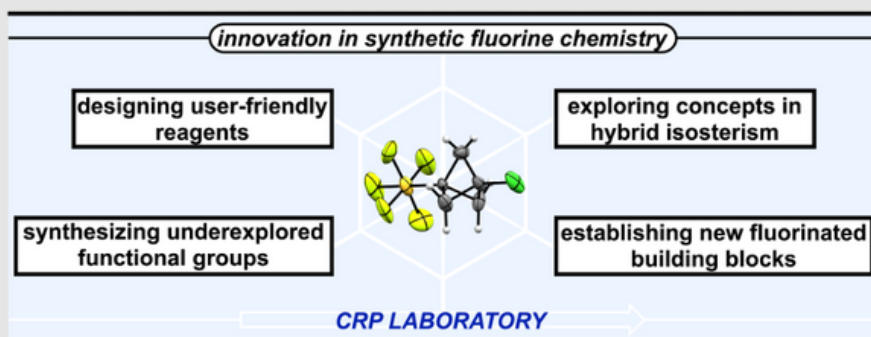
CHEMISTRY & BIOCHEMISTRY SEMINAR SERIES: Strain-Release Pentafluorosulfanylation: Strange Molecules Doing Stranger Things

Abstract:

This presentation details recent progress in our laboratory toward the synthesis and evaluation of historically underrepresented fluorinated functional groups that have been made more accessible using the TCICA/KF approach to oxidative fluorination. A major theme will be our recent merging of SF₅ radical chemistry with strain-release functionalization of [1.1.1]propellane and [1.1.0]bicyclobutanes. Structural consequences of making these SF₅-based "hybrid isosteres" and preliminary mechanistic insight will be discussed. Aside from being a topic of fundamental interest, we believe this work affords an unusual and subtle type of flexibility in molecular design that could prove useful in increasing availability of building blocks containing C(sp³)-SF₅ bonds to medicinal chemists, agrochemists, and in the materials community.



Cody Ross Pitts
Assistant Professor
Department of Chemistry
University of California, Davis



About the Speaker:

Prof. Cody Ross Pitts received a B.S. in Chemistry with minors in Physics and Musical Theatre from Monmouth University in 2010, having conducted undergraduate research in organic chemistry with Prof. Massimiliano Lamberto. In 2017, he received his Ph.D. in Chemistry from Johns Hopkins University under the tutelage of Prof. Thomas Lectka; his Ph.D. research was centered on synthetic method development and physical organic chemistry, including development of radical fluorination chemistry and the first spectroscopic observation of a stable fluoronium ion in solution. From 2017–2019, Cody conducted research on inorganic fluorine chemistry with Prof. Antonio Togni at ETH Zürich under an ETH Postdoctoral Fellowship. From 2019–2021, Cody conducted research in total synthesis with Prof. Phil S. Baran at The Scripps Research Institute under an NIH Postdoctoral Fellowship. In July 2021, Cody began his independent career at the University of California, Davis, and has established a research program that provides training in reagent design, method development, mechanistic studies, and organic synthesis.

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