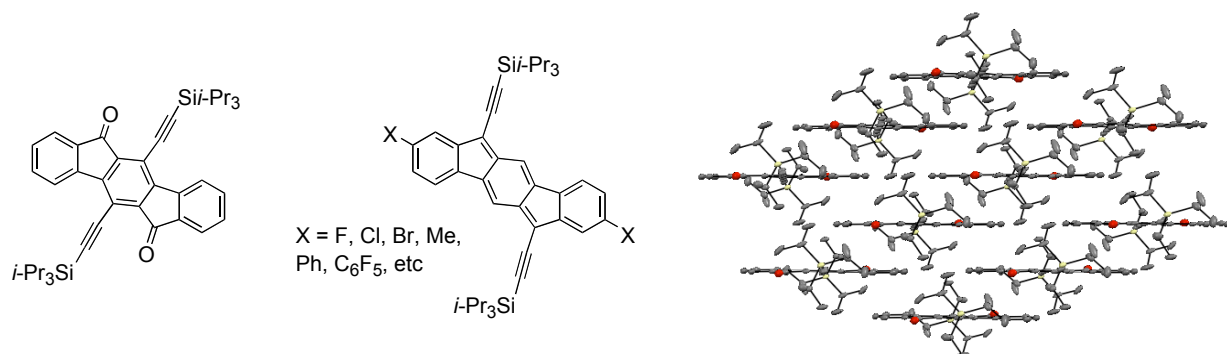


Indenofluorenes – A New Class of Electron-Accepting Materials



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This talk will present our synthetic, structural and materials studies of a new class of electron-accepting molecules based on the indenofluorene (IF) skeleton. The initial preparative route involved transannular cyclization of octadehydrodibenzo[12]annulenes to afford the pentacyclic ring system [1]. Subsequent transformations generated the first stable examples of the fully conjugated, 20 pi-electron, formally anti-aromatic compounds [2]. Optimization of intermediate IF-6,12-dione synthesis via a simple three-step process now permits access to IF derivatives in multigram quantities [3]. Work on 6,12-diarylIFs demonstrated that single crystals of the pentafluorophenyl derivative could serve as an active layer in organic field effect transistors (OFETs) that exhibit ambipolar behavior using Au source/drain contacts [4]. Current studies are focused on replacing the benzene groups with thiophene units [5]. This presentation will focus on development of project as well as include the latest results from our lab.



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[3] Chase, Fix, Rose, Weber, Nobusue, Stockwell, Zakharov, Lonergan & Haley, *Angew. Chem. Int. Ed.* **2011**, *50*, 11103-11106.
[4] Chase, Fix, Kang, Rose, Weber, Zhong, Zakharov, Lonergan, Nuckolls & Haley, *J. Am. Chem. Soc.* **2012**, *134*, 10349-10352.
[5] (a) Young, Chase, Marshall, Vonnegut, Zakharov & Haley, *Chem. Sci.* **2014**, *5*, 1008-1014;
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