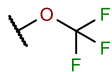
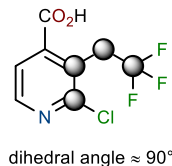
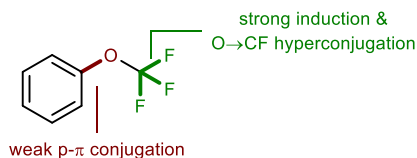


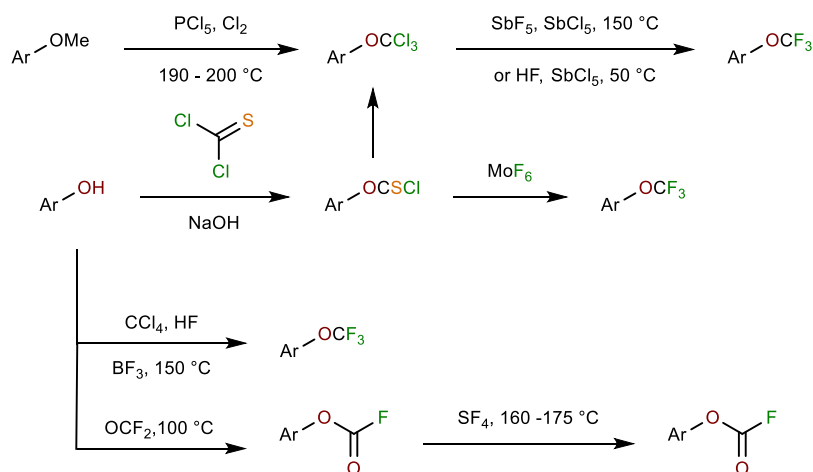
Special Properties of Trifluoromethoxy Group & Trifluoromethoxylated Aromatics



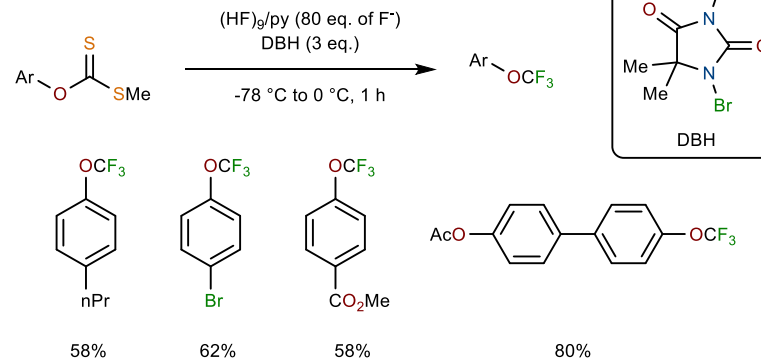
stable & high lipophilicity: $\pi = 1.04$
(OCH_3 : $\pi = -0.20$, CF_3 : $\pi = 0.88$)



Selected Traditional Methods of Trifluoromethoxylation



Oxidative Desulfurization-Fluorination

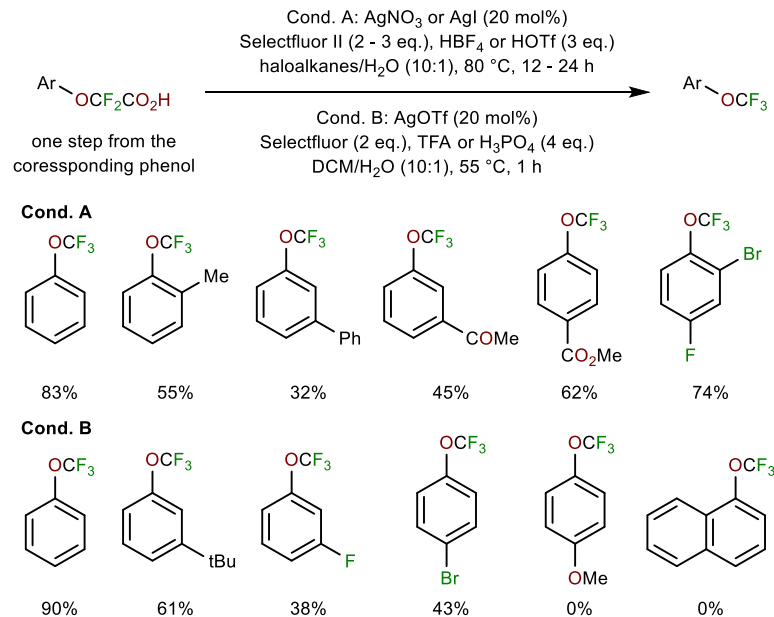


Kuroboshi, M.; Suzuki, K.; Hiyama, T. *Tetrahedron Lett.* **1992**, 33, 4173.

[https://doi.org/10.1016/S0040-4039\(00\)74681-8](https://doi.org/10.1016/S0040-4039(00)74681-8)

Kiyoshi, K.; Yoichiro, T.; Kazundo, S.; Manabu, K.; Tamejiro, H. *Bull. Chem. Soc. Jpn.* **2000**, 73, 471. <https://doi.org/10.1246/bcsj.73.471>

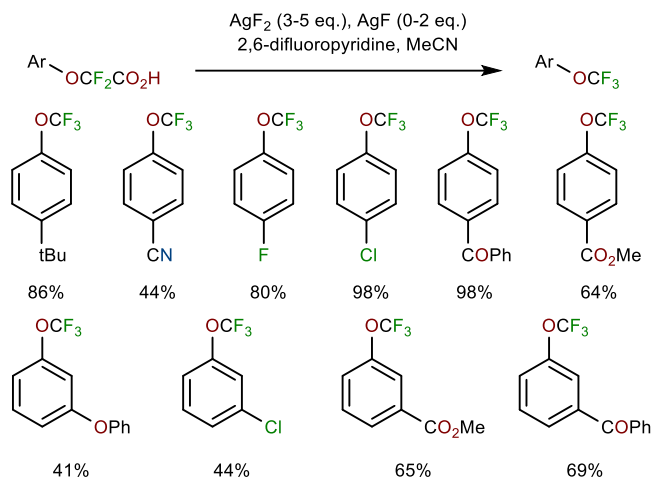
Decarboxylative Fluorination



Zhou, M.; Ni, C.; He, Z.; Hu, J. *Org. Lett.* **2016**, *18*, 3754.

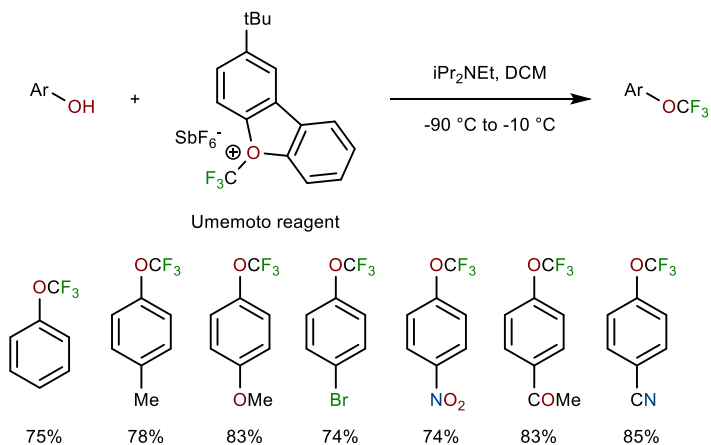
<https://doi.org/10.1021/acs.orglett.6b01779>

Krishnamoorthy, S.; Schnell, S. D.; Dang, H.; Fu, F.; Prakash, G. K. S. *J. Fluorine Chem.* **2017**, *203*, 130. <https://doi.org/10.1016/j.jfluchem.2017.07.017>

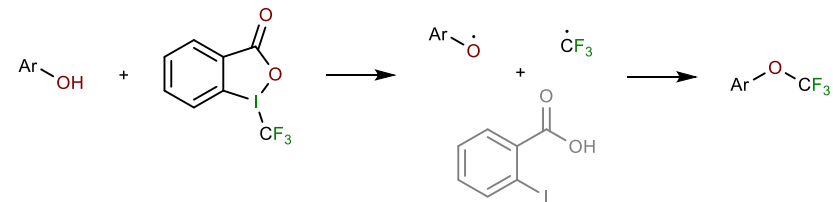
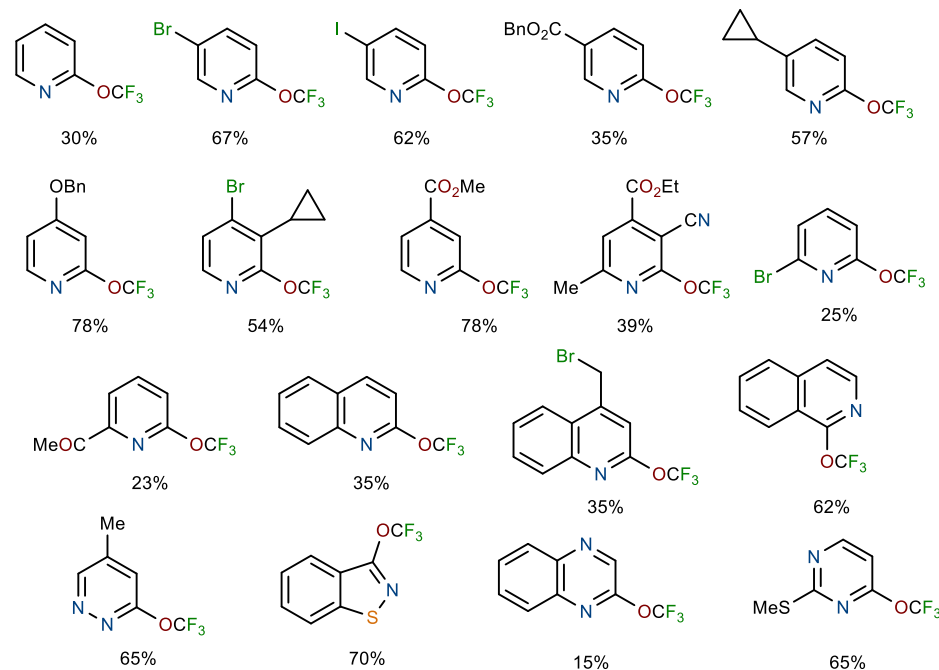
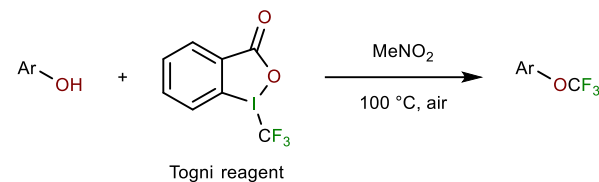


Zhang, Q.-W.; Brusoe, A. T.; Mascitti, V.; Hesp, K. D.; Blakemore, D. C.; Kohrt, J. T.; Hartwig, J. F. *Angew. Chem. Int. Ed.* **2016**, *55*, 9758. <https://doi.org/10.1002/anie.201604793>

O-Trifluoromethylation

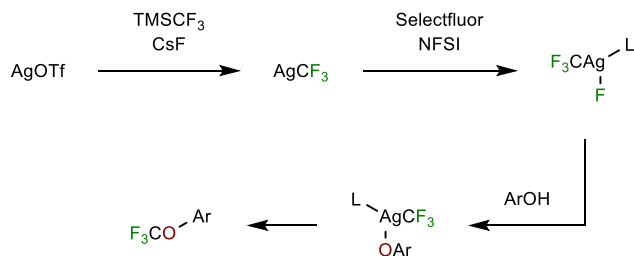
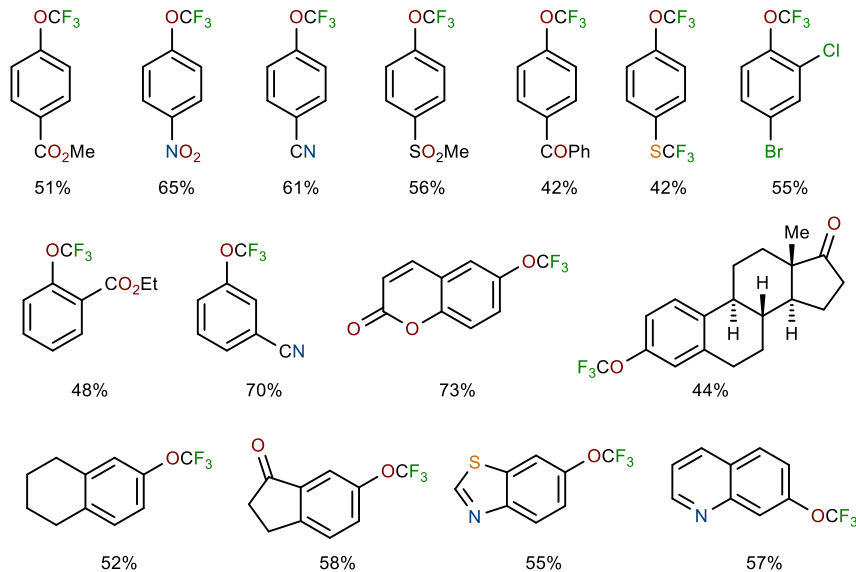
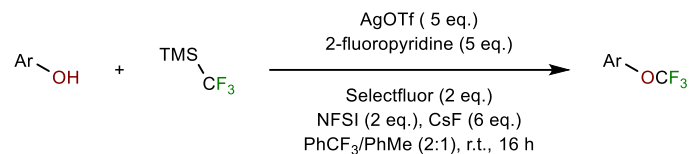


Umemoto, T.; Adachi, K.; Ishihara, S. *J. Org. Chem.* **2007**, *72*, 6905. <https://doi.org/10.1021/jo070896r>

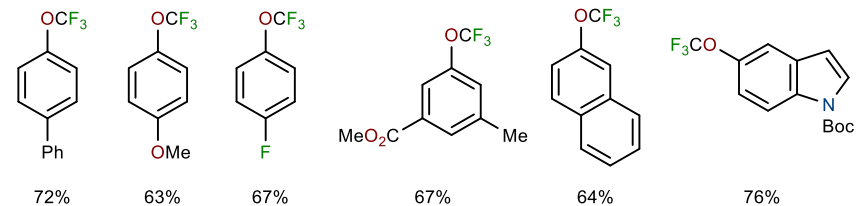
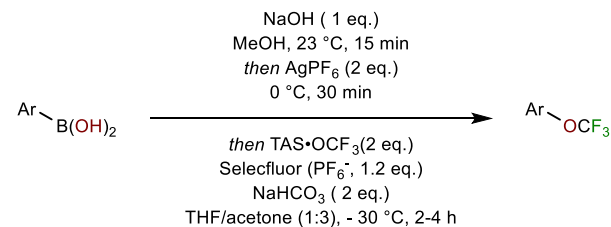
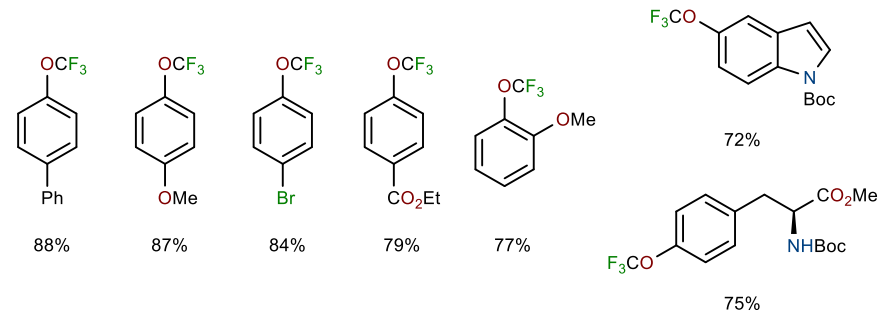
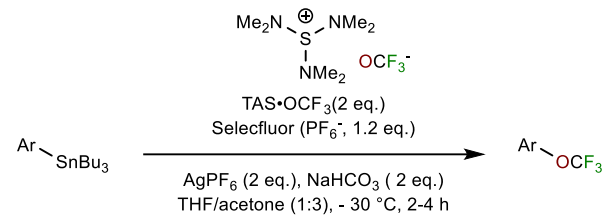


Liang, A.; Han, S.; Liu, Z.; Wang, L.; Li, J.; Zou, D.; Wu, Y.; Wu, Y. *Chem. Eur. J.* **2016**, *22*, 5102. <https://doi.org/10.1002/chem.201505181>

O-Trifluoromethylation (continued)



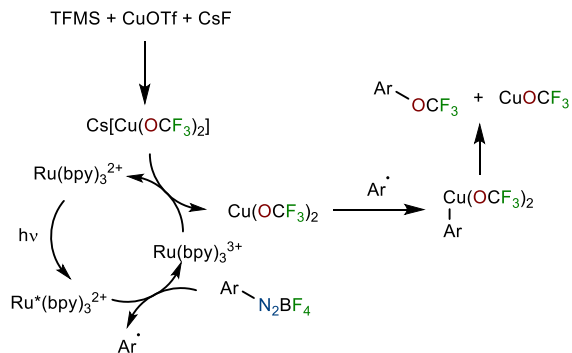
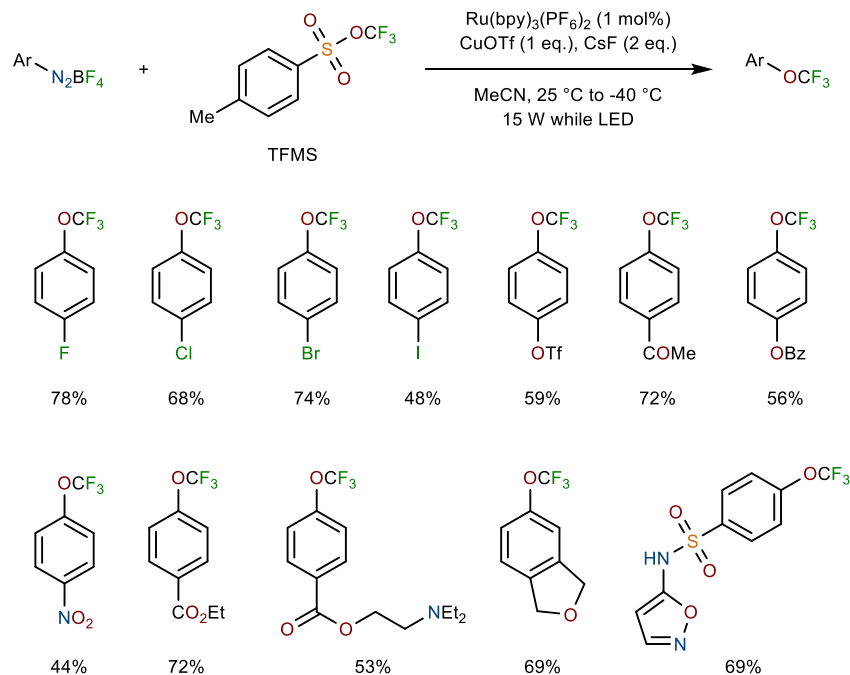
C-OCF₃ Coupling



Liu, J.-B.; Chen, C.; Chu, L.; Chen, Z.-H.; Xu, X.-H.; Qing, F.-L. *Angew. Chem. Int. Ed.* **2015**, *54*, 11839. <https://doi.org/10.1002/anie.201506329>

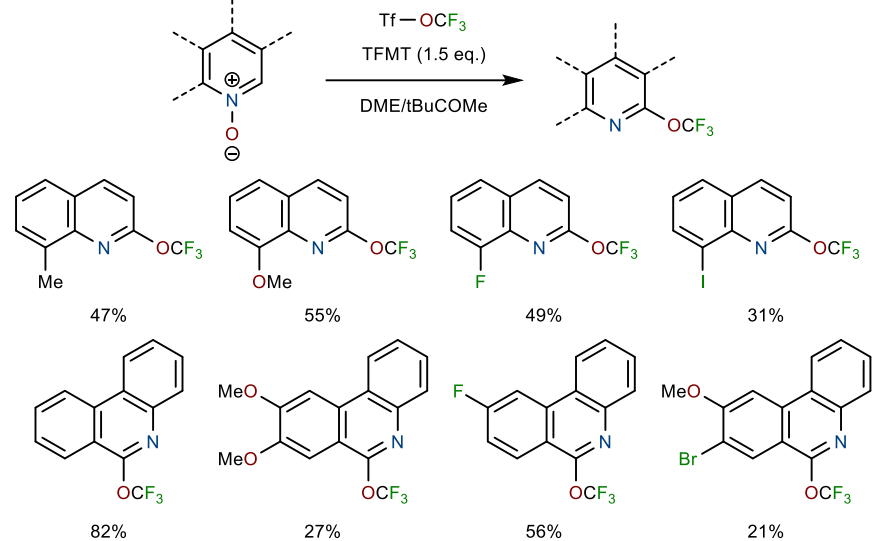
Huang, C.; Liang, T.; Harada, S.; Lee, E.; Ritter, T. *J. Am. Chem. Soc.* **2011**, *133*, 13308. <https://doi.org/10.1021/ja204861a>

C-OCF₃ Coupling (continued)

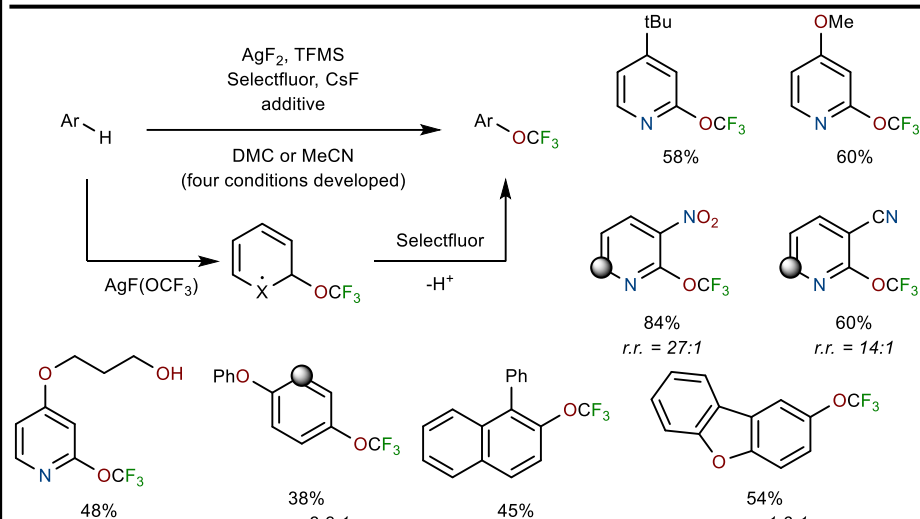


Yang, S.; Chen, M.; Tang, P. *Angew. Chem. Int. Ed.* **2019**, *58*, 7840.
<https://doi.org/10.1002/anie.201901447>

C-H Trifluoromethylation

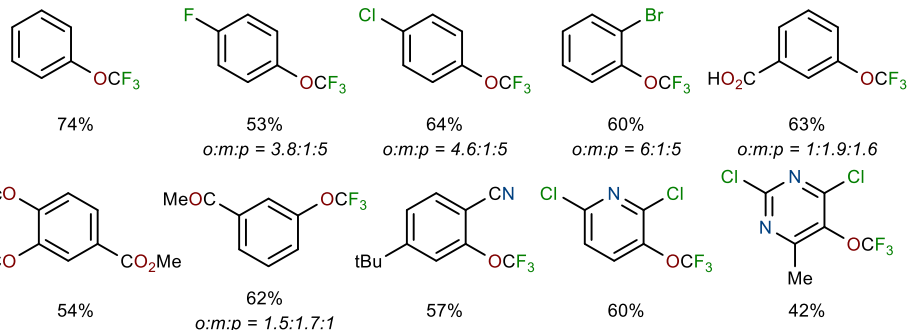
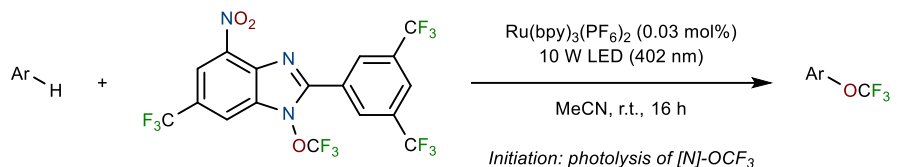


Zhang, Q.-W.; Hartwig, J. F. *Chem. Commun.* **2018**, *54*, 10124.
<https://doi.org/10.1039/C8CC05084H>



Deng, Z.; Zhao, M.; Wang, F.; Tang, P. *Nat. Commun.* **2020**, *11*, 2569.
<https://doi.org/10.1038/s41467-020-16451-x>

C-H Trifluoromethylation (continued)

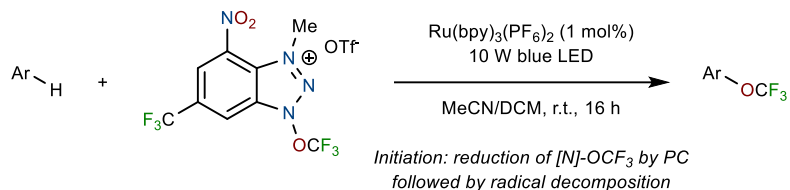


Zheng, W.; Morales-Rivera, C. A.; Lee, J. W.; Liu, P.; Ngai, M.-Y. *Angew. Chem. Int. Ed.* **2018**, *57*, 9645. <https://doi.org/10.1002/anie.201800598>

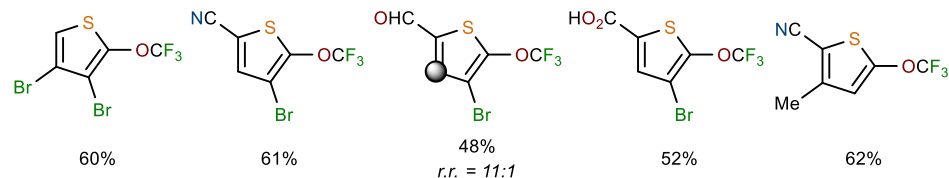
Some useful reviews:

Wang, Q.; Zhang, X.; Sorochinsky, A. E.; Butler, G.; Han, J. L.; Soloshonok, V. A. *Symmetry* **2021**, *13*, 2380. <https://doi.org/10.3390/sym13122380>

Si, Y. F.; Tang, P. P. *Chin. J. Chem.* **2023**, *41*, 2179. <https://doi.org/10.1002/cjoc.202300093>



In addition to scope of benzenes and N-heteroarenes



Zheng, W.; Lee, J. W.; Morales-Rivera, C. A.; Liu, P.; Ngai, M.-Y. *Angew. Chem. Int. Ed.* **2018**, *57*, 13795. <https://doi.org/10.1002/anie.201808495>