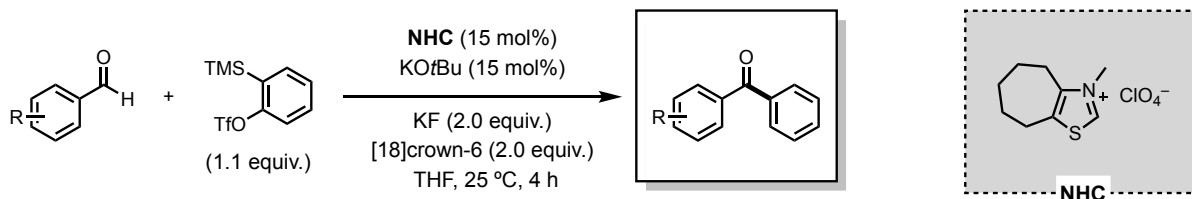
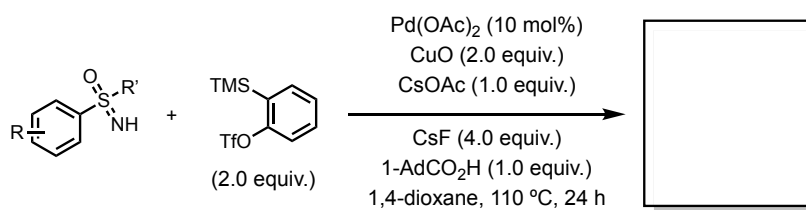


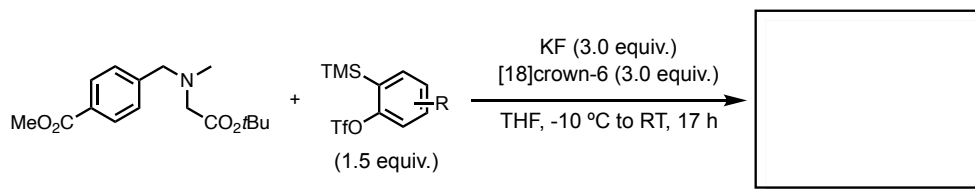
1. Propose and explain a plausible mechanism for the following transformation reported by Glorius and co-workers. (*ACIE* **2010**, *49*, 9761–9764). [★]



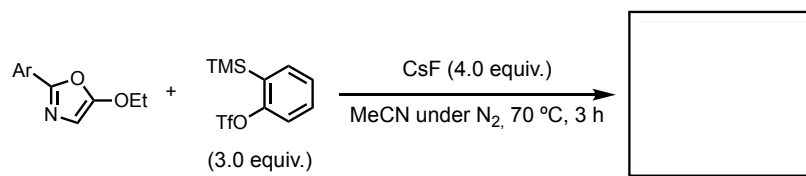
2. In 2020, Wei and co-workers reported the following Pd-catalyzed transformation (*Org. Lett.* **2020**, *22*, 7470–7474). Identifying the product and propose a plausible mechanism. [★★]



3. Identifying the product and propose a plausible mechanism for the following transformation reported by Biju and co-workers (*Chem. Commun.* **2019**, *55*, 3004–3007). [★★]



4. Propose the structure of the product formed in this transformation reported by Sing and co-workers (*J. Org. Chem.* **2022**, *87*, 7219–7228). Justify your answer with a plausible mechanism. [★★★]



5. In 2022, Arun and co-workers reported the following transformation (*J. Org. Chem.* **2021**, *23*, 6372–6376). Identifying the missing starting materials and propose a plausible mechanism. [★★]

