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Green synthesis of heterocyclic compounds and asymmetric organocatalysis

Wei Zhang
University of Massachusetts Boston, USA

This presentation highlights our recent effort on the development of pot, atom, and step economy synthesis and asymmetric catalysis to maximize reaction. New reaction sequences of one-pot and multicomponent reactions have been developed for the synthesis of diverse heterocyclic scaffolds with substitution, skeleton, and stereochemistry variations. Recyclable organocatalyst-promoted cascade reactions have been introduced for asymmetric fluorination, Michael addition, Mannich reaction, Robinson annulation and other transformations to construct drug-like molecules with multiple stereocenters. Screening of our compounds for druggable targets such bromodomains, kinases, RORt, and HIV-1 will be mentioned.

wei2.zhang@umb.edu