

Photochemistry Platform

Accelerating Drug Discovery with Light-Enabling Innovation

WuXi Research Chemistry Services's Photochemistry Platform provides cutting-edge, light-enabling solutions to advance your drug discovery programs. We improve efficiency by harnessing photochemistry to unlock novel chemical space and streamline synthesis.

Innovative Chemical Reactions

► Representative Reaction Types

C(sp²)-C(sp³) Coupling

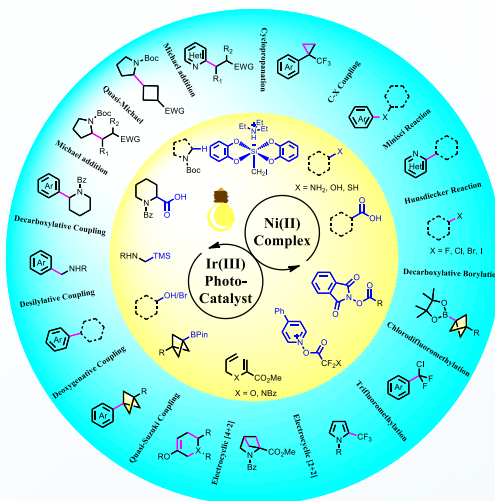
- Alkyl Halides with (Hetero)aryl Halide
- Decarboxylative coupling

C(sp³)-C(sp³) Coupling

- Decarboxylative coupling
- Deoxygenative coupling

C-X bond Coupling

- C-O coupling
- C-N coupling



Decarboxylative Functionalization

- Decarboxylation Michael addition
- Decarboxylation halogenation

Deoxygenative Functionalization

- Deoxytrifluoromethylation
- Deoxydifluoromethylation

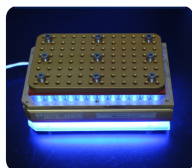
Cycloaddition

- [2+1] cycloaddition
- [2+2] cycloaddition

Over 100 types of photochemical reactions have been reported, which innovate the organic synthesis

Integrated Photochemistry Platform

Condition Optimizations



- Screen 96 conditions simultaneously
- Sophisticated condition templates for 20+ reactions

100+

Commercial and integrated reactors, lamps with multiple wavelength

Parallel Synthesis



- 5-100 mg scale synthesis
- Up to 100 reactions / day

60+

Photocatalysts, including Ru, Ir and organic dyes

Gram Scale Preparation



- Parallel synthesis of gram scale reactions, multiple reactors with different wavelengths

20,000+

Reactions completed per year

Kilogram Synthesis



- 1~10 Kg / day input

70%+

Average success rate



Contact us

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Case Studies of Innovative Application for Photochemistry

ase 1 Accelerating PROTAC* Discovery

16 Months Hit to PCC

2,000+ PROTACs* Delivered

37%+ Enabled by Photochemistry

Hit to lead

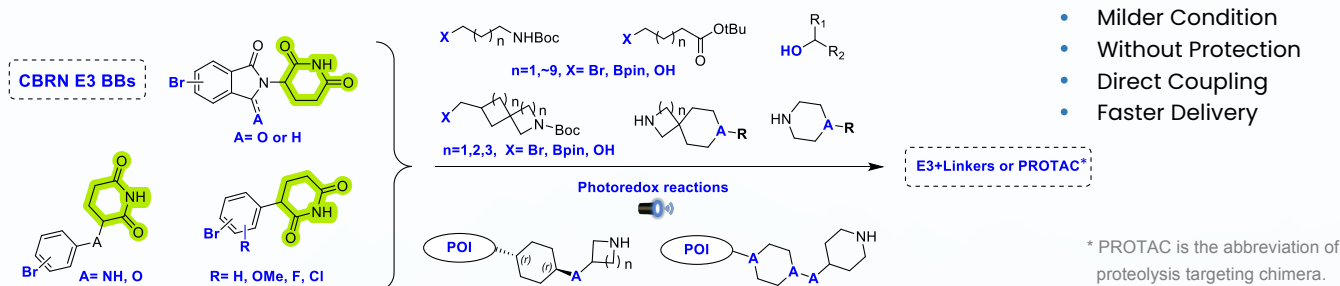
2023 Mar. ~ Apr.
5 FTEs, 2 months

Lead Optimization

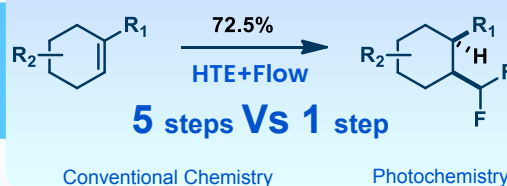
2023 May ~ Sep.
15 FTEs, 5 months

PCC Selection

2023 Oct. ~ 2024 Jun.
30 FTEs, 9 months



ase 2 100 g+ Scale-up by Flow Photochemistry

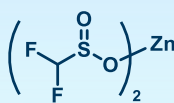


Conventional Chemistry:

- 5 steps reactions
- 1:1 cis/trans ratio

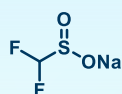
Photochemistry Round 1:

- 96 Photoreactions screened
- DFMS reagent worked, low yield



Photochemistry Round 2:

- Sodium "F" reagent optimized
- Soluble and scalable in batch



HTE to Flow:

- Seamlessly transferring experimental procedure
- Tested in flow reaction at gram scale
- Finished 100 g+ scale ups by flow in 9h
- High cis-selectivity and good yield

Condition optimization in HTE Lab

+

Condition optimization in Flow Lab

The "HTE + Flow" model in photochemistry enhances the success rate of problem solving and efficiency of production, enabling rapid program completion.