PHOTOCUBE

BATCH AND FLOW IN ONE REACTOR WITH MULTIPLE WAVELENGTHS

- Batch, flow and stop-flow reactions
- 7+1 wavelengths in one instrument

The PhotoCube™ is the first multi-wavelength instrument available for advanced photochemical applications.

This reactor enables the implementation of multi-wavelength batch and continuous flow photochemical reactions. The multicolour option ranges from UVA to red. With the opportunity to select the colour of the LEDs, the system can be fine-tuned for specific wavelengths and applications, furthermore, multiple wavelengths can be utilized at the same time.

Available wavelengths: 365, 395, 457, 500, 523, 595, 623 nm and white

Available batch reactor volumes: 4 mL and 30 mL glass vials

Available loop volumes: 5-15 mL

Available loop material of Construction: FEP or PFA

Temperature range: 20 to 80 °C

LED input power: up to 128 W/colour

Other Key features

- User defined parameters, including wavelength, light intensity and speed of stirring
- Temperature feedback
- External temperature control option: external thermoregulation can be attached to the system.
- Built-in safety features: to prevent the user from exposure to high-intensity light, the LEDs automatically switch off when the photochemical reactor chamber is opened during operation.

Accessories

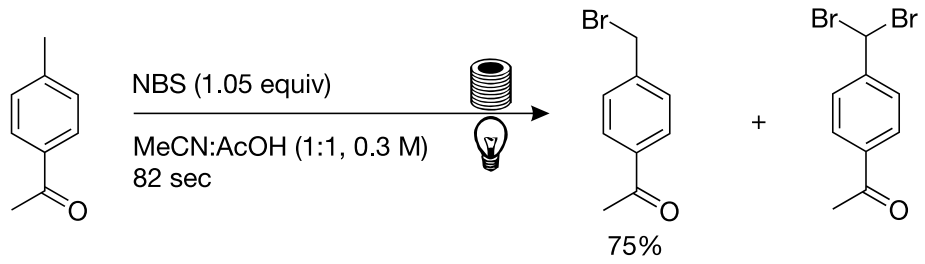
- HPLC Pump (THS-09037H): For customers who wish to integrate the ThalesNano HPLC pump with the PhotoCube™ or even other flow systems. The flow rate range is: 0.01-10 mL/min. Comes with full 1-year warranty.

- Loops
  - 15 mL
  - 10 mL
  - 8 mL
  - 5 mL

CHEMISTRY EXAMPLES

FROM SIMPLE BROMINATION...

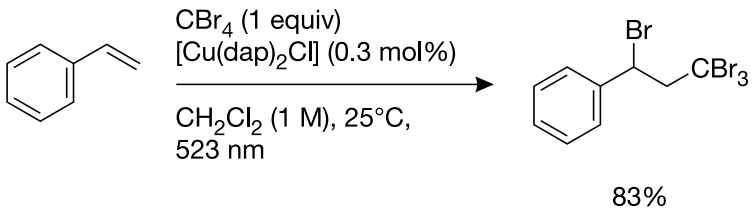
Benzylic bromination



- Throughput of 34 g/h.
- Isolated yield: 75% (mono-brominated)

OR ATOM TRANSFER RADICAL ADDITION...

Cu-catalyzed atom transfer radical addition



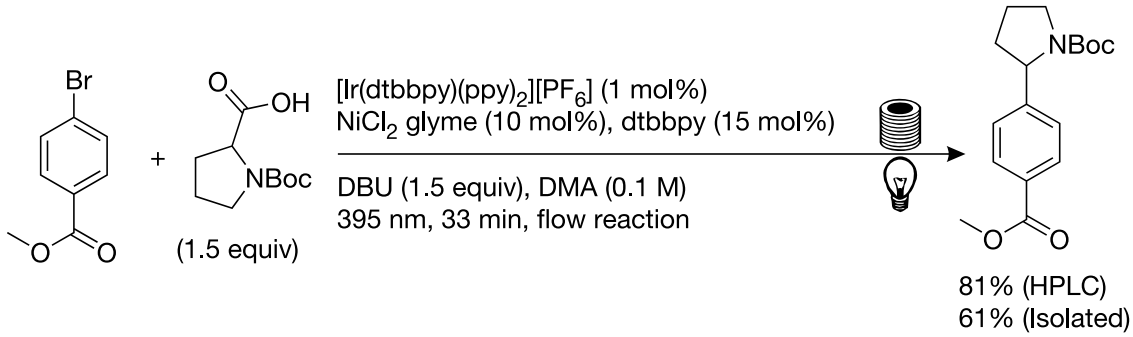
83%

- Reaction time significantly reduced: 2 h vs. 20 h in batch[1]
- Isolated yield: 83%

[1]Reiser et al. Chem. Eur. J. 2012, 18, 7336

TO C-C COUPLINGS...

Dual catalytic decarboxylative coupling

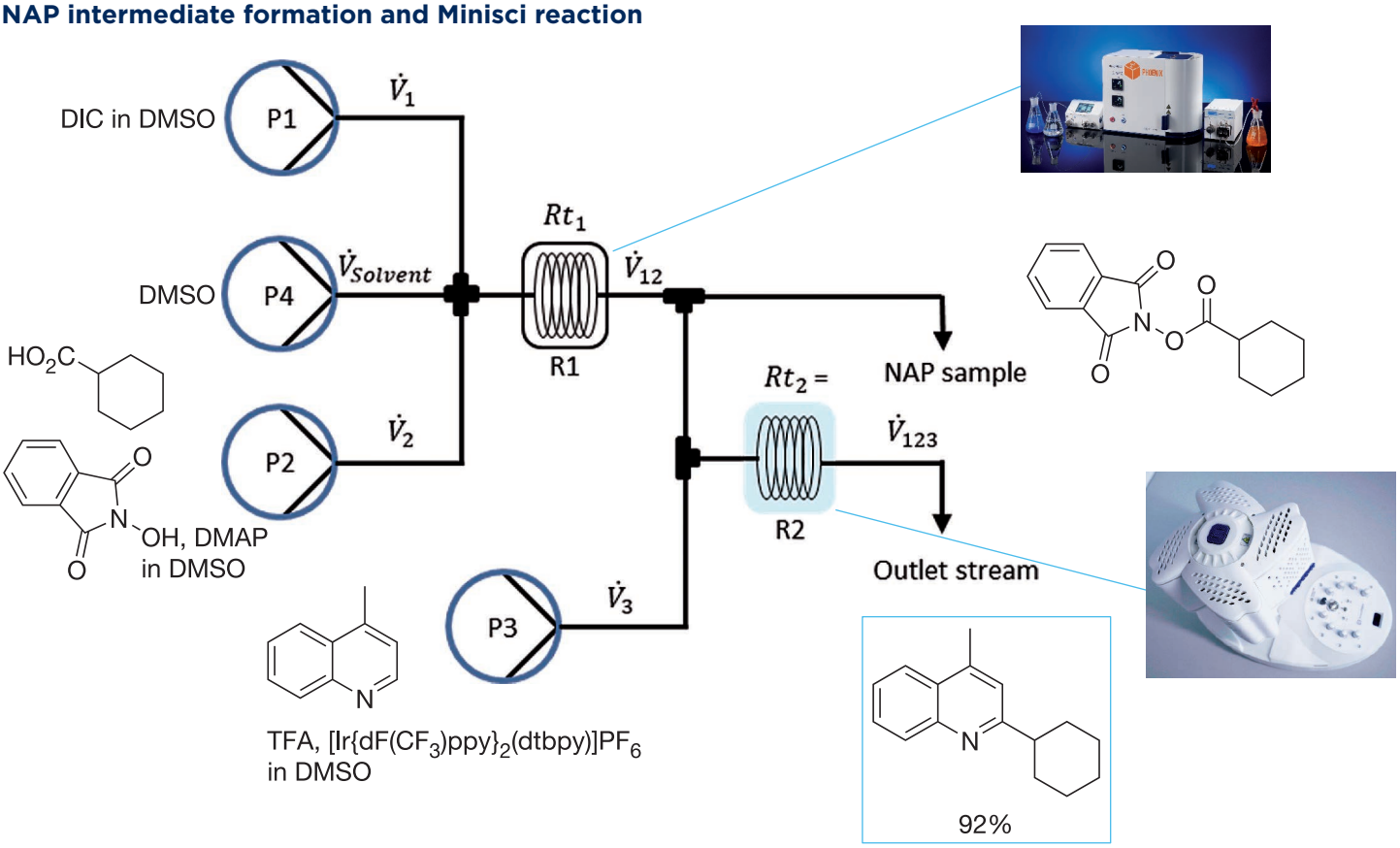


- Reaction time significantly reduced: ~30 min vs. up to days in batch[2]
- HPLC yield: 81%

[2]Alcazar et al. Bioorg. Med. Chem. 2017, 25, 6190

REACHING UNLIMITED POSSIBILITIES IN COMBINATION!

NAP intermediate formation and Minisci reaction



- NAP intermediate formation was achieved in the Phoenix Flow Reactor™. The redox active ester was then directly used in the photocatalytic Minisci reaction in the PhotoCube™.
- Throughtput of 1.4 g/h with an isolated yield of 92%

THALESNano

AND SO MUCH MORE TO DISCOVER...

For more information, please visit
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