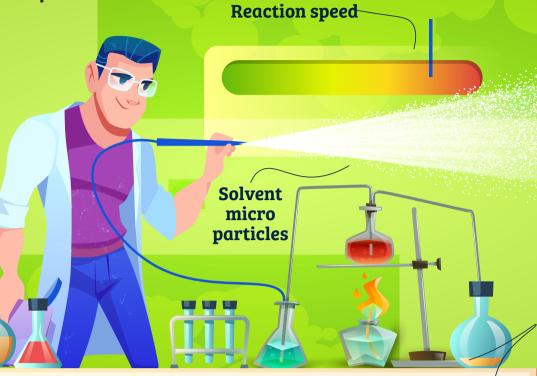
## Sp<mark>eeding Up Reactions by</mark> Spraying and Recycling Solvents

Spraying solution as microdroplets can accelerate reactions by factors of 10<sup>1</sup> to 10<sup>5</sup> compared to reactions with bulk liquid

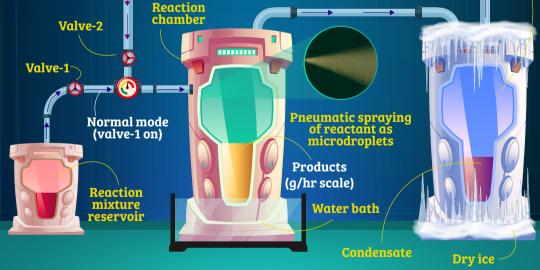


But the short lifetimes of microdroplets limit product yield and reaction scalability, preventing practical use

Can a microdroplet reaction system be designed to overcome these issues?

Microdroplet reaction system including the solvent recycling process

> Solvent recycling mode (valve-2 on)



Including a solvent recycling process in microdroplet reaction systems reduces wastage and increases droplet lifetime, thereby significantly enhancing yield and reaction speed



High-yield gram-scale organic synthesis using accelerated microdroplet/thin film reactions with solvent recycling



Products

Condensation chamber

Cooks et al. (2020) | DOI: 10.1039/C9SC06265C