Coupling of Alternating Current to Transition â€“ Metal Catalysis

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Overview

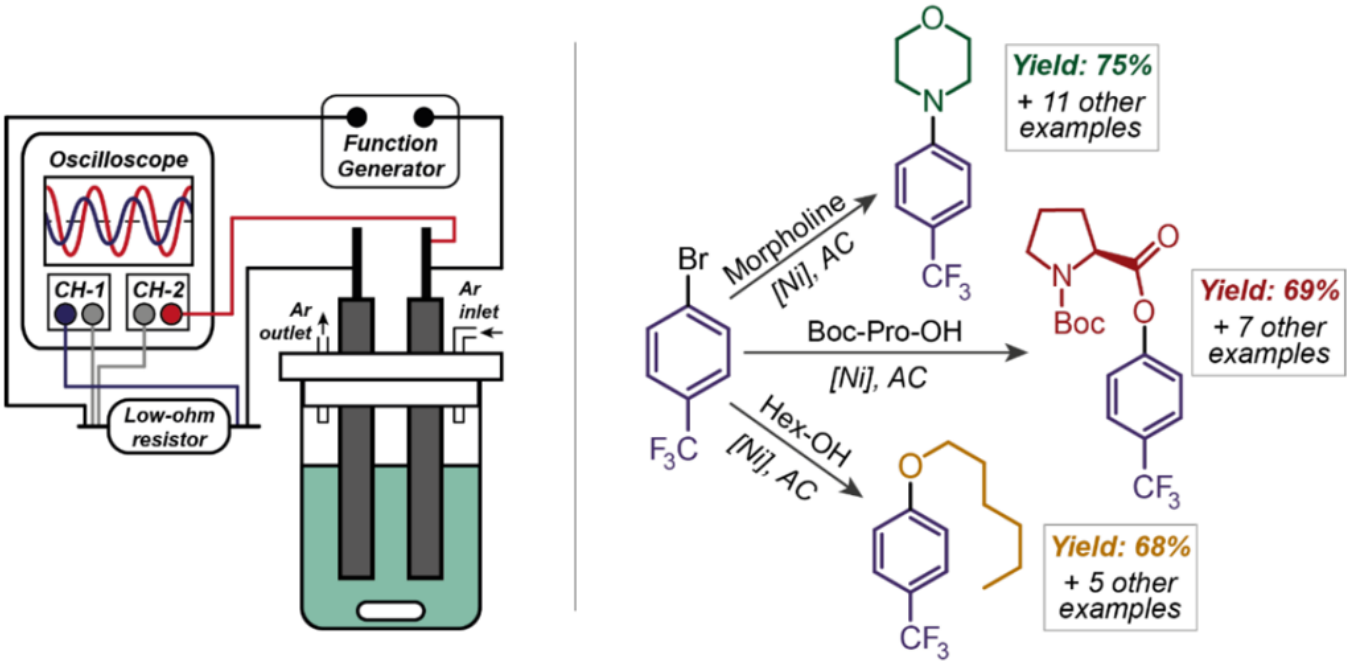
A method for coupling alternating current (AC) electrolysis to transition-metal catalysis, enabling enhanced catalytic reactions with higher yields and selectivity.Â

Applications

- Catalytic systems where one or several steps can be accelerated by electrochemical oxidation/reduction
- Transition-metal catalytic reactions

Differentiation

- Expanded Potentials beyond the solvent electrochemical window
- Adjustable Selectivity
- Innovative Stirring-free Reactor Design
- Efficient Redox Reactions on the same electrode
- Prevents electrode foulingÂ



Demonstrated setup and AC-enabled Ni-catalyzed cross-coupling reactionsÂ

Development Stage

The method is at TRL of 4. It has been used for a variety of catalysis processes, producing different amines, aryl bromides, carboxylic acids and alcohols.Â

References

Bortnikov, E.O. & Semenov J. Org. Chem. 2021 [1]

Patent Status

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