

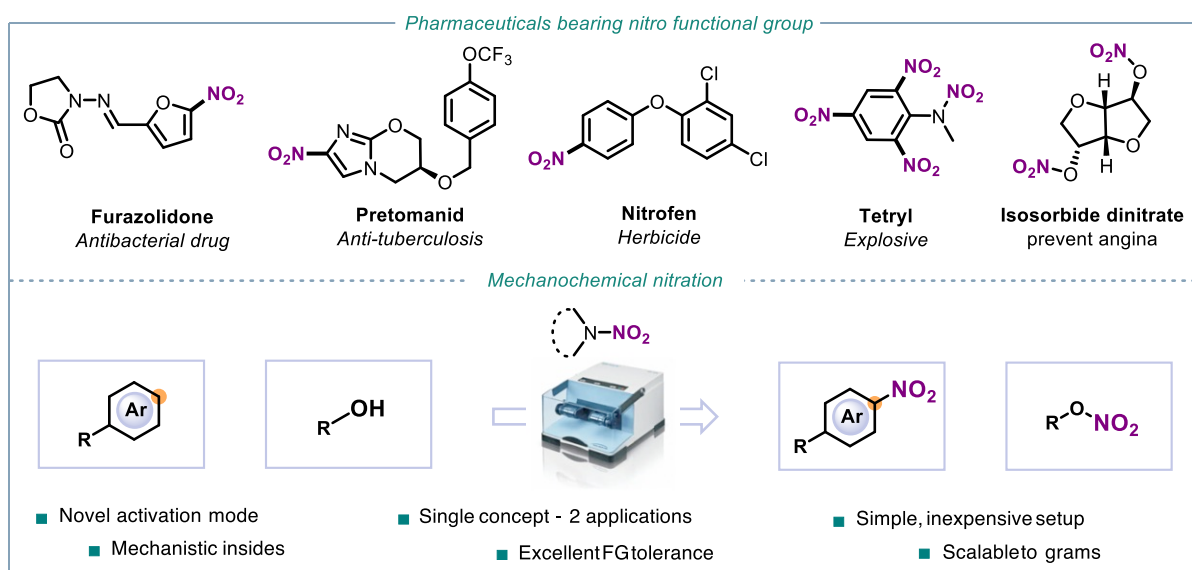
Electrophilic Nitration of Alcohols and Arenes using an Organic Nitrating Reagent under Ball Milling Conditions

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Driven by the search for greener and more sustainable synthetic methodologies, mechanochemistry has received increasing interest in the past years, also being acknowledged as one of the top ten emerging sustainable chemistry technologies by IUPAC in 2019.^[1]

Given our group's long-standing interest in the field of nitration chemistry, we recently implemented ball milling (a form of impact-generating mechanochemistry) into our synthetic approaches toward the nitration of various molecular structures. In 2019, we introduced an easily accessible and recyclable organic nitrating reagent for electrophilic nitration, which tolerates various functional groups and allows for the circumvention of harsh reaction conditions involving mineral acids.^[2] Our initial experimental results showed the successful nitration of various alcohols and aromatic molecules, while using minimal amounts of solvent (2 μ L/mg of reagent), thus minimizing environmental and health hazards. Further comprehensive results and mechanistic insights of into this intriguing process will be provided.^[3]



^[1] F. Gomollón-Bel, *Chem., Int.* **2019**, *41*, 12.

^[2] R. Calvo, K. Zhang, A. Passera, D. Katayev, *Nat. Commun.* **2019**, *10*, 3410.

^[3] V. Valsamidou, S. Patra, B. Kadriu, M. G. Metzger, D. Katayev, **2025**, *in preparation*.