



CMCC Mechanochemistry Discussions

Online Seminar Series

Synthetic Mechanochemistry: Saving on Solvent, and More!

Livestreaming at
10:00 AM (CT)

THURS., April 20, 2023

on the CMCC YouTube Channel:

<https://www.youtube.com/channel/UC7eCYPKbGTKpgO7W2bNABxg>



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ABSTRACT:

A major concern for the development of a sustainable chemical synthesis is the use of organic solvents. These solvents are very often toxic and volatile, the halogenated ones creating major damages to the environment. The approach that we have chosen and developed over the years is to optimize reactions in the absence of solvent, by mechanochemistry, ball-milling and reactive extrusion, with applications in organic and organometallic synthesis.¹ In addition to implementing a more sustainable synthetic approach, mechanochemistry also accelerates reactions, simplifies procedures and in some cases enables the preparation of original molecules which could not be prepared in solution. Examples from our work along these lines (metal complexes, nucleosides, peptides, APIs. . .) will be presented.²

References :

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2. a. Beillard, A.; Métro, T.-X.; Bantreil, X.; Martinez, J.; Lamaty, F. *Chem. Sci.* **2017**, *8*, 1086. b. Beillard, A.; Quintin, F.; Gatignol, J.; Retailleau, P.; Renaud, J.-L.; Gaillard, S.; Métro, T.-X.; Lamaty, F.; Bantreil X. *Dalton Trans.* **2020**, *49*, 12592. c. Ryzhakov, D.; Beillard, A.; Le Bideau, F.; Ahmed Atto Al-Shuaeeb, R.; Alami, M.; Bantreil, X.; Gauthier, A.; Bonnemoy, A.; Lamaty, F.; Messaoudi S. *Eur. J. Org. Chem.* **2022**, e202101499. d. Appy, L.; Depaix, A.; Bantreil, X.; Lamaty, F.; Peyrottes, S.; Roy, B. *Chem. Eur. J.* **2019**, *25*, 2477. e. Yeboue, Y.; Jean, M.; Subra, G.; Martinez, J.; Lamaty, F.; Métro, T.-X. *Org. Lett.* **2021**, *23*, 631. f. Lavayssiere, M.; Lamaty, F. *Chem. Commun.* **2023**, *59*, 3439.



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