



CMCC *Mechanochemistry Discussions*

Online Seminar Series

Main Group Mechanochemistry: Challenges and Opportunities for a Sustainable Society

Livestreaming at
10:00 AM (CT)

THURS., June 17, 2021

on the CMCC YouTube Channel:

[Dr. Felipe García Seminar](#)

ABSTRACT:

Traditionally, solution-based processes have dominated laboratory set-ups and industrial manufacturing protocols. However, the past decade has seen the renaissance of solid-state synthetic routes, driven by the need for more sustainable chemical processes. Within this context, mechanochemistry (i.e., chemical transformations initiated or sustained by mechanical force) has rapidly evolved from being a laboratory curiosity to a widely applicable synthetic technique that not only enables greener chemical transformations but offers exciting opportunities for the synthesis and screening of molecules and materials.

This seminar will focus on our recent developments in reactive mechanochemistry of main group compounds and materials. The novel application of mechanochemistry to the synthesis of phosphorus-nitrogen frameworks – from orthogonal synthesis to “unattainable” molecules – will be discussed, followed by their implementation in the rational design of high-order organic-inorganic hybrid multicomponent cocrystals. This will be followed by a discussion on the challenges facing the broader adoption of mechanochemistry in industry, with a focus on the upscaled synthesis of metal complexes and perovskite materials.



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