



CMCC *Mechanochemistry Discussions*

Online Seminar Series

A Mechanochemical Process: Do we always know what we do not know?

Livestreaming at
10:00 AM (CT)

THURS., December 16, 2021

on the CMCC YouTube Channel:

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



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ABSTRACT:

There is enormous industrial and academic interest in the use of mechanochemical methods. Various transformations have been documented that range from polymorphic transitions and amorphisation to the formation of salts, co-crystals, hydrates, as well as new chemical compounds, including, in particular, MOFs, or peptides.

Despite the widespread interest in the use of mechanochemistry during already a century, still much remains unclear about the mechanisms of mechanochemical processes. The already documented transformations are not always reproducible, and are difficult to control, optimise, and scale up.

One of the main problems of mechanochemistry is that we do not often know that we do not know something important not only about the conditions, but also about the mechanisms of the transformation. In the present contribution, I try to review the state of the art of research in this field, focusing on which parameters need to be defined and controlled when studying a mechanochemical transformation. I shall also discuss challenges and advantages of various ex situ and in situ experimental approaches to studying mechanochemical transformations.



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