



# CMCC Mechanochemistry Discussions

Online Seminar Series

## ***Looking into Reaction Mechanisms in Ball Milling Using $^{17}\text{O}$ NMR. . . and More***

**Livestreaming at  
10:00 AM (CT)**

**THURSDAY, June 15, 2023**

on the CMCC YouTube Channel:

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



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### **ABSTRACT:**

While the use of ball-milling is drawing increasing attention for the synthesis of molecules and materials, one of the main goals of the mechanochemistry community today is to gain deeper knowledge into the actual reaction mechanisms occurring inside the milling jars. This explains why much effort is being put into (i) the design of chemical systems allowing to better understand the reactions taking place, (ii) the development of *operando* analytical methods (e.g. pXRD, Raman spectroscopy. . .), to follow “in real time” the evolution of a reaction medium, and (iii) the computational modeling of mechanochemical reactions.

In Montpellier, we are currently looking into developing new tools to help elucidate ball-milling reactions. This presentation will describe some of our recent works on (i) selective  $^{17}\text{O}$  isotopic labeling (notably to study the reactivity between oxide particles), and (ii) the implementation of new approaches to follow ball-milling reactions (notably through acoustic measurements).



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