



UPSCALING PHARMACEUTICALS BY MECHANOCHEMISTRY

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Although there have been efforts to reduce the environmental impact of active pharmaceutical ingredient (API) production, the use of organic solvents (responsible for 75% of energy used) is still a critical step in many processes. Solvent-free synthesis by mechanochemistry fulfills several of the 12 Green Chemistry Principles, and it is an effective and more sustainable approach to improve chemical processes and their safety and to access organic molecules or pharmaceutically relevant fragments and functionalities, including APIs.

This presentation highlights case studies illustrating the upscaling of mechanochemical syntheses, both in batch and continuous modes, aimed at the environmentally friendly preparation of pharmaceuticals. It showcases how mechanical processes offer a sustainable and cost-effective pathway, facilitating the transition to a greener industry.