Discrete element Method (DEM) simulations of Pharmaceutical Processes

TRACK Number: 7000 (Industrial Applications)

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ABSTRACT

Modeling pharmaceutical processes is a challenging and complex field. One challenge is the sheer number of different processing steps involved when creating something seemingly simple as a tablet: wet or dry granulation of difficult to process powders, drying of the granules if necessary, blending of the components, tableting, and tablet coating. Each of these processes exist in a batch or a continuous form. The number of processes increases further if different forms of drug delivery are considered.

Due to the different nature of the processes, even the DEM-focused presentations of pharmaceutical applications are often scattered across different sessions: modeling of the cohesive pharmaceutical powders and complex particle shapes might land in the session focusing on fundamentals, feeding, and blending in the "Granular Flow" session, drying and tablet coating in "Coupled Problems". This Minisymposium aims to focus the pharmaceutical applications into one session, bringing the different groups working in the pharmaceutical field together.

All applications that utilize pure or coupled DEM simulations to model pharmaceutical processes are welcome. The processes are not limited to the examples above. Priority will be given to presentations that relate the DEM results to critical quality attributes of the intermediate and final products.