



## Compaction and flow of granular materials: Impact of grains (crystals) shape

### Problem

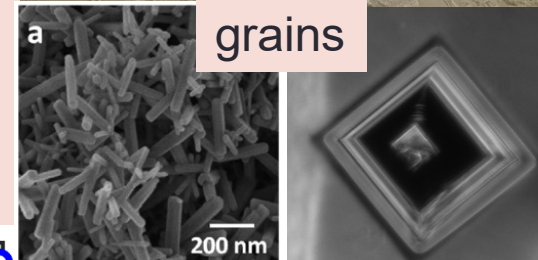
Most of the **industrial / pharmaceutical** products are processed, transported and stocked in a **granular state**. The packing density of those granular materials becomes therefore a relevant parameter for a broad range of applications in order to reduce the costs for the manipulation and transportation of such granular materials.

### The project consists of :

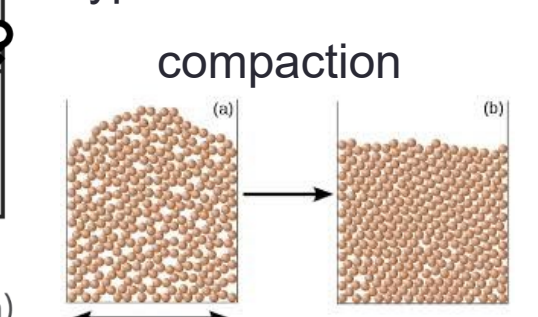
- studying the compaction and flow of **crystalline granular materials** in controlled environment. The latter are grains with rough surfaces and needle like particles that can change the contact dynamics during compaction compared to spherical grains.
- We will study the case of NaCl (with and without additives), Gypsum ( $\text{CaSO}_4$ ) used as plaster and calcium carbonate ( $\text{CaCO}_3$ ) used in various applications.
- Results of **3D printed model grains** will be compared with the results with real materials used in the project.



NaCl crystals storage place  
Before transportation



Gypsum NaCl



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