

## Bachelor-, student's or master thesis

Mechanochemical reactions are conducted by introducing mechanical energy and can enable chemical reactions without the use of solvents and additional heat. Therefore, mechanochemistry is resource and energy efficient and, thus, considered as green chemistry. The reactions are typically carried out in different grinding media mills, in which the grinding media transfer their kinetic energy to the reactants and initiate a reaction. The exact mechanistic background is subject of current research and include the overlaying phenomena of comminution, reaction kinetics, heat development and different surface effects.

### Possible work packages and methods:

- Literature research
- Experimental work to carry out mechanochemical reactions, e.g., in grinding media mills
- Purification of the reaction mixture as well as particle size and surface analysis and, if applicable, pretreatment such as comminution or classification
- Evaluation and modelling of experimental data
- Calibration und execution of DEM simulations of grinding media mills



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