

MOLECULAR MECHANOCHEMISTRY

Prof. Dr. Carsten Bolm
Institute of Organic Chemistry
RWTH Aachen University

Mechanochemistry is important for the preparation of new molecules and products on lab and industrial scale. It allows performing processes in the absence of any (undesired and potentially dangerous) solvent at low catalyst loadings with high energy efficiency. Due to those unique environmentally benign conditions in combination with the potential of obtaining products with unprecedented properties, this research area has attracted attention in various scientific communities related to material sciences, catalyst preparation, molecular recognition, crystal engineering, inorganic and organic synthesis, biomass degradation, etc.

Our current approaches within the *Distinguished Professorship Program* are directed towards:

1. Expanding the reaction range (to unprecedented transformations),
2. combining organocatalytic and metal-catalyzed reactions in domino reactions, and
3. optimizing catalyses by reaction engineering (and activation mode combinations).