80th International Scientific Conference of the University of Latvia 2022

Contribution ID: **15** Type: **Oral presentation**

MECHANOCHEMICAL PREPARATION OF CRYSTAL FORMS OF SELECTED PHARMACEUTICAL SUBSTANCES

Friday, 11 February 2022 14:30 (15 minutes)

The most common method used to control polymorphism is crystallization. An alternative to the most commonly used solvent crystallization is a mechanochemical treatment of a crystalline substance or a mixture of more than one substance. Mechanochemistry is defined as chemical synthesis induced by external mechanical energy, such as grinding two solids using a mortar-and-pestle, ball-mill, or shaker. Such reactions are classified as Green Chemistry synthesis, prioritizing high yields, mild conditions and low to no use of solvents.
To date, three polymorphic forms of 3-hydroxybenzoic acid have been described. Similarly, crystal structures of three polymorphs have been found for co-crystal formed between urea and barbituric acid.

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Session Classification: Physical Chemistry

Track Classification: Fizikālās ķīmijas sēde