

Application of amorphous classification system and glass forming ability in pre-formulation design of small organic molecules

Do you want to study about the importance of solid state in preformulation of drug candidate molecules in the company that follows the science and turns ideas into life changing medicines? Then AstraZeneca might be of interest to you!

The thesis is aimed for: Master's thesis project: 30 credits (one semester thesis)

Program area: Chemistry and Physics

Description: Student Location: AstraZeneca Gothenburg, Sweden

Supervisor: Dr. Okky Putra and Dr. Phil Corner (Solid state senior scientists, Early Product Development and Manufacture, Pharmaceutical Sciences), Prof. Lars Öhrström and Dr Françoise Noa (Department of Chemistry and Chemical Engineering, Chalmers tekniska högskola)

Opportunity

We have an exciting opportunity for a Master's student to determine amorphous classification system and glass forming ability of small organic molecules in relation to their developability in pre-formulation research. This opportunity can be expanded to include building a database and applying it to simulation and machine learning that is used for pre-formulation research.

Background

Determination of amorphous classification system and glass forming ability of small organic molecules: Amorphous classification system and glass forming ability are important parameters in pre-formulation of the drug molecules and also in informing alternative solid forms for development, i.e. co-amorphous systems. However, there is no systematic database for these parameters. The aim of this research project is to determine the value of these parameters accurately in a systematic manner for small organic molecules that are typically used in pharmaceutical development. This database can be further used for machine learning and simulation in pre-formulation research.

Responsibility

- Task and methodology
- Thermal analysis including DSC and TGA measurements
- Database building

Qualifications

- Basic understanding of organic, physical and solid state chemistry and its related techniques.

Preferred experience or requirement

- Advanced (MSc) level knowledge in solid state chemistry and its related techniques.

Application and Information

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