

# **SEMINAR ON MAGNETISM AND SUPERCONDUCTIVITY**

We kindly inform You that on **Wednesday**

**January 24<sup>th</sup> at 10:00**

there will be a **seminar in room 203, building I**

where

**dr Mateusz Chwastyk**

*(Institute of Physics PAS, Warsaw)*

will deliver a lecture on:

## **“The coexistence region in the Van der Waals fluid and the phase transitions in protein systems”**

Cellular membraneless organelles are thought to be droplets formed within the two-phase region corresponding to proteinaceous systems endowed with liquid-liquid transitions. However, their metastability requires an additional constraint - they arise in a specific region of density and temperature between the spinodal and binodal lines. In my presentation, I will discuss the well-studied van der Waals fluid as a test model to develop criteria for determining the location of the spinodal line in situations where the equation of state is not known. Our molecular dynamics studies indicate that this task can be accomplished by considering specific heat, surface tension, or characteristics of molecular clusters, such as the number of component chains and radius of gyration. In the last part of my presentation, I will delve into the extension of these approaches to chains of Van der Waals beads and proteins.

**The seminar will be given in Polish on-site in room 203, slides will be in English.**

**The ZOOM transmission will also be available - link is provided on the IP PAS website.**

**We sincerely invite You**

**Roman Puźniak  
Andrzej Szewczyk  
Henryk Szymczak**