PhD Project
Tytuł: **Nanotoxicity of carbon nanomaterials**
Linia eksperymentalna: SOLCRYS
Promotor: prof. dr hab. Maciej Kozak, ma.kozak@uj.edu.pl
Opiekun w SOLARIS: prof. dr hab. Maciej Kozak
Short description: In recent years a number of novel nanosystems, based on carbon nanomaterials, has been proposed. However, the components of these systems - carbon nanofibers, graphene or fullerenes can exhibit also serious nanotoxic effects. Mainly they induce the distortion of a lipid bilayer structure within the biological membrane. Therefore the main goal of this project is a characterisation of the influence of different carbon nanomaterials on the structure of a model biomembrane systems based on phosphatidylcholine derivatives (DPPC, DMPC, DOPC). The structure will be studied by combination of small angle X-ray scattering, atomic force microscopy and spectroscopic methods.
Requirements to the candidate: - knowledge of the topics related to the interaction of X-ray with matter - English language skills enabling the presentation of scientific results in written and oral form - experience with research equipment - second degree in physics, chemistry, material sciences, or a related field - knowledge of X-ray scattering and Atomic Force Microscopy - knowledge of synchrotron methods, beamline components, and research equipment will be beneficial
Data rozpoczęcia: To be agreed between the supervisor and the candidate