

<b>PhD Project</b>
<b>Title: Cancer microenvironment studies using chemical imaging and machine learning</b>
Beamline: CIRI
Scientific Supervisor: dr hab. Tomasz P. Wróbel, tomek.wrobel@uj.edu.pl
SOLARIS Supervisor: dr hab. Tomasz P. Wróbel, tomek.wrobel@uj.edu.pl
<p><b>Short description:</b></p> <p>This project focuses on the development of proper approaches with IR imaging as a tool for understanding the microenvironment of cancer. The aim is to create label-free, non-destructive and highly accurate comprehensive histopathological models of pancreatic and breast cancers using machine learning. IR imaging at the tissue level offers a wealth of information and proper processing is crucial for creating robust classification models, which can be relevant for the clinician. The specific goals will include FT-IR data acquisition on the newly built SOLAIR beamline, creation of machine learning models and optimization in terms of accuracy vs. robustness..</p>
<p><b>Requirements to the candidate:</b></p> <ul style="list-style-type: none"> <li>- knowledge of the topics related to the interaction of infrared with matter</li> <li>- English language skills enabling the presentation of scientific results in written and oral form</li> <li>- experience with research equipment</li> <li>- second degree in physics, chemistry, material sciences, or a related field</li> <li>- knowledge of vibrational spectroscopy methods – FTIR or Raman</li> <li>- knowledge of synchrotron methods, beamline components, and research equipment will be beneficial</li> </ul>
<p><b>Starting date:</b></p> <p>To be agreed between the supervisor and the candidate</p>