Scientific supervisor	
Name	Prof. Franciszek Krok
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Proposed research topic

Electron and atomic force microscopies in the investigations of structure of metal oxide thin films

Short description (< 1000 characters)

The aim of the research will be to learn the basic vacuum techniques and to get familiar with the process of metal oxide (e.g. TiO2) thin film growth by magnetron sputtering. The student will become also introduced to characterization techniques for imaging the morphology and chemical composition of such prepared layers using scanning electron microscopy (SEM) and low energy electron microscopy (LEEM), and atomic force microscopy (AFM under normal conditions) techniques.

The above mentioned experimental techniques will allow the student to learn the basic processes of fabrication and characterization of nanometer scale systems. Knowledge of the techniques outlined above is an important component used in many areas of solid state physics, surface physics, and nanotechnology.

Main research tool

System for magnetron sputtering deposition, Scanning Electon Microscopy, Low Energy Electron Microscopy, Atomic Force Microscopy

Additional requirements to the candidate

- interest in experimental work;
- ability to solve technical problems.

Possibility to continue student internship in the form of:

Diploma thesis (master's or bachelor's degree)	x
PhD study	x