



## KONWERSATORIUM INSTYTUTU FIZYKI UMCS

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### *What can we learn from Spin Polarized Low Energy Electron Microscopy*

Development of microscopy techniques allowing investigation of magnetically ordered surfaces of crystals, thin films and nanostructures opens new possibilities for exploration their basic properties in a local scale. Nucleation and evolution of magnetic domains, propagation of domain walls, spin reorientation transition, magnetization dynamics, phase transitions are among numerous phenomena being currently investigated using microscopes sensitive to magnetism.

Among others, Spin Polarized Low Energy Electron Microscope (SPLEEM) is one of few tools that makes possible *in situ* studies of magnetism of nanostructures including determination of magnetization direction and exchange asymmetry which can be considered as proportional to the magnitude of magnetization. It also allows for the correlation of magnetic properties with crystallographic structure and morphology of the investigated objects via LEED and LEEM. Such possibility is very crucial in structures with reduced dimensionality as their formation and physical properties are strongly influenced by the underlying substrate.

Here, after a brief introduction into the SPLEEM technique selected examples of application of microscope in the studies of nanostructures and ultrathin films will be given. In particular, recent results of investigation of silicene and antimonene will be presented.

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Uprzejmie zapraszam wszystkich pracowników, doktorantów i studentów Instytutu Fizyki.

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