



Graduate Physics Seminar, 13.06.2014, 3 PM
University of Nova Gorica, Ajdovščina Auditorium

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ELECTRONIC PROPERTIES OF MAGNETIC THIN FILM ON METAL SURFACES

Studies of electronic properties of magnetic thin films are closely related to the development of spintronics. Today the field of spintronics is a very active field and its main objective is manipulation of spin-degrees of freedom in solid-state systems.

Transition metal thin films grown on crystalline surfaces are model systems for the study of spin polarization effects at nanometric scale. The study of these systems can be done following the surface science approach. The magnetic thin films on metal surfaces possess quantum well states. The complex spin polarization effects of the quantum well states are due to breaking of the crystalline periodicity.

An overview of the basic concepts of surface science will be presented. That includes: surface states, quantum well states in thin film, and *in-situ* preparation of surfaces and thin films. The angle resolved photoemission spectroscopy technique will be described as a tool for a direct access to the electronic band structure. Preliminary results of the study of Fe thin film on W(110) substrate will be presented.