

**[SP-11]**

## **Magneto-optical and optical spectroscopy of Fe/Au multilayered films**

현영훈<sup>1</sup>, 박경환<sup>1</sup>, 남창우<sup>1</sup>, 이영백<sup>1</sup>, Y. V. Kudryavtsev<sup>2</sup>, R. Gontarz<sup>3</sup>

<sup>1</sup>양자 광기능 물성 연구센터, 한양대학교 물리학과, <sup>2</sup>Institute of Metal Physics, Kiev, Ukraine,

<sup>3</sup>Institute of Molecular Physics, Poznan, Poland

Many exciting effects were recently discovered in the metallic multilayered films (MLF), such as quantum confinement effect, oscillations of the magnetic coupling and the Kerr rotation, and formation of unusual structural states. All the Fe/Au MLF were prepared by rf-sputtering onto glass substrates at room temperature. The equatorial Kerr effect (EKE) was measured at 293 K in an energy range of 1 - 5 eV. The magnetic properties were investigated for the in-plane geometry by using a vibrating sample magnetometer. The magneto-optical (MO) properties of Fe/Au MLF have been investigated experimentally and theoretically. However, the origin of a structure in the EKE spectra, observed in the UV range, requires further explanation. In contrast to the MO properties, the optical properties of Fe/Au MLF were investigated insufficiently. The nature of the structure in the UV region may be elucidated by comparing the experimental and the computer-simulated MO and optical properties in the framework of various models for the MLF structure.