

Quantum statistical theory of submonolayer magnetic films at simple metal surfaces

G. Ponedilok and O. Fostjak

*Polytechnic National University, Institute of Applied Mathematics and Fundamental Sciences, 12 S. Bandery Str., 79013 Lviv, Ukraine,
E-mail: ponedilok@polynet.lviv.ua*

Ultrathin and submonoatomic magnetic films have well perspective in applying as basic elements of magnetic sensors, spintronics, micro- and nanoelectronics. Today there are many principal theoretical and experimental problems, particularly, conditions of surface magnetism or co-existence magnetic phase of films. We propose microscopic model of submonoatomic film, adsorbed at crystal surface of simple metal. Besides, model Hamiltonian takes into account exchange interactions and resonance electronic transfer “film – semi-bounded metal”. Electron states of adsorbed magnetic film are investigated by means of functional integration method.