



Advanced materials: structure and properties

Lecturer: prof. Stepan Mudry (Ivan Franko National University, Lviv, Ukraine)

Course description:

Main characteristics of new materials for industry- shape memory alloys, amorphous metallic alloys, semi-solid alloys, new magnetic materials, fullerenes and nanotubes, ferrocolloidal suspensions, porous metallic alloys (metallic foams), multiferroics, nanocomposites. Structure formation at obtaining of these materials and interrelation between structure and physical properties. Interrelation between working parameters and structure of materials.

Methods of atomic and cluster structure studies and main results. Structure evolution at transition from liquid to crystalline (amorphous) state. Structure changes at nanocrystallization of amorphous alloys. Physical phenomena, used to produce the shape memory alloys and multiferroics. Martensitic transformation. Methods of structure modification at formation of composite materials. The direct conversion of heat to electricity using multiferroic alloys.

TERMINY WYKŁADÓW			
Data	Dzień tygodnia	Godzina	Sala
2012-11-12	Poniedziałek	8-11	131 GG
2012-11-13	Wtorek	8-11	131 GG
2012-11-14	Środa	15-18	131 GG
2012-11-15	Czwartek	8-11	131 GG
2012-11-16	Piątek	8-11	131 GG