

POSMAT I Programa de Pós-graduação em Engenharia de Materiais



Course: Physical Metallurgy Fundamentals and Thermal Processing of Metals

Code: MEM.008

Credits: 03

Module: Specific formation

Research area: Selection, processing e characterization

Contents:

Principles of metallurgical thermodynamics and phase diagram. Diffusion in solids. Nucleation and growth. Precipitation in metallic materials. Ferro-carbon system and phase transformations. Recovery and recrystallization in metallic materials.

References:

1. REED-HILL, R. E.; ABBASHIAN, R. **Physical metallurgy principles**. 3rd ed. Boston: PWS Publishing Company, 1994. 926p.
2. HOSFORD, W. F. **Physical Metallurgy**. London: Marcel Dekker, 2005. 520p.
3. SANTOS, R. G. **Transformações de fases em materiais metálicos**. Campinas: Unicamp, 2006. 429p.
4. BHADESHIA, H. K. D. H.; HONEYCOMBE, R.W.K. **Steels: microstructure and properties**. 3rd ed. Oxford: Elsevier, 2006. 344p.
5. PORTER, D. A.; EASTERLING, K. E. **Phase transformations in metals and alloys**, 2nd ed. Van Nostrand, 1992.
6. Technical papers