

Course Title: Nanochemistry-I

Course Code: CH-360

Credit Hours: 2-0

Pre-requisite: Nil

Course Objectives

1. This course aims to provide students with an introduction to nanostructured materials(NSM), several techniques used for their synthesis as well as various properties related to nanomaterials. This course will provide the students with all the background knowledge required to study advance courses on nanomaterials and their practical applications in the next semesters.

Contents

2. Introduction to Nanomaterials and Nanotechnology, Classifications of Nanostructures, Peculiarities of nanostructured materials, Instability of nanostructured materials due to grain growth, Effect of size on NSM, Synthesis of NSM, Morphology ofNSM and Applications of NSM.

Recommended Books

3. Text Books.

Pokropivny, V., Lohmus, R., Hussainova, I., Pokropivny, A., and Vlassov, S., Introductionto Nanomaterials and Nanotechnology , Tartu University Press (2007). “

Brechignac, C., Houdy, P. and Lahmâhi, M., Nanomaterials and Nanochemistry , Springer(2006). ”

Recommended Books

4. Vollath, D., Nanomaterials: An Introduction to Synthesis, Properties and Applications , 2nd Edition, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany(2013). Edelstein, A.S., and Cammarata, R.C., Nanomaterials: Synthesis, Properties and Applications , Taylor and Francis Group (1998).

5. Course Outcomes. On successful completion of the course the student will have sound knowledge about:

Nanomaterials.

Synthesis of nanomaterials

Growth of NSM and their practical applications.