



CD204 Aug 3.0

Chemistry of Materials

Instructor

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Teaching Assistant

Email:

Department: SSCU

Course Time: Tue., Thu., 9:00 - 10:30

Lecture venue: MMCR room, SSCU

Detailed Course Page:

Announcements

Brief description of the course

The course is designed to introduce the various aspects of Materials Chemistry - Candidates desiring to learn chemistry related aspects of materials would benefit from the course. The course also introduces many aspects from a fundamental understanding, which would be beneficial to the students who are pursuing studies on materials

Prerequisites

Masters in Chemistry/Physics/Materials Science/Metallurgy

Syllabus

The course is designed to introduce the various aspects of Materials Chemistry - such as structures, X-ray Diffraction, Neutron and Electron Diffraction, defects in the solid state, dielectric and other related properties, magnetism, amorphous materials, solid state ionics etc.

Course outcomes

Better understanding of the chemistry behind many compounds, that have been of use as materials in devices.

The fundamental understanding of the many structures would help the students to better tune their skills in

modifying the properties, if they desire to work in this area..

Grading policy

Mid-term examination (40%), one assignment(10%) and final examination (50%)

Assignments

Resources

1. A.R. West, Solid State Chemistry and its applications
2. D.M. Adams, Inorganic Solids
3. A.K. Cheetham and P. Day, Solid State Chemistry : 1. Techniques and 2. Applications
4. P.A. Cox, The electronic structure and chemistry of solids
5. P.A. Cox, Transition metal oxides
6. R.C. Evans, An Introduction to crystal chemistry
7. A.F. Wells, Structural Inorganic Chemistry
8. N.N. Greenwood, Ionic crystal, lattice defect and non-stoichiometry
9. L. Smart and E. Moore, Solid state chemistry : An introduction
10. C. Kittel, Introduction to solid state physics
11. J.K. Burdett, Chemical bonding in solids
12. C.N.R. Rao and J. Gopalakrishnan, New directions in solid state chemistry
13. C.N.R. Rao, Chemical approaches to synthesis of inorganic materials