Point Defects in Crystalline Materials

MATSCEN 7835

Credit Hours:
2.00 - 2.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
A thermodynamic and electrochemical treatment of the formation, concentrations, mobilities, and interactions of atomic, ionic, and electronic point defects in materials at high temperatures.

Prerequisites and Co-requisites:
Prereq: 6730 and 6737, or permission of instructor.

Course Goals / Objectives:
- Learn how point defects influence physical, chemical and electrochemical properties of solids by applying basics of thermodynamics and transport phenomenal

Course Topics:
- Structure, Thermodynamics and Point Defects
- Transport in Compounds
- Solid Electrolytes and Electrochemistry
- Modeling of Transport Behavior in Heterogeneous Materials

Designation:
Elective