



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

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 phenomena

Course Topics:

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

Designation:

Elective