

Bavarian's group Research projects: 2017-2018

For more information please call (818)677-7746, (Prof. L. Reiner or Prof. B. Bavarian) or visit us in JD1130 during weekday M-F

Application of High Strength Aluminum alloys for Aircraft Applications

RESEARCH OBJECTIVES: Investigate mechanical and corrosion behavior of high strength aluminum alloys used in aircraft industry. Fellow researchers will spend multiple weeks training to learn how to prepare samples, use universal test equipment, microscope, and conduct metallographic analysis, and workshop on Lab. safety. Students will explore the effects of different heat treatment conditions on alloy performance for several high strength aluminum alloys such as 7050, 7055, 7075 and light weight high strength Al-Li alloys such as 2095. Materials characterization will be conducted using SEM/EDAX analysis.

Corrosion Protection of Steel pipes/ Reinforced Concrete Structures Using Corrosion Inhibitors

RESEARCH OBJECTIVES: AIMS² students will use different corrosion inhibitors to protect steel alloys in highly corrosive environments. They will do literature research, look at material selection, and test corrosion inhibitors using potentiostatic, potentiodynamic and EIS impedance measurements for monitoring corrosion behavior of steel rebar in concrete. Students will be trained to use equipment, do analysis and prepare testing samples.

Application of Electrochemical techniques for Corrosion Rate Measurements

RESEARCH OBJECTIVES: AIMS² students will be trained how to prepare samples, use electrochemical test equipment, microscope, and data analysis. Students will work with Ni-base alloys to monitor their corrosion behavior in different chemical solutions followed by developing methods to lower corrosion rate and protection.