COLLEGE OF
Engineering, Computer Science, and Technology

Seminar in Interdisciplinary STEM Research

November 6th – Thursday, 3:05-4:20 PM PST

Location: E&T C256

HOSTED BY CREST-CATSUS AND SIKAND SITI CENTERS



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Dr. Juan A. Ruiz Ochoa currently serves as a Research Professor at UABC and belongs to the "Thermomechanical Systems Applied to Engineering" Academic Group. He graduated from the Zacatepec Institute of Technology and subsequently completed his Master's and Doctoral studies at the Centro de Investigación en Ingeniería y Ciencias Aplicadas of the Universidad Autónoma del Estado de Morelos, working with intermetallic materials and Shape Memory Alloys. He completed a Postdoctoral Fellowship at the Instituto de Ciencias Físicas (UNAM). He subsequently worked at RAMSA Specialty Foundry in San Luis Potosí, where he was assigned to a Technology Researcher position. In 2016, he began his current position in the Aerospace Engineering Educational Program at the Universidad Autónoma de Baja California (FCITEC) in Tijuana. He has published several papers in renowned research journals, mostly focused on the implementation of alloy improvements. He is currently working on a project to recycle construction waste, among other things. He obtained his recognition Candidate Level of National Researchers System in 2022.

Abstract

AISI 316L austenitic stainless steel is very common in industry. Large quantities of this material are discarded as scrap and can later be used as recycled material for casting. This type of steel is highly susceptible to intragranular corrosion in the ferrite phase, which is present at 12% when it would be preferable to keep it at 1% or less. In this work, it was found that CF3M cast steel is the most similar in terms of the elemental chemical proportions of its components. Therefore, the Schaeffler and Schoefer diagrams were used to reduce the "equivalent ferrite" content by at least 90%, making adjustments in the casting by modifying the Ni and Cr percentages.

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