Structural and Chemical Characterization of Metals, Alloys, and Compounds—2011

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Structural and Chemical Characterization of Metals, Alloys, and Compounds—2011

Symposium held August 14–19, 2011, Cancun, México

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PREFACE

The XX International Materials Research Congress was held in Cancun, Mexico from 14 to 19 August 2011. It was organized by the Mexican Materials Society. About 1235 specialized scientists from more than 39 countries participated in the 24 different symposium.

This Materials Research Society Proceedings contains papers presented at the Symposium 3 "Structural and Chemical Characterization of Metals, Alloys and Compounds" of the XX International Materials Research Congress. This event is intended as a forum for the dissemination of research results on materials science. The participants and the organizers have found this event very successful due to the high quality and novelty of the scientific results. Among the important achievements of the symposium were the new personal contacts between the scientists, for the creation of multinational thematic and research networks, as well as promoting contacts for future collaboration.

This special issue covers several aspects of the structural and chemical characterization of the materials in the following areas: metals, alloys, ceramics, steels, composites, polymeric compounds, welding, nanomaterials, and surface coatings, among others. They are amorphous, crystalline, powders, fibers, thin films, etc., which were prepared with different techniques. The structural characterization techniques included scanning electron microscopy (SEM), X-ray diffraction (XRD), transmission electron microscopy (TEM), atomic force microscopy (AFM), optical microscopy (OM), mechanical characterization, atomic absorption, luminescence, thermo luminescence, energy transfer, photorefractive effect, birefringence, photo catalysis, photoconductivity, birefringence, laser emission, etc. Theoretical models from these properties are included, too.

The scientific program of symposium 3 included 68 oral and 122 poster presentations. In addition, invited talks were focused on different topics like composites, alloys, electron microscopy and corrosion prevention applications. The special issue contains 27 papers based on contributions presented at the symposium. All manuscripts included in this special issue have been accepted after peer review.

We would like to express our deep appreciation to the Mexican Materials Society Advisory Committee. As well as sincerely thanks the reviewers for their valuable assistance and help in the review process. We also would like to thank the Mexican Materials Society, National University of Mexico (UNAM) and Mexican Petroleum Institute (IMP) for the support in organization of the symposium.

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Additionally, we would like to thank all those who have worked to make this congress an exciting and fruitful meeting: meeting chairs, symposia organizers, IMRC staff, MRS staff, editors, management committee, advisory committee, and Materials Research Society of Mexico.

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