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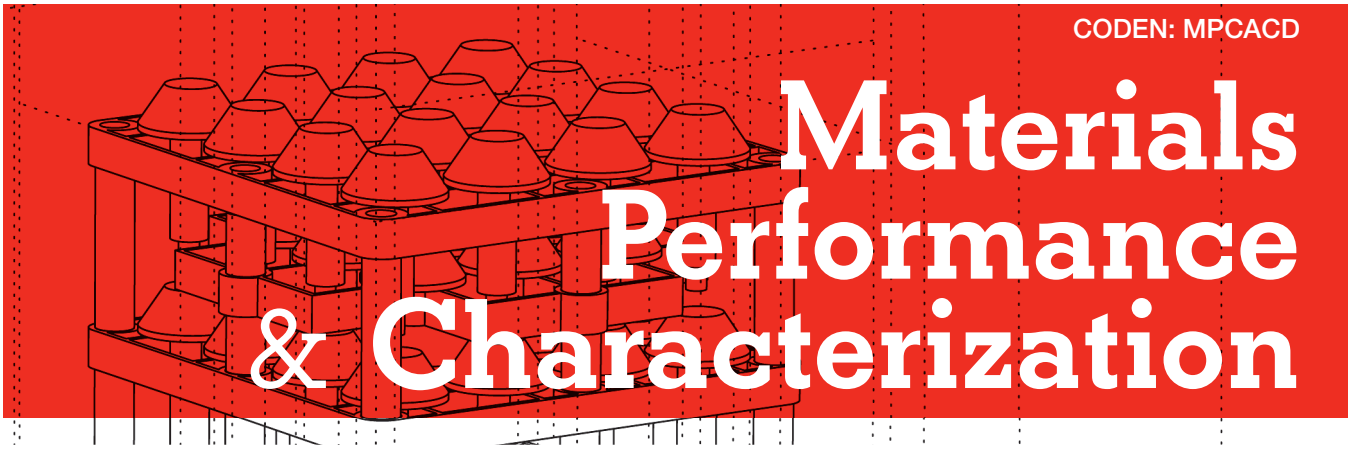

Materials Performance & Characterization

Contents:

Special Issue on Metallography, Part 1

Guest Editor: George F. Vander Voort

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ASTM INTERNATIONAL

Published by ASTM International | 100 Barr Harbor Drive | PO Box C700 | W. Conshohocken, PA 19428-2959

Editorial Objectives

Materials Performance and Characterization is published online by ASTM International, a nonprofit technical organization that develops and publishes voluntary consensus standards and related information for materials, products, systems, and services.

Contributions are peer reviewed prior to publication.

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The journal publishes high-quality, original articles, including full papers, review papers, and technical notes, on both theoretical and practical aspects of the processing, structure, properties, and performance of materials used in mechanical, transportation, aerospace, energy systems, and medical devices. These materials include metals and alloys, glass and ceramics, polymers, composite materials, textiles, and nanomaterials. The journal covers topics related to the integrity of materials which encompasses mechanical testing, fatigue and fracture, corrosion, wear, and erosion, as well as the integrity of components and systems such as rolling element bearings, piping and pressure vessels, fasteners, space technology, and nanotechnology. The journal publishes articles on both qualitative and quantitative methods used to characterize materials including all forms of microscopy, chemical analysis, and nondestructive evaluation.

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POSTMASTER: Send address change to ASTM International—MPC, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

Printed in the USA

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Overview

Special Issue on Metallography, Part 1

It is indeed a great honor and a real pleasure to be asked by the co-editors of ASTM International's journal *Materials Performance and Characterization*, Dr. Richard W. Neu and Dr. George E. Totten, to act as guest editor for a special issue of this prestigious journal. With their help, we were able to attract a large number of excellent papers, written by leading engineers and scientists from all over the world. These authors specialize in the characterization of metals and alloys of many compositions, made by a wide variety of processes, followed by a variety of casting or hot working processes. Some of the alloys were further processed by a variety of heat treatment processes, surface hardening techniques, and welding procedures. Hence, the papers cover many interesting technologies for our readers.

This special issue presents the first 23 such papers that were submitted and subjected to the peer-review process, performed by experts in the fields covered by each submitted paper. We thank both the authors and the reviewers for their hard work and dedication. I also thank the ASTM staff dealing with the vast multitude of issues related to the process of publishing an outstanding journal.

This special issue starts with five papers focused on the use of ASTM E04 microscopy test methods. These methods have been used to characterize nonmetallic inclusions (E45) as well as any discrete second-phase using stereological procedures (E1245), scanning electron microscopy (E2142), and characterization of non-Gaussian grain size distributions (E1181) with the aim of improving these methods. Next, we present 11 papers that employ microscopy methods and other technologies to characterize a wide range of cast or wrought metals and alloys. Lastly, we present seven papers where the authors present newer, sophisticated technologies for solving the metallurgical problems that can face us in our work.

We hope that you enjoy these papers and look forward to the second part of this special issue, which is currently in development.

George F. Vander Voort, FASTM
Former Chairman of Committee E04 on Metallography
Struers Inc.
Wadsworth, IL

Information for Authors

For details regarding paper submission go to http://mc04.manuscriptcentral.com.

The subject matter must not be of a speculative nature and the contents must not include materials of an advertising nature. The paper must not be seriously defective as to literary form and structure, continuity of thought, and clarity of expression. The substance of the paper should not have been published previously in the open literature.

Authors preparing papers for submittal should observe the conventions of style explained in the ASTM Style Manual. Since the journal does not request page charges, the author is expected to conform to these standard conventions for style. SI units are to be used throughout; if data were not measured in SI units, a note should appear to that effect and the original units should be included in parentheses after the SI units.

IN APPRECIATION

The high quality of the papers that appear in this publication is a tribute not only to the obvious efforts of the authors represented but to the unheralded, though essential, efforts of their reviewers. It is to the reviewers dedication to upholding the high standards of their profession that this note pays tribute. On behalf of ASTM International and the authors as well, we acknowledge with appreciation their important contribution to the success of this journal.

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