

Materials Performance and Characterization

Contents:

Special Issue on Recent Advances in Hot Deformation of Materials, Part 2

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ISSN: 2379-1365
Stock #: MPC2002

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Contributions are peer reviewed prior to publication.

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Materials Performance and Characterization (Print ISSN 2379-1365; E-ISSN 2165-3992) is published online by ASTM International. The views expressed in this journal are not those of ASTM International. The data and opinions appearing in the published material were prepared by and are the responsibility of the contributors, not of ASTM International.

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Overview

Special Issue on Recent Advances in Hot Deformation of Materials, Part 2

This overview for the second volume of this special issue on *Recent Advances in Hot Deformation of Materials* is being written at a time when the whole world is struggling with SARS-COVID-19. In these unprecedented times, let all of us in the scientific community hope that the virus spread is contained and a vaccine is found as soon as possible to protect the humanity.

The first part of this two-part special issue covered 24 papers including two review articles. The remaining 18 papers that were peer reviewed and accepted for publication appear in this second volume. The areas covered in this special issue include hot deformation of steels, aluminum alloys and their composites, magnesium alloys, titanium alloys, superalloys, and simulation of thermomechanical processing. This issue starts with a review article on dynamic recrystallisation in Titanium alloys from the group of Prof. Alankar of the Indian Institute of Technology Bombay. The next five papers cover the hot deformation of materials and its effect on the microstructure evolution in different alloy systems. The materials covered include commercially important alloys such as CP-Ti and IN718Plus™. The next eight papers present the hot workability of materials through constitutive flow analysis and development of processing maps for different commercial and experimental alloys. The results of these papers will be useful to predict the possibility of flow localization and fracture during hot deformation of alloys studied. These publications add important test data to the literature on hot deformation of materials. This is followed by a paper on the comparison of predictive capability of various constitutive equations for aluminum composites. The detailed analysis presented in this paper on the applicability of different constitutive models for aluminum matrix composites will be useful for researchers to apply for their materials of study. The last three papers are on related areas of hot deformation viz. grain stability in friction stir welds, molecular dynamics 'simulation of bending of a Ni nanowire and thermoforming of PMMA sheet. Therefore, this special issue covers many interesting technologies for the readers on a wide range of topics.

The articles describe the latest advances in the high temperature deformation processing of different types of materials. We sincerely thank both the authors and reviewers for their hard work and dedication. I wholeheartedly thank the ASTM staff dealing with the issues related to the process of publishing an outstanding journal.

S. V. S. Narayana Murty, PhD.

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