
EDITORIAL

Special Edition on Superplasticity and Superplastic Forming

This special issue of the Journal of Materials Engineering and Performance (JME&P) is dedicated in part to topics that were presented orally at the AeroMat 2007 Conference in Baltimore, Maryland, June 25-28, 2007. The papers were given during the International Symposium on Superplasticity and Superplastic Forming (SPF) Sessions. This is a continuation of scientific and manufacturing research related to superplasticity in material science that began in 1996 with help from the United States Air Force and has continued with yearly meetings since then. The symposia are now organized by the Materials Information Society (ASM).



The past year has yielded greater incremental improvements in the testing methods that are used to evaluate the superplastic performance of materials. The new ASTM E2448 Standard Test Method for Determining the Superplastic Properties of Metallic Sheet Materials was developed and it is now approved. This will provide a common method for testing, evaluating, and publishing superplastic properties in a manner that will transcend the boundaries among corporations, institutes, and academia. Additional gains were made in biaxial SPF testing and in the numeric modeling of complex shapes.

Tremendous breakthroughs are being realized in the combination of Friction Stir Welding (FSW) with SPF. The two processes are complimentary and have allowed the fabrication of more complex and larger industrial pieces than have ever been possible before. Recent advances have proven that the FSW/SPF system can work for both titanium and aluminum alloys. I hope to see more work in the field of finite element analysis of these two technologies to help us begin to understand the actual flow mechanics and the dynamic behavior of the materials, in order to assist us in improving the industrial manufacturing processes.

I want to thank the individual paper authors for contributing to this special journal venue. I owe a tremendous debt of gratitude to my assistant editors, Dr. Mamidala Ramulu and Dr. Marwan Khraisheh, for their outstanding individual editing contributions and especially their timely coordination efforts. I am also thankful to have been given this opportunity by Jeff Hawk, the editor of ASM's JMEPEG and his staff. I look forward to carrying on with the SPF journey at the next Superplasticity Conference, which will be held at AeroMat 2008 in Austin, TX.

Guest Editor

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