Preface

The S2P International Conferences are dedicated to science and technology of semi-solid processing of metal alloys and composites. Since the discovery of the specific flow behaviour of metals in semi-solid state during the early seventies, this fascinating technology has experienced a dynamic and turbulent development history which has led to a whole family of new production processes, new equipment and industrial applications. In order to fully exploit the technical and economic potential of these new ideas it is important to achieve a better understanding of the microstructure development, flow behaviour, improved material and process modelling as well as process control. The S2P International Conferences have contributed to achieve this goal by providing a forum for scientists from various disciplines as well as for engineers and production specialists to learn from each other, to share the common knowledge and to develop a common sense on fundamental topics and industrial requirements.

The first S2P Conference was held in 1990 at the Ecole des Mines de Paris in Sophia Antipolis, France. Other conferences followed in 1992, Cambridge, MA, USA; 1994, Tokyo, Japan; 1996, Sheffield, England; 1998, Denver, CO, USA; 2000, Torino, Italy; 2002, Tsukuba, Japan; 2004, Limassol, Cyprus and 2006, Busan, South Korea. Aachen and Liege, Germany and Belgium, 2008 and Beijing, China, 2010.

The 12th S2P Conference, organized by the Council for Scientific and Industrial Research (CSIR), South Africa took place from October 8th to 11th 2012 at The Westin, Cape Town.

To ensure a high quality of the conference contributions the submitted papers have been individually reviewed. We definitely want to thank both, the reviewers and the authors for their valuable work and effort to achieve the best possible result. The conference concentrates on the advancement of fundamental knowledge and development of materials and industrial processes for semi-solid manufacturing of high performance metal components. The conference and proceedings are organized in 5 distinct sections: Microstructure and Properties; Process Development; Modelling, Simulation and Rheology; Material Development and Alloy Design and Industrial Applications. A unique feature of the conference was the short workshop that was held during the course of the conference on “The Future of Semi-Solid Metal Forming” with aim of stimulating new approaches/ideas to ensure that there is wider adoption of the SSM technology.

A special thanks to all who were involved in organizing of the conference and in particular Dr Hein Möller for his effort in liaising and assistance with editing of these proceedings.

G Govender

Chairman of the 12th S2P

S2P 2012

Chairmen

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