ELEVATED TEMPERATURE COATINGS: SCIENCE AND TECHNOLOGY IV

Edited by:
Narendra B. Dahotre
Janet M. Hampikian
John E. Morral

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PREFACE

Elevated Temperature Coatings: Science and Technology IV is the fourth volume in a series of invited and contributed papers presented in the symposium: High Temperature Coatings IV. This symposium was organized by Narendra B. Dahotre, Janet M. Hampikian and John E. Morral and held in New Orleans, Louisiana, during the TMS annual meeting, February 11-15, 2001. This volume consists of invited and contributed papers from national and international researchers representing universities, federal laboratories and industries. Thus, it provides a rich diversity of material in the research area of High Temperature Coatings. The sponsorship of the TMS Surface Engineering Committee of Materials Design and Manufacturing Division, the Joint TMS/ASM Corrosion and Environmental Effects Committee of Structural Materials Division, and the Materials Science Critical Technology Sector of ASM is gratefully acknowledged.

The topic of High Temperature Coatings is one that is motivated by the increasing need for improved surface characteristics from a wide range of materials without compromising bulk characteristics such as mechanical performance. An example of this is the current thrust toward achieving higher operating temperature in industrial gas turbine engine components through use of thermal barrier coatings in high temperature gradient areas such as on turbine nozzles and blades. The specific materials topics covered in this symposium include: Thermal Barrier Coatings, Interdiffusion of Coatings, Metallic/Intermetallic Coatings, and Oxidation and Ceramic Coatings. Thus this time in addition to being concerned with the adherence of thermal barrier coatings and the oxidation resistance of metallic coatings, one group of papers was concerned with interdiffusion and microstructural changes that occur in metallic coatings during service.

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