PREFACE

A number of published Conference Proceedings on sintering have dealt predominantly on experimental results. The present volume is a shift from this practice, as it covers state-of -the – arts reviews written by active sintering science experts. The repeated and relaxed interactions between the authors and the editor had an added advantage in reaching this goal.

The present book covers seven invited overviews from authors hailing from five countries. The paper by J-M. Chaix (France) discusses quantitative aspects of microstructure and modeling of sintering. Apart from describing the general microstructural aspects, the technical aspects of image analysis including that of nanostructured materials have brought added value. The paper by Z.S. Nikolic (Serbia) is a theoretical review on the simulation of liquid phase sintering, particularly under microgravity conditions. The author has extensively and critically reviewed the reported results in sintering literature. In another review paper, A.L. Lisovsky (Ukraine) has opened the vista of deconsolidation of polycrystalline skeletons in sintered composite materials. The author has dealt with systems with more than one refractory solid phase and also the nanodispersed composite materials. G.S. Upadhyaya (India) reviews the 'Samsonov's model for electronic mechanism of sintering and its relevance'. Though the model is a qualitative one, its utility is far more significant as a predictive tool. Various case studies from real multi-phase material systems are the testimony of the application of Samsonov's model.

The last three papers are material based, but they interweave the theoretical sintering aspects in order to achieve a successful alloy design. Two papers by K. Biswas (India) discuss solid state and liquid phase sintering fundamentals of SiC ceramics respectively. The author has rightly included the details of spark plasma sintering of this ceramic. The last paper in this book is by P. Datta (Germany), who elaborately discusses the material science aspects of doped LaGaO3 based SOFC (solid oxide fuel cell) materials including their sintering .This oxide ceramic has drawn world wide attention and there is a big competition among the scientists in obtaining challenging results.

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