

# Preface

At the origin of challenges in various embodiments of high technologies, functional materials are being developing today in practically all areas. They involve both bulk and surface characteristics and their interaction with the environment. These materials rather, multi-materials be able to be shaped to achieve the desired properties by making a suitable choice of constituents.

The different parts of this book have been carefully developed in order to provide the reader with an understanding of the various concepts resulting from research activities accumulated in a wide variety of technological areas. It brings clear answers to researchers, professionals and students alike; It is organized around four essential themes which provide a deeper knowledge of the phenomena associated with plastic deformation shaping industrial alloys, to the techniques of assembly by heterogeneous welding, brazing and hard reloading, to the sintering and to the physical and optical properties of thin films.

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