HIGH INTEGRITY DIE CASTING PROCESSES

EDWARD J. VINARCIK



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To My Dearest Friend

Ad Majorem Dei Gloriam

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PREFACE

This book has grown largely out of lectures given for a continuing education seminar titled "Advanced Die Casting Processes" presented at the University of Wisconsin-Milwaukee. It is intended for use as a supplement to such a course and as a reference to practicing process engineers, product engineers, and component designers. The content of this book focuses on presenting the concepts behind advanced die casting technologies, specifically vacuum die casting, squeeze casting, and semi-solid metalworking. Moreover, several sections within the book are dedicated to examining case studies that illustrate the practical nature of these processes.

The book is divided into five distinct sections. The initial two chapters of the book are intended to present the basic concepts related to die casting processes and the flow of molten metal. The second portion of the book examines each of the high integrity casting process along with case studies. Three chapters are dedicated to product design as applied to high integrity die casting processes as well as two chapters focusing on quality and defects. An understanding of the defects and their causes can aid in their avoidance. The final chapter of the book deals with future advances under development.

Included with this book is a compact disk containing Microsoft PowerPoint presentations for each chapter. These presentations can be used for training and teaching purposes, or select slides can be extracted from the presentation for use in engineering proposals, customer education seminars, or marketing presentations. To assist the presenter, detailed speaker notes are available for each chapter slide. To view the chapter notes for any given slide, one must right click the computer mouse and select "speaker notes" while running the slide show.

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