

Preface

The *ASM Handbook*, Volume 4A, *Steel Heat Treating Fundamentals and Processes*, represents the first of several Volumes to be published on heat treating. As indicated in the title, Volume 4A focuses on the fundamental aspects of steel heat treating and the many processes of steel heat treating. The Volume 4B, planned for future publication, will cover the heat treating and behavior of the many types of steels and cast irons.

As with the last edition of this Volume, the Volume Editors recognized that the researchers, engineers, technicians and students that will use this Volume 4A have different needs with regard to their level of understanding. Articles on the fundamentals provide in-depth background on the scientific principles associated with steel heat treatment, while articles on the various heat treating processes take a more practical approach. The Volume Editors have also tried to present a comprehensive reference that can be of use to the diverse heat treating community.

All sections of this Volume have been reviewed to be sure that they reflect the current status of the technology. Many sections have been expanded, such as the sections on fundamentals and processing methods for carburizing and nitriding of steels. Coverage on the hardenability of steels is expanded, and several new articles have been added on quenching fundamentals and processes. Updates have been done as appropriate, and efforts were taken to include charts, examples, and reference information from the substantive archives of the Society—and its predecessors—the American Society for Metals, and the American Society for Steel Treating. This Volume is especially fitting in the 100th anniversary year of ASM International.

We wish to thank our many colleagues who served as editors and authors of the individual articles. In particular, the editors also are indebted to the Heat Treating Society (An Affiliate Society of ASM International) and its members, which give the foundation for this publication and other events, conferences, and educational programs. This Volume would not have been possible without their efforts.

Jon Dossett
George Totten