

Preface

This special edition presents a series of scientific articles on the critical advancements in applications of silicon carbide (SiC) in modern semiconductor technologies. As the demand for more efficient and durable materials grows, SiC has emerged as a frontrunner, offering unparalleled properties such as high thermal conductivity, exceptional mechanical strength, and superior electrical performance. These attributes make it indispensable in power electronics, high-frequency devices, and what is special, for use in harsh environment applications.

This special collection examines the intrinsic properties of semiconductor wafers and substrates, their mechanical, electrical, and thermal characteristics, and also the latest developments in SiC wafer production and processing, substrate preparation, and their integration into high-tech products which are critical to the functionality and reliability of modern electronic devices.

By bringing together research and practical insights, this special edition will be a valuable resource for scientists and industry specialists seeking to harness the full potential of silicon carbide in the evolving landscape of innovation in semiconductor technologies.