

# Preface

The presented special edition is devoted to the latest research in semiconductor materials and devices on silicon carbide and the design and research of machines and equipment.

Inspection and analysis of defects in silicon carbide structures and application of synchrotron X-ray Topography technique in research of them are the themes of the first two chapters.

The last section contains research results on the combustion characteristics of landfill gas that is used as an alternative energy source for spark ignition engines, the thermal effect of bobbin tool friction stir welding on the mechanical behaviour of high-density polyethylene sheets, hydrodynamic stability of fluid flow through a restricted channel, etc.

This edition will be helpful to specialists engaged in the design and production of power electronics and to mechanical engineers.