

1. Record Nr.	UNINA9910557498703321
Titolo	SiC based Miniaturized Devices
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2020
Descrizione fisica	1 online resource (170 p.)
Soggetti	History of engineering and technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>MEMS devices are found in many of today's electronic devices and systems, from air-bag sensors in cars to smart phones, embedded systems, etc. Increasingly, the reduction in dimensions has led to nanometer-scale devices, called NEMS. The plethora of applications on the commercial market speaks for itself, and especially for the highly precise manufacturing of silicon-based MEMS and NEMS. While this is a tremendous achievement, silicon as a material has some drawbacks, mainly in the area of mechanical fatigue and thermal properties. Silicon carbide (SiC), a well-known wide-bandgap semiconductor whose adoption in commercial products is experiencing exponential growth, especially in the power electronics arena. While SiC MEMS have been around for decades, in this Special Issue we seek to capture both an overview of the devices that have been demonstrated to date, as well as bring new technologies and progress in the MEMS processing area to the forefront. Thus, this Special Issue seeks to showcase research papers, short communications, and review articles that focus on: (1) novel designs, fabrication, control, and modeling of SiC MEMS and NEMS based on all kinds of actuation mechanisms; and (2) new developments in applying SiC MEMS and NEMS in consumer electronics, optical communications, industry, medicine, agriculture, space, and defense.</p>