1. Record Nr. UNINA9910647394303321

Autore	Nikhil Kumar C. S.
Titolo	Magnonic Devices : Numerical Modelling and Micromagnetic Simulation Approach / / by C. S. Nikhil Kumar
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2023
ISBN	9783031226656 9783031226649
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (89 pages)
Collana	SpringerBriefs in Materials, , 2192-1105
Disciplina	530.41 621.3815
Soggetti	Magnetism Spintronics Nanoelectromechanical systems Materials science—Data processing Solid state physics Nanoscale Devices Computational Materials Science Electronic Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Backward Volume Spin Waves in a Rectangular Geometry -- Magnetostatic Waves in Magnonic Crystals: A PWM Approach -- Field Localization in Striped Magnonic Crystal Waveguide -- Walkers Solution for Curved Magnonic Waveguide and Resonant Modes in Magnonic Ring -- Nano-contact Driven Spin Wave Excitations in Magnonic Cavity -- Magnetic Field Feedback Oscillator: A Micromagnetic Study.
Sommario/riassunto	This book briefly looks at numerical modeling and micromagnetic simulation results of magnonic crystals, which are periodically modulated magnonic devices regarded as the magnetic counterpart of photonic crystals with spin waves acting as the information carrier. Since the wavelength of the spin wave is several orders of magnitude shorter than that of electromagnetic waves of the same frequency,

	magnonic crystals are promising candidates for miniaturization, especially in the fields of data storage and processing. The book begins by describing the dispersion relation of dipolar spin waves in a magnonic curved waveguide, solving Walker's equation in cylindrical coordinates, and then calculating the dispersion of exchange spin waves using perturbation theory. It describes simulated nano-contact-driven spin wave excitations in a magnonic cavity, featuring a design of an antidot magnonic crystal around the nano-contact, with the frequency of the spin wave mode generated lying within the band gap of the magnonic crystal. The proposed device behaves as a SWASER—Spin Wave Amplification by the Stimulated Emission of Radiation. This book will find interest among researchers and practitioners interested in the modeling, simulation, and design of novel magnonic devices.

2.

Record Nr.	UNINA9910337927503321
Autore	Shabalin Igor L
Titolo	Ultra-High Temperature Materials II : Refractory Carbides I (Ta, Hf, Nb and Zr Carbides) / / by Igor L. Shabalin
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2019
ISBN	94-024-1302-2
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (764 pages)
Disciplina	620.11217
Soggetti	Materials science Chemistry, Inorganic Ceramics Glass Composite materials Characterization and Evaluation of Materials Inorganic Chemistry Ceramics, Glass, Composites, Natural Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	A comprehensive guide and reference book.
Nota di contenuto	Dedication -- Preface -- About the Author -- Introduction -- Tantalum

Carbides -- Hafnium Monocarbide -- Niobium Carbides -- Zirconium Monocarbide -- Addendum -- Index (Physical Properties) -- Index (Chemical Systems).

Sommario/riassunto

This exhaustive work in three volumes and over 1300 pages provides a thorough treatment of ultra-high temperature materials with melting points over 2500 °C. The first volume focuses on Carbon and Refractory Metals, whilst the second and third are dedicated solely to Refractory compounds and the third to Refractory Alloys and Composites respectively. Topics included are physical (crystallographic, thermodynamic, thermo physical, electrical, optical, physico-mechanical, nuclear) and chemical (solid-state diffusion, interaction with chemical elements and compounds, interaction with gases, vapours and aqueous solutions) properties of the individual physico-chemical phases of carbon (graphite/graphene), refractory metals (W, Re, Os, Ta, Mo, Nb, Ir) and compounds (oxides, nitrides, carbides, borides, silicides) with melting points in this range. It will be of interest to researchers, engineers, postgraduate, graduate and undergraduate students alike. The reader is provided with the full qualitative and quantitative assessment for the materials, which could be applied in various engineering devices and environmental conditions at ultra-high temperatures, on the basis of the latest updates in the field of physics, chemistry, materials science and engineering.