

1. Record Nr.	UNINA9910155544003321
Titolo	Superconducting materials for high energy colliders : proceedings of the 38rd Workshop of the INFN Eloisatron Project, Erice, Italy, 19-25 October 1999 / / editors, L. Cifarelli and L. Maritato
Pubbl/distr/stampa	Singapore : , : World Scientific, , 2001 ©2001
Descrizione fisica	1 online resource (230 pages) : illustrations
Collana	Science And Culture Series - Physics ; ; 20
Disciplina	621.3/5
Soggetti	Superconductivity - Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"In memory of T. Ypsilantis."
Nota di bibliografia	Includes bibliographical references.
Sommario/riassunto	"The ELOISATRON (ELN) Project aims at a future proton supercollider with 100–500 TeV energy per beam and 1034–1036 cm ^{−2} s ^{−1} luminosity. While the Large Hadron Collider (LHC) is being implemented at CERN, it is very timely to study the feasibility of the next generation of hadron colliders at the extreme limits of energy and luminosity. In this respect, the achievement of extremely high magnetic fields and the production of accelerating rf cavities with very low losses are a crucial point in the actual construction design of such a collider. The search for superconducting materials with suitable properties to be used in this field has gained a new impulse after the discovery of the so-called high temperature superconducting compounds (HTSCs) with superconducting critical temperatures higher than 100 K. Besides the critical temperatures, the transport performances of this class of compounds are still very far from allowing applications in extremely high energy colliders. On the other hand, in the last few years, the technological and scientific improvements obtained for both the HTSCs and the conventional superconducting materials are very promising. This book reviews the recent status of R&D on the rising generation of superconducting materials for accelerator magnets and cavities, and discusses novel aspects and ideas in this domain."--Publisher's

website.
