

1. Record Nr.	UNINA9910464519503321
Titolo	BCS [[electronic resource]] : 50 years // edited by Leon N. Cooper, Dmitri Feldman
Pubbl/distr/stampa	Hackensack, N.J., : World Scientific, c2011
ISBN	1-283-14449-2 9786613144492 981-4304-66-2
Descrizione fisica	1 online resource (500 p.)
Altri autori (Persone)	CooperLeon N FeldmanD. E (Dmitrii Eduardovich)
Disciplina	537.6/23
Soggetti	Superconductivity - History Superconductors - History Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	PREFACE; CONTENTS; I. Historical Perspectives; REMEMBRANCE OF SUPERCONDUCTIVITY PAST; THE ROAD TO BCS; DEVELOPMENT OF CONCEPTS IN SUPERCONDUCTIVITY; FAILED THEORIES OF SUPERCONDUCTIVITY; NUCLEAR MAGNETIC RESONANCE AND THE BCS THEORY; SUPERCONDUCTIVITY: FROM ELECTRON INTERACTION TO NUCLEAR SUPERFLUIDITY; DEVELOPING BCS IDEAS IN THE FORMER SOVIET UNION; BCS: THE SCIENTIFIC ""LOVE OF MY LIFE""; II. Fluctuations, Tunneling and Disorder; SQUIDS: THEN AND NOW; RESISTANCE IN SUPERCONDUCTORS; COOPER PAIR BREAKING; SUPERCONDUCTOR-INSULATOR TRANSITIONS; NOVEL PHASES OF VORTICES IN SUPERCONDUCTORS BREAKING TRANSLATIONAL INVARIANCE BY POPULATION IMBALANCE: THE FULDE-FERRELL-LARKIN-OV CHINNIKOV STATESIII. New Superconductors; PREDICTING AND EXPLAINING T _c AND OTHER PROPERTIES OF BCS SUPERCONDUCTORS; THE EVOLUTION OF HTS: T _c -EXPERIMENT PERSPECTIVES; THE EVOLUTION OF HIGH-TEMPERATURE SUPERCONDUCTIVITY: THEORY PERSPECTIVE; IV. BCS Beyond Superconductivity; THE SUPERFLUID PHASES OF LIQUID ³ He: BCS

THEORY; SUPERFLUIDITY IN A GAS OF STRONGLY INTERACTING FERMIONS; BCS FROM NUCLEI AND NEUTRON STARS TO QUARK MATTER AND COLD ATOMS; ENERGY GAP, MASS GAP, AND SPONTANEOUS SYMMETRY BREAKING
BCS AS FOUNDATION AND INSPIRATION: THE TRANSMUTATION OF SYMMETRY FROM BCS TO THE LHC; INDEX

Sommario/riassunto

The BCS theory of superconductivity developed in 1957 by Bardeen, Cooper and Schrieffer has been remarkably successful in explaining the properties of superconductors. In addition, concepts from BCS have been incorporated into diverse fields of physics, from nuclear physics and dense quark matter to the current standard model. Practical applications include SQUIDs, magnetic resonance imaging, superconducting electronics and the transmission of electricity. This invaluable book is a compilation of both a historical account and a discussion of the current state of theory and experiment. With con
