1.	Record Nr.	UNINA9910254629003321
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	Titolo	Ab Initio Studies on Superconductivity in Alkali-Doped Fullerides / / by Yusuke Nomura
	Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2016
	ISBN	981-10-1442-6
	Edizione	[1st ed. 2016.]
	Descrizione fisica	1 online resource (XX, 143 p. 27 illus., 18 illus. in color.)
	Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
	Disciplina	537.623
	Soggetti	Superconductivity
		Superconductors
		Physics
		Solid state physics
		Strongly Correlated Systems, Superconductivity
		Numerical and Computational Physics, Simulation
		Solid State Physics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Introduction to superconductivity in alkali-doped fullerides -- Methods: Ab initio downfolding and model-calculation techniques -- Application of cDFPT to alkali-doped fullerides -- Analysis of low-energy Hamiltonians with extended DMFT -- Concluding remarks.
	Sommario/riassunto	This book covers high-transition temperature (Tc) s-wave superconductivity and the neighboring Mott insulating phase in alkali-doped fullerides. The author presents (1) a unified theoretical description of the phase diagram and (2) a nonempirical calculation of Tc. For these purposes, the author employs an extension of the DFT+DMFT (density-functional theory + dynamical mean-field theory). He constructs a realistic electron–phonon-coupled Hamiltonian with a newly formulated downfolding method. The Hamiltonian is analyzed by means of the extended DMFT. A notable aspect of the approach is that it requires only the crystal structure as a priori knowledge. Remarkably, the nonempirical calculation achieves for the first time a quantitative reproduction of the experimental phase diagram including the

superconductivity and the Mott phase. The calculated Tc agrees well with the experimental data, with the difference within 10 K. The book provides details of the computational scheme, which can also be applied to other superconductors and other phonon-related topics. The author clearly describes a superconducting mechanism where the Coulomb and electron-–phonon interactions show an unusual cooperation in the superconductivity thanks to the Jahn–Teller nature of the phonons.