1. Record Nr. UNINA9910739447503321

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Titolo	Spectroscopic study on charge-spin-orbital coupled phenomena in Mott-Transition oxides : doctoral thesis accepted by the University of Tokyo, Tokyo, Japan / / Masaki Uchida
Pubbl/distr/stampa	Tokyo ; ; New York, : Springer, c2013
ISBN	4-431-54297-3
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (109 p.)
Collana	Springer theses, , 2190-5053
Disciplina	537.6221 539.7/25 539.725
Soggetti	Charge transfer Transition metal oxides - Spectra
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.
Nota di contenuto	Introduction -- Experimental Methods -- Charge Dynamics and Thermoelectricity in a Typical System -- Charge Dynamics in a Doped Valence-Bond Solid System -- Charge Dynamics in Layered Nickelates with Charge-Ordering Instability -- Summary.
Sommario/riassunto	In this thesis the author presents the results of extensive spectroscopy experiments beyond the bounds of each transition element to clarify the origins of characteristic spectral features and charge dynamics in charge-spin-orbital coupled phenomena in Mott-transition oxides. Several counterpart 3d transition-metal oxides were adopted as model systems suitable for examining the mechanisms involved, and their electronic structures were systematically investigated using three main spectroscopy methods. Comparative studies on the charge dynamics and Mott transition features of transition-metal oxides were performed: Charge dynamics and thermoelectricity in a typical Mott transition system La1-XSrXVO3, charge dynamics in a doped valence-bond solid system (Ti1xVx)2O3 and in layered nickelates R2-xSrxNiO4 with charge-ordering instability are investigated thoroughly. The results obtained successfully provide a number of novel insights into the emergent phenomena near the Mott transition. .