1. Record Nr. UNINA9910300411603321

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Titolo	Development of an Ultrafast Low-Energy Electron Diffraction Setup / / by Max Gulde
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-18561-6
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (149 p.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	548
Soggetti	Surfaces (Physics) Interfaces (Physical sciences) Thin films Spectrum analysis Microscopy Materials—Surfaces Surface and Interface Science, Thin Films Spectroscopy and Microscopy Surfaces and Interfaces, Thin Films
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 -- Methods and Concepts -- Aspects of Ultrafast LEED -- Numerical Analysis of a Tip-Based Ultrafast Electron Gun -- Experimental Analysis of a Tip-Based Ultrafast Electron Gun -- Ultrafast PMMA Superstructure Dynamics on Free-Standing Graphene -- Conclusions. .
Sommario/riassunto	This book presents an Ultrafast Low-Energy Electron Diffraction (ULEED) system that reveals ultrafast structural changes on the atomic scale. The achievable temporal resolution in the low-energy regime is improved by several orders of magnitude and has enabled the the melting of a highly-sensitive, molecularly thin layer of a polymer crystal to be resolved for the first time.This new experimental approach permits time-resolved structural investigations of systems that were previously partially or totally inaccessible, including surfaces, interfaces

and atomically thin films. It will be of fundamental importance for understanding the properties of nanomaterials so as to tailor their properties.