1. Record Nr. UNINA9910783642003321

Titolo	Vibrational spectroscopy with neutrons [[electronic resource]] : with applications in chemistry, biology, materials science and catalysis / / P. C.H. Mitchell ... [et al.]
Pubbl/distr/stampa	Hackensack, NJ, : World Scientific, c2005
ISBN	1-281-88086-8 9786611880866 981-256-783-6
Descrizione fisica	1 online resource (670 p.)
Collana	Series on neutron techniques and applications ; ; vol. 3
Altri autori (Persone)	MitchellP. C. H (Philip Charles Harry)
Disciplina	539.7/58
Soggetti	Neutrons - Inelastic scattering Vibrational 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 and index.
Nota di contenuto	Foreword; Contents; Acknowledgements; Abbreviations, Acronyms and Computer Programs; Glossary of Symbols; 1 Introduction; 2 The Theory of Inelastic Neutron Scattering Spectroscopy; 3 Instrumentation and Experimental Methods; 4 Interpretation and Analysis of Spectra using Molecular Modelling; 5 Analysis of INS spectra; 6 Dihydrogen and Hydrides; Surface Chemistry and Catalysis; 8 Organic and Organometallic Compounds; 9 Hydrogen Bonding; 10 Soft Condensed Matter- Polymers and Biomaterials; 11 Non-hydrogenous Materials and Carbon; 12 Vibrational Spectroscopy with Neutrons- the Future Appendix 1 Neutron Cross Sections of the Elements Appendix 2 Inelastic Neutron Scattering Theory; Appendix 3 The Resolution Function of Crystal Analyser Spectrometers; Appendix 4 Systems Studied by INS; Index
Sommario/riassunto	Inelastic neutron scattering (INS) is a spectroscopic technique in which neutrons are used to probe the dynamics of atoms and molecules in solids and liquids. This book is the first, since the late 1960's, to cover the principles and applications of INS as a vibrational-spectroscopic technique. It provides a hands-on account of the use of INS, concentrating on how neutron vibrational spectroscopy can be

employed to obtain chemical information on a range of materials that are of interest to chemists, biologists, materials scientists, surface scientists and catalyst researchers. This is an access