

1. Record Nr.	UNINA9910460566503321
Autore	Field L. D.
Titolo	Organic structures from 2D NMR spectra // L. D. Field, H. L. Li, and A. M. Magill
Pubbl/distr/stampa	Chichester, England ; ; West Sussex, England : , : Wiley, , 2015 ©2015
ISBN	1-118-86892-7
Descrizione fisica	1 online resource (330 p.)
Disciplina	543/.66
Soggetti	Nuclear magnetic resonance spectroscopy Spectrum analysis Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; List of Figures; List of Tables; 1 NMR Spectroscopy Basics; 1.1 The Physics of Nuclear Spins; 1.2 Basic NMR Instrumentation and the NMR Experiment; 2 One-Dimensional Pulsed Fourier Transform NMR Spectroscopy; 2.1 The Chemical Shift; 2.2 1H NMR Spectroscopy; 2.2.1 Chemical Shifts in 1H NMR Spectroscopy; 2.2.2 Spin-Spin Coupling in 1H NMR Spectroscopy; 2.2.3 Decoupling in 1H NMR Spectroscopy; 2.2.4 The Nuclear Overhauser Effect in 1H NMR Spectroscopy; 2.3 Carbon-13 NMR Spectroscopy; 2.3.1 Decoupling in 13C NMR Spectroscopy 2.3.2 Chemical Shifts in 13C NMR Spectroscopy 2.4 Fluorine-19 NMR Spectroscopy; 2.5 Phosphorus-31 NMR Spectroscopy; 2.6 Nitrogen-15 NMR Spectroscopy; 3 Two-Dimensional NMR Spectroscopy; 3.1 General Principles; 3.2 Proton-Proton Interactions; 3.2.1 Correlation Spectroscopy - The COSY Experiment; 3.2.2 Total Correlation Spectroscopy - The TOCSY Experiment; 3.2.3 Nuclear Overhauser Spectroscopy - The NOESY Experiment; 3.3 Carbon-Carbon Interactions; 3.3.1 The INADEQUATE Experiment; 3.4 Heteronuclear Correlation Spectroscopy 3.4.1 Heteronuclear Single Bond Correlation - The HSQC, HMQC and me-HSQC Experiments 3.4.2 Heteronuclear Multiple Bond Correlation - HMBC; 4 Miscellaneous Topics; 4.1 NMR Solvents; 4.2 Reference

Compounds and Standards; 4.3 Dynamic Processes; 4.3.1 Protons on Heteroatoms; 4.3.2 Rotation about Partial Double Bonds; 4.4 Second-Order Effects; 4.5 Effect of a Chiral Centre on NMR Spectra; 5 Worked Examples; 5.1 General Principles; 5.2 Worked Example 1; 5.3 Worked Example 2; 6 Problems; Problem 1; Problem 2; Problem 3; Problem 4; Problem 5; Problem 6; Problem 7; Problem 8; Problem 9; Problem 10; Problem 11; Problem 12; Problem 13; Problem 14; Problem 15; Problem 16; Problem 17; Problem 18; Problem 19; Problem 20; Problem 21; Problem 22; Problem 23; Problem 24; Problem 25; Problem 26; Problem 27; Problem 28; Problem 29; Problem 30; Problem 31; Problem 32; Problem 33; Problem 34; Problem 35; Problem 36; Problem 37; Problem 38; Problem 39; Problem 40; Problem 41; Problem 42; Problem 43; Problem 44; Problem 45; Problem 46; Problem 47; Problem 48; Problem 49; Problem 50; Problem 51; Problem 52; Problem 53; Problem 54; Problem 55; Problem 56; Problem 57; Problem 58; Problem 59; Problem 60; Problem 61; Problem 62; Problem 63; Problem 64; Problem 65; Problem 66; Index; EULA

Sommario/riassunto

The derivation of structural information from spectroscopic data is now an integral part of organic chemistry courses at all Universities. Over recent years, a number of powerful two-dimensional NMR techniques (e.g. HSQC, HMBC, TOCSY, COSY and NOESY) have been developed and these have vastly expanded the amount of structural information that can be obtained by NMR spectroscopy. Improvements in NMR instrumentation now mean that 2D NMR spectra are routinely (and sometimes automatically) acquired during the identification and characterisation of organic compounds. Organic Structures from 2D NMR S
