interpretation of mass spectra an introduction the organic chemistry monograph series

#mass spectrometry #mass spectra interpretation #organic chemistry #monograph series #spectral analysis

This monograph provides an introduction to the interpretation of mass spectra, focusing on its application in organic chemistry. It covers fundamental principles and techniques necessary for understanding and analyzing mass spectral data, making it a valuable resource for students and researchers seeking a comprehensive overview of mass spectrometry in organic compound identification and characterization. The organic chemistry monograph series aims to provide in-depth knowledge on this topic.

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Mass Spectrum of Pentane
Parent Peak
Why Is the Propyl Cation the Base Peak and Not the Butyl Cation
Allylic Carbocation
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Introduction
M Peak
Example
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Carbon Dioxide

Total Molecular Mass
Chemical Bonds Carbon Dioxide
Propane C3h8
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Possible Fragmentation Patterns
Mass-to-Charge Ratio
Base Peak
Interpreting some Mass Spectra
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Most Common Elements Found in Organic Molecules
The Plausibility of the Molecular Formula
Fragmentation Pattern
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Carboxylic Acid
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Ester
Resonance Structure of the Ester
Primary and Secondary Amines
Amide
Alkanes Alkenes and Alkynes
Ch Stretch of an Alkene and an Alkyne
Relationship between Atomic Mass and Wave Number
Bond Strength and Wave Number
Conjugation
Conjugated Ketone
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Mass Spectrometry - Mass Spectrometry by Bozeman Science 479,241 views 10 years ago 8 minutes, 20 seconds - 009 - **Mass Spectrometry**, In this video Paul Andersen explains how a spectrometer was used to identify the presence of isotopes.
John Dalton
Basic Mass Spectroscope
The Mass Analyzer
Detector
Calibrate the Machine
Sampling
Average Atomic Mass
Part 1: Mass Spectrometry - Basics and Principle - Part 1: Mass Spectrometry - Basics and Principle by Dr. Puspendra Classes 249,766 views 5 years ago 11 minutes - Mass Spectrometry, (Playlist) https://www.youtube.com/watch?v=Q-IJIM_m8lo&list=PLEI-bY8S8u_DKLj5f46jYuC-uJb7iXGo_d Dr.
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Ir Spectroscopy

Asymmetric Stretch
Symmetric Bend
Sample Ir Spectrum
Transmittance
The Saturated Ch Stretch
Carbonyl Stretch
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Introduction
Frequency of light
Absorption of light
Absorption bands
Single bonds
IR spectrum
Functional group region
Fingerprint region
Functional group wave numbers
NMR Analysis - Assigning a Spectrum and Predicting a Structure (Harder Version) - NMR Analysis - Assigning a Spectrum and Predicting a Structure (Harder Version) by Tony St John 86,054 views 7 years ago 11 minutes, 19 seconds - ... reactions that can be done that's going to be a sticking point right when we're doing **organic chemistry**, we really need to have a ...
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Introduction
Types of fragmentation
Heterolytic cleavage
Homolytic cleavage
Alpha cleavage
Sample problem
Alpha Cleaving
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Introduction
Vacuum
Production of ions
Generating ions
Electron impact ionization
Chemical ionization
Atom bombardment
Electrospray ionization
Mass analyzer
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Fragmentation
Fragmentation example - propanone
Common fragments
Example 1 - butane
Example 2 - ethanoic acid

Example 3 - benzoic acid
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Slide 2
Mass Spec Page 4 Slide 3
Sample Problem 1 The spectrum of a corresponding molecule containing a halogen
Chemistry: Mass Spectrometry - Identifying Organic Molecules - Chemistry: Mass Spectrometry - Identifying Organic Molecules by Atomi 41,945 views 4 years ago 6 minutes, 23 seconds - In this video, we **introduce mass spectrometry**, as a technique to identify **organic**, molecules.
Introduction
How Mass Spectrometry Works
Mass Spectrum
Molecular Ion Peak
Summary
How2: Interpret a mass spectrum - How2: Interpret a mass spectrum by Andrew Crookell 405,659 views 11 years ago 4 minutes, 41 seconds - Shows you how to get the information out of a **mass spectrum**, and use it to help suggest the identity of an unidentified molecule.
Interpreting Mass Spectrum Charts #capechemistry #massspectrometry - Interpreting Mass Spectrum Charts #capechemistry #massspectrometry by Mr. Hare Lectures 6,390 views 1 year ago 32 minutes - Welcome back to our next video in this video we will i will be showing you how to **interpret**, ir and ir **mass spectrum**, data all right so ...
Mass spec base peak example - Mass spec base peak example by J Michelle Leslie 26,258 views 3 years ago 4 minutes, 7 seconds - The **mass spectrum**, for ethyl benzoate is shown below which fragment represent fragment represents the base peak so there's a ...
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Intro
Mass spectrometry
Magnetic field
Atomic mass
Mass to charge ratio
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Introduction
NMR
Mass Spec
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This monograph provides an introduction to the interpretation of mass spectra, focusing on its application in organic chemistry. It covers fundamental principles and techniques necessary for understanding and analyzing mass spectral data, making it a valuable resource for students and researchers seeking a comprehensive overview of mass spectrometry in organic compound identification and characterization. The organic chemistry monograph series aims to provide in-depth knowledge on this topic.