

SHREE H.N. SHUKLA GROUP OF COLLEGES

(AFFILIATED TO SAURASHTRA UNIVERSITY & GTU)



2-vaishali nagar, Near
Amrapali railway
crossing,
Raiya road, Rajkot-
360001. Ph.No.-
(0281)2440478, 2472590

3-vaishali nagar, Near
Amrapali railway
crossing,
Raiya road, Rajkot-
360001. Ph.No.-
(0281)2471645

Behind marketing yard,
Near Lalpari lake,
Between Amargadh-
Bhichri, Rajkot-360002.
Ph.No.-90990 63150

M. Sc. SEMESTER-IV

ORGANIC PHARMACEUTICAL CHEMISTRY

C(OP)-401: ADVANCE SPECTROSCOPIC TECHNIQUES

1. Ultraviolet Photoelectron Spectroscopy: An overview, theory and applications of UV-spectroscopy.
2. Electron Paramagnetic Resonance Spectroscopy: Introduction, theory, instrumentation, spin-spin coupling, qualitative and quantitative analysis, multiple resonance, spin labelling, metallic complexes and other uses of EPR spectroscopy.
3. ^1H NMR Spectroscopy: Overview of NMR spectroscopy, spin-spin interaction and nomenclature, non 1^{st} order spectrum, applications of coupling constants.
2D NMR technique. Multinuclear NMR spectroscopy and its applications.
4. ^{13}C NMR spectroscopy, factors affecting ^{13}C NMR spectroscopy: Comparison between ^1H and ^{13}C NMR chemical shifts and identification of various organic molecules with coupling, decoupling, off resonance, etc.

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5. Vibrational and Rotational Spectroscopy

e. NIR: Principle, instrumentation and applications.

f. Raman spectroscopy: Principle, theory, instrumentation and applications.

6. Mass spectroscopy: Principle, theory, instrumentation, fragmentation and applications.

Reference Books

27. Understanding NMR-Spectroscopy (2Edition), Wiley Publisher by James Keeler.
28. Spectroscopy by H. Kaur, PragatiPrakashan
29. Text book of spectroscopy by Jyotikumar, Sonali publication.
30. Analytical Spectroscopy by James Very, Pacific Book Int.
31. NMR Spectroscopy by Harald Gunther Wiley.
32. Handbook of Instrumental Techniques for Analytical Chemistry by F. Settle Pearson Edu.
33. Introduction to Spectroscopy (3rd Edition) by Pavia LampmanKriz: Cengage.
34. Instrumental Methods of Chemical Analysis by Gurdeep R. Chatwal & Sham K. Anand, Hiamalaya Publishing House.
35. Spectroscopy of Organic Copmpounds, P.S. Kalsi, New Age International Ltd.
36. Analytical Spectroscopy by James Vergeese.

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37. Organic Spectroscopy by William Kemp.

38. Spectrometric Identification of Organic Compounds. (6 rd Edition) by Robert M. Silverstein & Francis X. Webster, Wiley.

39. Organic Spectroscopy: Principles and Applications, 2 Edition by Jag Mohan, Alpha Science International Ltd., Harrow U. K.