



About the Authors

Rameshwar S. Cheke
Mr. Rameshwar S. Cheke is currently working as assistant professor (Pharmaceutical Chemistry) at Dr. RGOP Malkapur. He has done his graduation from Anuradha college of Pharmacy, Chikhli and Post Graduation from R C Patel Institute of Pharmaceutical Education and Research, Shirpur, in KBCNMU, Jalgaon Maharashtra. He has 3 year experience in Academics. He has published 8 research papers in different national and international peer review journals with 6 books. He currently involved in research on various heterocycles as anticonvulsants and antitubercular.

Rohan R. Narkhede
Mr. Rohan R Narkhede is currently working as research scholar at Department of Medicinal Chemistry, National Institute of Pharmaceutical Education and Research, Raebareilly. He qualified two times GPAT exam. He has completed his graduation from Rajendra Gode College of pharmacy, Malkapur and he was SGBAU gold medalist during in B-pharm. He has published 5 research papers in different national and international journals. He currently involved in research on synthesis and characterization of european pharmacopeial impurities identified in a 1 adrenergic blockers.

Sachin D. Shinde
Mr. Sachin D. Shinde is currently working as Assistant professor at Shri. R. D. Bhakt College of Pharmacy, Jalna. He qualifies two times GPAT exam. He has completed his graduation from Anuradha College of Pharmacy, Chikhali and Post Graduation from R C Patel Institute of Pharmaceutical Education and Research, Shirpur. He has 3 year experience in academics. He has delivered many lectures on GPAT. He has published 14 research papers in different national and international journals and 6 Books.

Dr. Vaibhav S. Adhao
Dr. Vaibhav Adhao completed post graduation from The Tamilnadu Dr. MGR Medical University Chennai, in the year 2008 and completed his Ph.D. from Dr. B.R. Ambedkar University, Uttar Pradesh in the year 2017. He is presently working as Associate Professor in Dr. Rajendra Gode College of Pharmacy, Malkapur, Dist Buldana Maharashtra, India. He is having 11 years of experience in Teaching and research. He has guided about 15 PG students' projects. He has more than 20 papers in reputed national and international journal. He has also guided more than 30 students of B.Pharm and currently involved in research on Co-crystal engineering, Molecularly Imprinted Polymer and Analytical Method Development.

ISBN 97815-43344-13-4

4.6. Capillary electrophoresis	248
4.7. Cellulose acetate electrophoresis	252
UNIT-IV	
CHAPTER 1 : GAS CHROMATOGRAPHY	258-279
1.1. Introduction	258
1.2. Instrumentation	260
1.3. Applications	274
CHAPTER 2 : HIGH PERFORMANCE LIQUID CHROMATOGRAPHY	280-298
2.1. Introduction	280
2.2. Principle	281
2.3. Instrumentation	283
2.4. Advantages of HPLC	291
2.5. Disadvantages of HPLC	292
2.6. Applications	292
UNIT-V	
CHAPTER 1 : ION EXCHANGE CHROMATOGRAPHY	301-319
1.1. Introduction	301
1.2. Ion exchange materials	303
1.3. Classification	303
1.4. Apparatus of ion exchange chromatography	306
1.5. Instrumentation	307
1.6. Applications	312
CHAPTER 2 : GEL CHROMATOGRAPHY	320-332
2.1. Introduction	320
2.2. Theory	322
2.3. Instrumentation	322
2.4. Applications	328
CHAPTER 3 : AFFINITY CHROMATOGRAPHY	333-346
3.1. Introduction	333
3.2. Theory	335
3.3. Applications	341
Index	(i)-(ii)

CONTENTS	
UNIT-I	
CHAPTER 1: UV- VISIBLE SPECTROSCOPY	3-41
1.1. Introduction	3
1.2. The electromagnetic spectrum	4
1.3. Electronic transitions	4
1.4. Chromophore	6
1.5. Auxochromes	6
1.6. Spectral shifts	6
1.7. Factor affecting uv-absorption	8
1.8. Beer lamberts law	9
1.9. Instrumentation	13
1.10. Applications	28
CHAPTER 2: FLUORIMETRY	42-62
2.1 Introduction	42
2.2. Theory	43
2.3. Concepts of singlet, doublet and triplet electronic states	43
2.4. Steps involved in fluorescence	44
2.5. Factors affecting fluorescence intensity	46
2.6. Quenching	49
2.7. Instrumentation	50
2.8. Applications	55
UNIT-II	
CHAPTER 1 : IR SPECTROSCOPY	65-96
1.1. Introduction	65
1.2. Molecular vibrations	68
1.3. Sample handling in ir spectroscopy	71
1.4. Factors influencing absorption	73
1.5. Instrumentation	74
1.6. Applications of ir spectroscopy	84
CHAPTER 2 : FLAME PHOTOMETRY	97-118
2.1. Introduction	97
2.2. Instrumentation	101
2.3. Interferences during quantitative estimation	110
2.4. Applications	111
CHAPTER 3 : ATOMIC ABSORPTION SPECTROSCOPY	119-132
3.1. Introduction	119
3.2. Interferences in AAS	120
3.3. Instrumentation	122
3.4. Applications	127