



An Introduction to Lasers: Theory and Applications, (Revised Edition)

By Dr. M.N. Avadhanulu, Dr. R.S. Hemne

S. Chand & Company Ltd 0. Softcover. Book Condition: New. 5th or later edition. This book is written with an aim to introduce the simple yet elegant principles behind laser operation to beginners. Contents: Chapter 1: BASIC THEORY 1.1 Introduction 1.2 A brief history of the laser 1.3 Interaction of light with laser 1.4 Quantum behaviour of light 1.5 Energy Levels 1.6 Population 1.7 Thermal Equilibrium 1.8 Absorption and emission of light 1.9 Einstein`s prediction 1.10 The Three Processes 1.38 Properties of laser modes Chapter 2: TYPES OF LASERS 2.1 Introduction 2.2 Solid State Lasers 2.3 Gas Lasers 2.4 Tunable dye lasers 2.5 Semiconductor laser 2.6 Free electron laser Chapter 3: LASER BEAM CHARACTERISTICS 3.1 Introduction 3.2 Directionality 3.3 Intensity 3.4 Coherence 3.5 Monochromaticity 3.6 Polarisation 3.7 Speckles Chapter 4: TECHNIQUES FOR CONTROL OF LASER OUTPUT 4.1 Introduction 4.2 Selecting a narrow frequency range 4.3 Selection of TEM₀₀ mode and single longitudinal mode 4.11 Frequency conversion using nonlinear crystals Chapter 5: APPLICATIONS OF LASERS 5.1 Introduction 5.2 Laser in mechanical industries 5.3 Laser in electronics industry 5.4 Laser in nuclear energy 5.5 Laser in medicine 5.11 Consumer electronics industry Books suggested for further reading. Printed Pages: 176.



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