



# HANDBOOK OF LASER SCIENCE AND TECHNOLOGY

## VOLUME I: LASERS AND MASERS

### TABLE OF CONTENTS

#### SECTION 1: INTRODUCTION

1.1 Types and Comparisons of Laser Sources .....	3
--	---

#### SECTION 2: SOLID STATE LASERS

2.1 Crystalline Lasers .....	21
2.1.1 Paramagnetic Ion Lasers .....	21
2.1.2 Stoichiometric Lasers .....	147
2.1.3 Color Center Lasers .....	171
2.2 Semiconductor Lasers .....	179
2.3 Glass Lasers .....	215
2.4 Fiber Raman Lasers .....	265
2.5 Table of Wavelengths of Solid State Lasers .....	275

#### SECTION 3: LIQUID LASERS

3.1 Organic Dye Lasers .....	299
3.2 Inorganic Liquid Lasers .....	397
3.2.1 Rare Earth Chelate Lasers .....	397
3.2.2 Aprotic Liquid Lasers .....	407

#### SECTION 4: OTHER LASERS

4.1 Free Electron Lasers .....	425
4.1.1 Infrared and Visible Lasers .....	425
4.1.2 Millimeter and Submillimeter Lasers .....	441
4.2 X-Ray Lasers .....	455

#### SECTION 5: MASERS

5.1 Masers .....	465
5.2 Maser Action in Nature .....	483

#### SECTION 6: LASER SAFETY

6.1 Optical Radiation Hazards .....	509
6.2 Electrical Hazards from Laser Power Supplies .....	527
6.3 Hazards from Associated Agents .....	535

INDEX .....	545
-------------	-----