

## **Bio-Electromagnetics (RP 4.2.19)**

### **The Origins of Electro-biology**

Introduction

### **The Physiological Function of Intrinsic Electromagnetic Energy**

The Nervous System, Bone Growth Control

### **Control of Living Organisms by Natural and Simulated Environmental Electromagnetic Energy**

Introduction , Evolution of Life, Positional and Navigational Aids, Biological Cycles

### **Electrical Properties of Biological Tissue**

Introduction , Energy Bands, Piezoelectricity, Superconductivity, Techniques of Application of Electromagnetic Fields

### **Effects of Electromagnetic Energy on the Nervous System**

Introduction , Direct Effects, Behavioral Effects

### **Effects of Electromagnetic Energy on the Endocrine System**

Introduction , The Adrenal Cortex , The Thyroid , The Adrenal Medulla and the Pancreatic Islets

### **Effects of Electromagnetic Energy on the Cardiovascular and Hematological Systems**

Introduction , The Cardiovascular System, Blood, Immune Response

### **Effects of Electromagnetic Energy on Biological Functions**

Introduction , Intermediary Metabolism, Reproduction, Growth and Healing Mutagenesis , Uncontrolled Variables

### **Mechanisms of Biological Effects of Electromagnetic Energy**

Introduction, Cybernetic Approach , Analytic Approach

### **Health Risks Due to Artificial Electromagnetic Energy in the Environment**

Introduction, Levels in the Environment, Epidemiological Studies and Surveys Analysis

### **Dosimetry**

Introduction, Definitions and parameters, Energy absorption (SAR), Effects of polarization on SAR, Effects of object size on SAR

### **Examples of medical applications of Electromagnetic Fields**

Therapeutic Applications, Electromagnetic Imaging of Biological Systems.