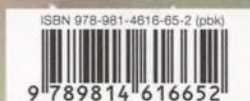


Macroscopic Electrodynamics

Instructor's Solutions Guide

This instructor's solutions guide accompanies our introductory graduate electrodynamics textbook, "Macroscopic Electrodynamics". We emphasize that this is a guide and not a step-by-step exposition for the 391 problems furnished in the text. Helpful indications of starting points and methods are given, as well as enough intermediate steps (and occasional final results) that a knowledgeable instructor can readily fill in the gaps. This approach is designed to provide the instructor with a powerful and time-saving teaching aid for introducing students to this beautiful and wide-ranging subject.

World Scientific
www.worldscientific.com
9236 sc



Contents

<i>Preface</i>	v
1. Introduction and Perspectives	1
2. Introduction to Electrostatics	3
3. Boundary Value Problems in Electrostatics	13
4. Electrostatics in Cylindrical and Spherical Coordinates	23
5. Multipoles, Electrostatics of Macroscopic Media, Dielectrics	35
6. Magnetostatics	47
7. Time Varying Fields I	57
8. Time Varying Fields II	69
9. Plane Electromagnetic Waves and Propagation in Matter	79
10. Waveguides and Resonant Cavities	95

11.	Radiation of Systems and Point Particles	111
12.	Scattering and Diffraction	125
13.	Relativistic Formulations of Electrodynamics	139
14.	Special Topics	149
15.	Appendix	157