



1st ed. 2016, XIII, 450 p. 145 illus., 142 illus. in color.

Printed book

Hardcover

- ▶ 84,99 € | £63.99 | \$99.00
- ▶ *90,94 € (D) | 93,49 € (A) | CHF 93.50

eBook

Available from your library or

- ▶ springer.com/shop

MyCopy

Printed eBook for just

- ▶ € | \$ 24.99
- ▶ springer.com/mycopy

J. Loureiro, J. Amorim

Kinetics and Spectroscopy of Low Temperature Plasmas

Series: Graduate Texts in Physics

- ▶ **Derives the theory in a self-consistent way, providing discussion of the theory valid to describe the plasma physics kinetics from the statistical physics principles**
- ▶ **Provides examples of the application of concepts to different types of discharges emphasizing the particularities of each one**
- ▶ **Includes exercises at the end of each chapter**

This is a comprehensive textbook designed for graduate and advanced undergraduate students. Both authors rely on more than 20 years of teaching experience in renowned Physics Engineering courses to write this book addressing the students' needs.

Kinetics and Spectroscopy of Low Temperature Plasmas derives in a full self-consistent way the electron kinetic theory used to describe low temperature plasmas created in the laboratory with an electrical discharge, and presents the main optical spectroscopic diagnostics used to characterize such plasmas. The chapters with the theoretical contents make use of a deductive approach in which the electron kinetic theory applied to plasmas with basis on the electron Boltzmann equation is derived from the basic concepts of Statistical and Plasma Physics. On the other hand, the main optical spectroscopy diagnostics used to characterize experimentally such plasmas are presented and justified from the point of view of the Atomic and Molecular Physics.

Low temperature plasmas (LTP) are partially ionized gases with a broad use in many technological applications such as microelectronics, light sources, lasers, biology and medicine. LTPs lead to the production of atomic and molecular excited states, chemically reactive radicals, and activated surface sites, which are in the origin, among others, of the deposition of thin films, advanced nanotechnology products, solar cells, highly efficient combustion motors, and treatment of cancer cells.



Order online at springer.com ▶ or for the Americas call (toll free) 1-800-SPRINGER ▶ or email us at: customerservice@springer.com. ▶ For outside the Americas call +49 (0) 6221-345-4301 ▶ or email us at: customerservice@springer.com.

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with * include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with ** include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted.