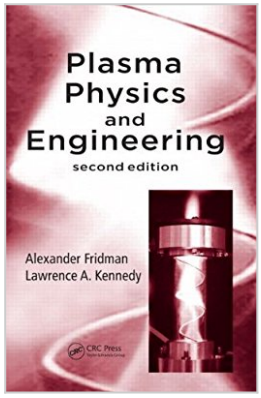

Plasma Physics and Engineering, Second Edition

By Alexander Fridman, Lawrence A. Kennedy

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Plasma plays an important role in a wide variety of industrial processes, including material processing, environmental control, electronic chip manufacturing, light sources, and green energy, not to mention fuel conversion and hydrogen production, biomedicine, flow control, catalysis, and space propulsion.

Following the general outline of the bestselling first edition, **Plasma Physics and Engineering, Second Edition** provides a clear fundamental introduction to all aspects of the modern field. Reflecting recent scientific and technological developments, this resource will be useful to engineers, scientists, and students working with the physics, engineering, chemistry, and combustion of plasma, as well as chemical physics, lasers, electronics, new methods of material treatment, fuel conversion, and environmental control.

The book includes many enhancements and some totally new coverage of fundamental subjects such as:

- Interaction and dynamics of streamers
- Plasma-flow interaction
- High-speed plasma aerodynamics
- Plasma-surface interaction
- Mechanisms and kinetics of plasma–medical processes

Along with these new topics and deeper coverage of material from the first book, this edition presents two new chapters on microdischarges and discharges in liquids. It also contains an extensive database on plasma kinetics and thermodynamics, many helpful numerical formulas for practical calculations, and an array of problems and concept questions. PowerPoint™ slides and a solutions manual are available for qualifying instructors who adopt this book for their courses.

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Review
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About the Author
Prof. Alexander Fridman is Nyheim Chair Professor of Drexel University and Director of Drexel Plasma Institute. His research focuses on plasma approaches to material treatment, fuel conversion and environmental control. Prof. Fridman has over 30 years of plasma research in national laboratories and universities of Russia, France, and the United States. He has published 5 books and 350 papers, and received numerous honors for his work, including Stanley Kaplan Distinguished Professorship in Chemical Kinetics and Energy Systems, George Soros Distinguished Professorship in Physics, and the State Prize of the USSR for discovery of selective stimulation of chemical processes in non-thermal plasma.

Prof. Lawrence A. Kennedy has been the Dean of Engineering and a Professor of Mechanical Engineering at the University of Illinois at Chicago since 1994. He has published over 200 archival publications and over 180 limited circulation reports and abstract reviewed papers. Prof. Kennedy has also won numerous awards such as The Ralph W. Kurtz Distinguished Professor of Mechanical Engineering at OSU (1992-1995) and the Ralph Coats Roe Award from ASEE (1993). He is a Fellow of the American Physical Society, American Society of Mechanical Engineers, American Institute of Aeronautics and Astronautics and the American Association for the Advancement of Science.

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