



# Electron Energy-Loss Spectroscopy in the Electron Microscope

By R.F. Egerton



**Electron Energy-Loss Spectroscopy in the Electron Microscope** By R.F. Egerton

Within the last 30 years, electron energy-loss spectroscopy (EELS) has become a standard analytical technique used in the transmission electron microscope to extract chemical and structural information down to the atomic level. In two previous editions, *Electron Energy-Loss Spectroscopy in the Electron Microscope* has become the standard reference guide to the instrumentation, physics and procedures involved, and the kind of results obtainable. Within the last few years, the commercial availability of lens-aberration correctors and electron-beam monochromators has further increased the spatial and energy resolution of EELS. This thoroughly updated and revised Third Edition incorporates these new developments, as well as advances in electron-scattering theory, spectral and image processing, and recent applications in fields such as nanotechnology. The appendices now contain a listing of inelastic mean free paths and a description of more than 20 MATLAB programs for calculating EELS data.

 [Download Electron Energy-Loss Spectroscopy in the Electron ...pdf](#)

 [Read Online Electron Energy-Loss Spectroscopy in the Electro ...pdf](#)

# Electron Energy-Loss Spectroscopy in the Electron Microscope

By R.F. Egerton

## Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton

Within the last 30 years, electron energy-loss spectroscopy (EELS) has become a standard analytical technique used in the transmission electron microscope to extract chemical and structural information down to the atomic level. In two previous editions, *Electron Energy-Loss Spectroscopy in the Electron Microscope* has become the standard reference guide to the instrumentation, physics and procedures involved, and the kind of results obtainable. Within the last few years, the commercial availability of lens-aberration correctors and electron-beam monochromators has further increased the spatial and energy resolution of EELS. This thoroughly updated and revised Third Edition incorporates these new developments, as well as advances in electron-scattering theory, spectral and image processing, and recent applications in fields such as nanotechnology. The appendices now contain a listing of inelastic mean free paths and a description of more than 20 MATLAB programs for calculating EELS data.

## Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton Bibliography

- Sales Rank: #2473381 in Books
- Published on: 2011-07-29
- Original language: English
- Number of items: 1
- Dimensions: 9.10" h x 1.30" w x 6.30" l, 2.25 pounds
- Binding: Hardcover
- 491 pages

 [Download Electron Energy-Loss Spectroscopy in the Electron ...pdf](#)

 [Read Online Electron Energy-Loss Spectroscopy in the Electro ...pdf](#)

## Download and Read Free Online Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton

---

### Editorial Review

#### Review

From the reviews of the third edition:

“R.F. Egerton’s *Electron Energy-loss Spectroscopy in the Electron Microscope* is the standard text on the subject ... . The book is now very up-to-date; R.F. Egerton has clearly continued adding to the text and references up to the last minute ... . Springer have printed the book beautifully, with colour in place when needed and the references now give full details ... . EEL spectroscopists ... cannot do without this new edition.” (*Ultramicroscopy*, Vol. 116, 2012)

#### From the Back Cover

Within the last 30 years, electron energy-loss spectroscopy (EELS) has become a standard analytical technique used in the transmission electron microscope to extract chemical and structural information down to the atomic level. In two previous editions, *Electron Energy-Loss Spectroscopy in the Electron Microscope* has become the standard reference guide to the instrumentation, physics and procedures involved, and the kind of results obtainable. Within the last few years, the commercial availability of lens-aberration correctors and electron-beam monochromators has further increased the spatial and energy resolution of EELS. This thoroughly updated and revised Third Edition incorporates these new developments, as well as advances in electron-scattering theory, spectral and image processing, and recent applications in fields such as nanotechnology. The appendices now contain a listing of inelastic mean free paths and a description of more than 20 MATLAB programs for calculating EELS data.

- Considered the "Bible of EELS"
- Presents the only in-depth, single-author text for the still-expanding field of TEM-EELS
- Responds to many requests for the first new edition of this classic work since 1996
- Includes discussion of new spectrometer and detector designs, together with spectral-analysis techniques such as Bayesian deconvolution and multivariate statistical analysis
- Provides extended discussion of anisotropic materials, retardation effects, delocalization of inelastic scattering, and the simulation of energy-loss fine structure.
- Describes recent applications of EELS to fields such as nanotechnology, electronic devices and carbon-based materials.
- Offers extended coverage of radiation damage and delocalization as limits to spatial resolution.

From reviews of the first and second edition:

"The text....contains a wealth of practical detail and experimental insight....This book is an essential purchase for any microscopist who is using, or planning to use, electron spectroscopy or spectroscopic imaging." – *JMSA*

"Provides the advanced student with an indispensable text and the experienced researcher with a valuable reference." -- *American Scientist*

## **Users Review**

### **From reader reviews:**

#### **Bernice Hicks:**

This book untitled Electron Energy-Loss Spectroscopy in the Electron Microscope to be one of several books this best seller in this year, that's because when you read this book you can get a lot of benefit into it. You will easily to buy that book in the book retail store or you can order it by way of online. The publisher in this book sells the e-book too. It makes you quickly to read this book, as you can read this book in your Touch screen phone. So there is no reason to you to past this e-book from your list.

#### **Mary Sexton:**

Electron Energy-Loss Spectroscopy in the Electron Microscope can be one of your beginner books that are good idea. All of us recommend that straight away because this reserve has good vocabulary that may increase your knowledge in terminology, easy to understand, bit entertaining but still delivering the information. The copy writer giving his/her effort to get every word into pleasure arrangement in writing Electron Energy-Loss Spectroscopy in the Electron Microscope although doesn't forget the main point, giving the reader the hottest and also based confirm resource facts that maybe you can be certainly one of it. This great information can certainly drawn you into new stage of crucial pondering.

#### **Phyllis Thompson:**

You may get this Electron Energy-Loss Spectroscopy in the Electron Microscope by go to the bookstore or Mall. Just simply viewing or reviewing it might to be your solve problem if you get difficulties for the knowledge. Kinds of this reserve are various. Not only simply by written or printed but can you enjoy this book through e-book. In the modern era just like now, you just looking because of your mobile phone and searching what your problem. Right now, choose your own ways to get more information about your guide. It is most important to arrange yourself to make your knowledge are still up-date. Let's try to choose appropriate ways for you.

#### **Marianne Stromain:**

As a pupil exactly feel bored in order to reading. If their teacher expected them to go to the library as well as to make summary for some publication, they are complained. Just minor students that has reading's spirit or real their leisure activity. They just do what the instructor want, like asked to go to the library. They go to at this time there but nothing reading significantly. Any students feel that examining is not important, boring in addition to can't see colorful photographs on there. Yeah, it is to be complicated. Book is very important for you. As we know that on this period of time, many ways to get whatever we want. Likewise word says, many ways to reach Chinese's country. Therefore this Electron Energy-Loss Spectroscopy in the Electron Microscope can make you feel more interested to read.

## **Download and Read Online Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton #FT4G5P0V3BS**

## **Read Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton for online ebook**

Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton books to read online.

### **Online Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton ebook PDF download**

#### **Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton Doc**

Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton Mobipocket

Electron Energy-Loss Spectroscopy in the Electron Microscope By R.F. Egerton EPub