



Vasilis Pagonis

Luminescence Signal Analysis Using Python

- Provides useful and practical tools for luminescence data analysis and modeling
- Contains more than 80 detailed complete Python codes, available on GitHub and ready to use
- Presents extensively referenced and features comprehensive coverage of each topic

This book compiles and presents a complete package of open-access Python software code for luminescence signal analysis in the areas of radiation dosimetry, luminescence dosimetry, and luminescence dating. Featuring more than 90 detailed worked examples of Python code, fully integrated into the text, 16 chapters summarize the theory and equations behind the subject matter, while presenting the practical Python codes used to analyze experimental data and extract the various parameters that mathematically describe the luminescence signals. Several examples are provided of how researchers can use and modify the available codes for different practical situations. Types of luminescence signals analyzed in the book are thermoluminescence (TL), isothermal luminescence (ITL), optically stimulated luminescence (OSL), infrared stimulated luminescence (IRSL), timeresolved luminescence (TR) and dose response of dosimetric materials. The open-access Python codes are available at GitHub. The book is well suited to the broader scientific audience using the tools of luminescence dosimetry: physicists, geologists, archaeologists, solid-state physicists, medical physicists, and all scientists using luminescence dosimetry in their research. The detailed code provided allows both students and researchers to be trained quickly and efficiently on the practical aspects of their work, while also providing an overview of the theory behind the analytical equations.

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