1. Record Nr. UNINA9910437805603321

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| Autore | Joy David C |
| Titolo | Helium ion microscopy : principles and applications / / David C. Joy |
| Pubbl/distr/stampa | New York : , : Springer, , 2013 |
| ISBN | 1-4614-8660-2 |
| Edizione | [1st ed. 2013.] |
| Descrizione fisica | 1 online resource (viii, 64 pages) : illustrations (some color) |
| Collana | SpringerBriefs in Materials, , 2192-1091 |
| Disciplina | 578.1<br>620.11 |
| Soggetti | Field ion microscopy<br>Helium ions<br>Ion bombardment |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | "ISSN: 2192-1091." |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Chapter 1: Introduction to Helium Ion Microscopy -- Chapter 2: Microscopy with Ions - A brief history -- Chapter 3: Operating the Helium Ion Microscope -- Chapter 4: Ion –Solid Interactions and Image Formation -- Chapter 5: Charging and Damage -- Chapter 6: Microanalysis with the HIM -- Chapter 7: Ion Generated Damage -- Chapter 8: Working with other Ion beams -- Chapter 9: Patterning and Nanofabrication -- Conclusion -- Bibliography -- Appendix: iSE Yields, and IONiSE parameters for He+ excitation of Elements and Compounds -- Index. |
| Sommario/riassunto | Helium Ion Microscopy: Principles and Applications describes the theory and discusses the practical details of why scanning microscopes using beams of light ions – such as the Helium Ion Microscope (HIM) – are destined to become the imaging tools of choice for the 21st century. Topics covered include the principles, operation, and performance of the Gaseous Field Ion Source (GFIS), and a comparison of the optics of ion and electron beam microscopes including their operating conditions, resolution, and signal-to-noise performance. The physical principles of Ion-Induced Secondary Electron (iSE) generation by ions are discussed, and an extensive database of iSE yields for many elements and compounds as a function of incident ion species and its energy is included. Beam damage and charging are frequently |

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| | outcomes of ion beam irradiation, and techniques to minimize such problems are presented. In addition to imaging, ions beams can be used for the controlled deposition, or removal, of selected materials with nanometer precision. The techniques and conditions required for nanofabrication are discussed and demonstrated. Finally, the problem of performing chemical microanalysis with ion beams is considered. Low energy ions cannot generate X-ray emissions, so alternative techniques such as Rutherford Backscatter Imaging (RBI) or Secondary Ion Mass Spectrometry (SIMS) are examined. Serves as a concise but authoritative introduction to the latest innovation in scanning microscopy Compares ion and electron beams as options for microscopy Presents a detailed physical model of ion-solid interactions and signal generation Provides a detailed database of iSE yield behavior as a function of the target ion, element, and energy. |

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| Record Nr. | UNINA9910955440303321 |
| Autore | Harris James <1957-> |
| Titolo | Fractal architecture : organic design philosophy in theory and practice / / James Harris |
| Pubbl/distr/stampa | Albuquerque [N.M.], : University of New Mexico Press, 2012 |
| ISBN | 9781283741637<br>1283741636<br>9780826352026<br>0826352022 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (424 p.) |
| Disciplina | 704.9<br>704.9/49514742<br>720.1 |
| Soggetti | Geometry in architecture<br>Fractals |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Front Cover; Title Page; Copyright; Contents; Introduction; Part I: Man, |

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| | Nature, and Architecture; 1: The Journey from Mathematical Monsters to the Key to Nature's Structure; 2: The Human Desire for Nature; 3: Nature's Order and Its Architectural Embodiment; 4: Skyscraper Form and Its Fractal Derivative; Part II: Nature and Human Cognition; 5: Gestalt and the Wholeness of Fractal Structure; 6: Perception and Cognition of Natural Form; 7: The Universal Quality of Fractal Expression; 8: The Abstract Trajectory to the Fractal Modernist Form; Part III: Architecture from Nature<br>9: Nature's Generative Character10: Elements of Fractal Form; 11: The Fractal Confluence of Science and Art; 12: The Spectrum of Architecture's Relationship to Nature; Notes; Selected Bibliography; Index; Back Cover |
| Sommario/riassunto | In Fractal Architecture, architect James Harris presents a definitive, lavishly illustrated guide that explains both the "how" and "why" of incorporating fractal geometry into architectural design. |