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Nota di contenuto	Intro -- Metal Oxides for Next-Generation Optoelectronic, Photonic, and Photovoltaic Applications -- Copyright -- Contents -- Contributors -- Series editor biography -- Preface to the series -- Section A: Metal oxide-based transparent electronics -- Chapter 1: Optical transparency combined with electrical conductivity: Challenges and prospects -- Chapter outline -- 1. Introduction -- 2. Optical properties of metal oxides -- 2.1. SnO2 -- 2.2. CuO -- 2.3. ZnO -- 3. Electrical properties of metal oxides -- 3.1. SnO2 -- 3.2. CuO -- 3.3. ZnO -- 4. Application -- 4.1. Sensors -- 4.1.1. Carbon dioxide gas sensors -- 4.1.2. Carbon monoxide gas sensors -- 4.1.3. Oxygen gas sensors -- 4.1.4. Nitric oxide gas sensor -- 4.1.5. Ammonia gas sensors -- 4.1.6. Ozone gas sensors -- 4.2. Batteries -- 4.3. Solar cell -- 4.3.1. CuO solar cells -- 4.3.2. Binary heterojunction solar cells -- 4.3.3. Thin film solar cells -- 4.4. Antennas -- 4.5. Optoelectronic and electronics -- 5. Future challenges and aspects -- 6. Conclusion -- References -- Chapter 2: Transparent ceramics: The material of next generation -- Chapter outline -- 1. Introduction -- 2. What makes the ceramics transparent? -- 3. Classification of transparent ceramics --

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Sommario/riassunto

This comprehensive volume explores the diverse applications and properties of metal oxides in photonic and photovoltaic technologies. Edited by Ghenadii Korotcenkov, the book delves into the use of metal oxides in various advanced technologies, including thin-film structures, solar cells, biomedical applications, heterogeneous catalysis, and sensors for toxic chemicals. It also covers the synthesis, properties, and applications of specific metal oxides like titanium dioxide and cerium oxide. Aimed at researchers and practitioners in the fields of materials science and engineering, this book provides insights into the challenges and future prospects of metal oxide applications in technology and industry. The volume highlights the role of metal oxides in energy technologies, optics-based medical applications, and the development of non-volatile memory and polymer-metal oxide composites.

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""L. hookeri (Berger) Schwantes var. hookeri (1908)""

Sommario/riassunto

Chaque automne, les cailloux du désert sud-africain fleurissent...C'est en réalité la saison où se trahissent les lithops, ces stupéfiants petits caméléons végétaux, qui imitent à la perfection les roches environnantes.
