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Nota di contenuto	Mullite; Table of Contents; General introduction; List of Contributors; 1 Crystal Chemistry of Mullite and Related Phases; 1.1 The Mullite-type Family of Crystal Structures; 1.1.1 Introductory Remarks; 1.1.2 The Derivation of Mullite-type Crystal Structures; 1.1.3 Members of the Mullite-type Family of Crystal Structures; 1.1.3.1 Introduction; 1.1.3.2 MUL-II.1, P4(2)/mbc: Schafarzikite Group; 1.1.3.3 MUL-VI.11, P4(2)/mbc: Apuanite Group; 1.1.3.4 MUL-IV.12, Pbam: Bi(2)M(4)O(9) Group; 1.1.3.5 MUL-VIII.12, Pbam: Versiliaite Group; 1.1.3.6 MUL-VIII.2, Pbnm: Grandidierite Group 1.1.3.7 MUL-II.3, Pbam: Mullite Group 1.1.3.8 MUL-IV.31, Pnm: Andalusite Group; 1.1.3.9 MUL-VIII.31, P2(1)/n11: Olivenite Group; 1.1.3.10 MUL-IV.32, Pbnm: Sillimanite Group; 1.1.3.11 MUL-VIII.33, A2(1)am: A(9)B(2) Boron Aluminates; 1.1.3.12 MUL-IV.34, P2(1)2(1)2: Al(5)Ge(0.972)Pb(0.2)O(9.71) Phase; 1.1.3.13 MUL-VIII.34, P2(1)2(1)2(1): Mozartite Group; 1.1.3.14 MUL-XVI.351, A112/m: Boralsilite Group; 1.1.3.15 MUL-XXXII.352, P i: Werdingite Group; 1.2 The Real Structure of Mullite; 1.2.1 Introduction; 1.2.2 High-resolution Electron

Microscopy; 1.2.3 X-ray Investigation

1.2.4 Real-structure Determination Using Videographic Reconstruction and Simulation Techniques  
1.2.4.1 The Videographic Method; 1.2.4.2 Structure Variants of Mullite; 1.2.4.3 Two-dimensional Videographic Reconstructions; 1.2.4.4 Three-dimensional Videographic Simulations for 2/1- and 3/2-mullite; 1.2.4.5 Conclusions; 1.3 Foreign Cation Incorporation in Mullite; 1.3.1 Transition Metal Incorporation; 1.3.1.1 Titanium Incorporation; 1.3.1.2 Vanadium Incorporation; 1.3.1.3 Chromium Incorporation; 1.3.1.4 Manganese Incorporation; 1.3.1.5 Iron Incorporation; 1.3.1.6 Cobalt Incorporation  
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2.1 Mechanical Properties of Mullite

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Sommario/riassunto

The only book to provide a complete survey -- from the crystallographic fundamentals right up to recent high-tech applications in aerospace technology. Following a general introduction to the topic, the authors go on to cover the crystal chemistry of mullite and related phases, as well as its basic properties, phase equilibria and stability. One whole section is devoted to the synthesis and processing of mullite ceramics, while later ones cover mullite coatings, fibers and matrix composites. For materials scientists, solid state chemists and physicists, crystallographers and mineralogist

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