

1. Record Nr.	UNINA9910819844903321
Autore	Kuzminov IU. S (IUrii Sergeevich)
Titolo	Cubic zirconia and skull melting // Yu.S. Kuzminov, E.E. Lomonova and V.V. Osiko
Pubbl/distr/stampa	Cambridge, : Cambridge International Science Publishing, 2008
ISBN	1-282-05881-9 9786612058813 1-907343-63-6 1-904602-90-8
Descrizione fisica	xiv, 346 p. : ill
Altri autori (Persone)	LomonovaE. E (Elena Evgenevna) OsikoV. V
Disciplina	548.86
Soggetti	Induction heating Crystals
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- CONTENTS -- PREFACE -- INTRODUCTION -- 1. PHYSICAL FUNDAMENTALS OF MELTING IN A COLD CRUCIBLE -- 1.1. INDUCTION HEATING OF MATERIALS. DEVELOPMENT OF THEORY -- 1.2. PARAMETERS OF DIRECT HF HEATING OF THE MELT -- 1.3. THE MECHANISM OF MELTING OF DIELECTRICS BY THE HIGH-FREQUENCY FIELD -- 2. FORMATION AND TREATMENT OF THE MELT IN THE COLD CRUCIBLE -- 2.1. SPECIAL FEATURES OF HEATING MATTER IN THE COLD CRUCIBLE -- 2.2 STARTING HEATING -- 2.3. MAINTAINING THE MELT IN THE STATIONARY STATE -- 2.4 DISTRIBUTION OF TEMPERATURE IN THE MELT VOLUME -- 2.5. EFFECT OF POROSITY OF THE INITIAL MATERIAL ON MELTING CONDITIONS -- 3. MAIN SECTIONS OF EQUIPMENT FOR DIRECT RADIOFREQUENCY MELTING IN THE COLD CRUCIBLE -- 3.1. RADIOFREQUENCY GENERATORS. COLD CRUCIBLE -- 3.2. METHODS AND DEVICES FOR CONTROLLING AND REGULATING THE TEMPERATURE OF THE MELT -- 4. SYNTHESIS OF CRYSTALLISATION OF REFRACTORY MATERIALS IN THE COLD CRUCIBLE -- 4.1. THE COLD CRUCIBLE - EFFICIENT CHEMICAL REACTOR -- 4.2. PRODUCTION OF MOLTEN MULLITE -- 4.3. POLYCRYSTALLINE ELECTRICALLY

CONDUCTING CHROMITES OF YTTRIUM AND LANTHANUM -- 5.
GROWTH OF SINGLE CRYSTALS -- 5.1. GROWING CORUNDUM, RUBY
AND OTHER CRYSTALS, USING A SEED (THE CZOCHRALSKI METHOD) --
5.2. DIRECTIONAL SOLIDIFICATION OF THE MELT IN A COLD CRUCIBLE
-- 5.3. MODIFICATION OF THE PROCESS OF CRYSTALLISATION IN THE
COLD CRUCIBLE -- 6. PRODUCTION OF REFRACTORY AND SPECIAL
PURITY GLASSES -- 6.1. ELEMENTS OF GLASS PRODUCTION
TECHNOLOGY -- 6.2. OPTICAL HOMOGENEITY OF GLASS -- 6.3.
REFRACTORY GLASSES OF THE R_2O_3 - Al_2O_3 - SiO_2 SYSTEM ($R = Sc, Y,$
 La, Nd, Er) -- 7. A FAMILY OF CRYSTALS - FIANITES -- 7.1.
POLYMORPHISM AND THE STRUCTURE OF PHASES OF PURE ZIRCONIA --
7.2. PHASE DIAGRAM OF THE SYSTEM ZrO_2 - R_2O_3 (WHERE $R = Y, Eu, Gd,$
 Yb) -- 7.3. PRODUCTION OF FIANITES.
7.4. CRYSTAL CHEMISTRY OF THE CUBIC PHASE OF SOLID SOLUTIONS
BASED ON ZIRCONIA -- 7.5. DEFECTS IN THE STRUCTURE OF FIANITE
CRYSTALS -- 7.6. MECHANISMS OF FORMATION OF DEFECTS
INFIANITES -- 7.7. MECHANICAL STRESSES AND THERMAL ANNEALING
OF FIANITES -- 7.8. PHYSICOCHEMICAL AND MECHANICAL PROPERTIES
OF FIANITES -- 7.9. OPTICAL AND SPECTROSCOPIC PROPERTIES OF
FIANITES -- 7.10. ELECTROPHYSICAL, ACOUSTIC, ELASTIC AND
PHOTOELASTIC PROPERTIES OF FIANITES -- 7.11. JEWELLERY QUALITIES
OF THE FIANITES -- 8. PARTIALLY STABILISED ZIRCONIA (PSZ) CRYSTALS
-- 8.1. PHASE TRANSFORMATIONS IN CRYSTALS OF PARTIALLY
STABILISED ZIRCONIA -- 8.2. THE PHASE COMPOSITION OF THE
CRYSTALS OF PARTIALLY STABILISED ZIRCONIA -- 8.3. PRODUCTION OF
CRYSTALS OF PARTIALLY STABILISED ZIRCONIA -- 8.4. THE DOMAIN
STRUCTURE OF CRYSTALS OF PARTIALLY STABILISED ZIRCONIA -- 8.5.
THE MICROSTRUCTURE OF PARTIALLY STABILISED ZIRCONIA CRYSTALS
-- 8.6. THE MECHANICAL PROPERTIES OF CRYSTALS OF PARTIALLY
STABILISED ZIRCONIA -- 8.7. THE STRENGTH CHARACTERISTICS OF
CRYSTALS OF PARTIALLY STABILISED ZIRCONIA -- 8.8. CURRENT VIEWS
REGARDING THE MECHANISM OF HARDENING OF CRYSTALS OF
PARTIALLY STABILISED ZIRCONIA -- 8.9 MOST PROMISING AREAS OF
APPLICATION OF CRYSTALS OF PARTIALLY STABILISED ZIRCONIA -- 9.
C-OX CRYSTALS -- 9.1. PRODUCTION OF C-OX CRYSTALS -- 9.2. THE
SPECTROSCOPIC PROPERTIES OF C-OX CRYSTALS -- 9.3 EFFECT OF
ANNEALING ON THE VALENCE STATE OF COBALT IN THE ZrO_2 - Y_2O_3
CRYSTALS -- 9.4 USING C-OX CRYSTALS IN JEWELLERY INDUSTRY --
10. CONCLUSION.
