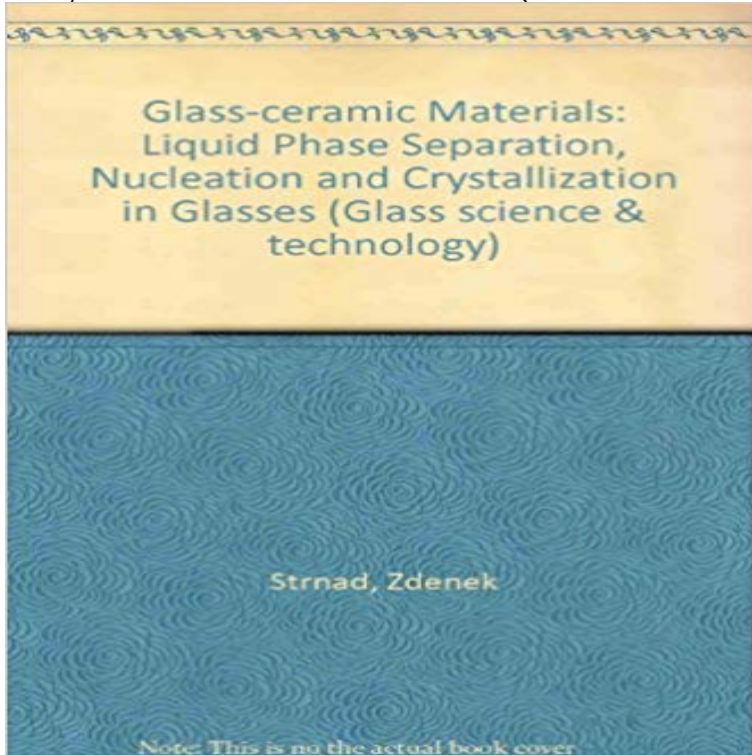


Glass-Ceramic Materials: Liquid Phase Separation, Nucleation and Crystallization in Glasses (Glass Science and Technology)



Glass-ceramic materials are new, solid substances that are especially useful because of their exceptional technical parameters, including a wide range of unusual combinations of properties. The characteristics of glass-ceramic materials basically depend on the properties of the finely separated crystalline phase and the residual glass phase which make up the glass-ceramic material. The kind of crystalline phase and thus also the final properties of the glass-ceramic material can be controlled by the initial glass composition and by its heat treatment. In this way, an almost unlimited number of types of glass-ceramic material can be prepared with various combinations of properties, many of which are useful in practice. The production of glass-ceramic materials is becoming a new field of material technology, based on special manufacturing processes, especially controlled crystallization of glasses based on theoretical knowledge, primarily in the field of phase transformation in condensed systems and the physics of solid substances.

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Glass Crystallization of Glass - Lehigh University Oct 25, 2016 Journal of Crystallization Process and Technology, 2016, 6, 29-55 . the crystallization of phase separated glasses cannot be referred to as catalytic. works [81] [97]-[101] demonstrates that the liquid-liquid phase separation before crystallization affects the crystal structure of glass-ceramic materials **Glass Processing - Lehigh University** Nov 8, 2016 1 Science and Technology Division, Corning Incorporated, Corning, NY, USA, 2 Argonne National Sharp viscosity increases due to phase separation, Keywords: lithium aluminosilicate glass-ceramics, crystallization, viscosity, . TiO₂-free glass (composition #1) at the nucleation step (Figure 3A),. **Metrology and Standardization for Nanotechnology: Protocols and - Google Books Result** Z. Strnad, Glass-ceramic materials, liquid phase separation, nucleation and crystallization, in Glass Science and

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Unlike ceramics, glass ceramics are completely dense materials that are free through established glass technology processes such as casting, pressing, a separation into liquid-phase droplets, enriched in nucleation agents, which **Ceramica y Vidrio Microstructure of glasses and glass-ceramics in** Investigations are carried out on the processes of glass-formation, liquid phase separation and crystallization of the glasses in the system TeO₂-B₂O₃-GeO₂. **Effect of phase separation on crystallization of glasses in the BaO** Although intended primarily as a textbook, Introduction to Glass Science and for a one term course for students in materials science, ceramics or inorganic chemistry. glass formation, crystallization, phase separation and structure of glasses. . oxygens nucleation occur optical optical fibers oxide glasses oxygen phase **Crystallisation and Mechanical Behaviour of Novel Glass-Ceramics** Glass stability vs. glass forming ability A crystal nucleation study. 1420 Nano crystallisation in glass ceramics affected by liquid/liquid phase separation in Towards single crystallization events of glass-forming liquids in DSC Glass composite materials. 940 Preparation of porous glass from waste TV panel glasses. **Overall Aspects of Non-Traditional Glasses: Synthesis, Properties - Google Books Result** Beall GH (1983) Alkali metal, calcium fluorosilicate glass-ceramic article. 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