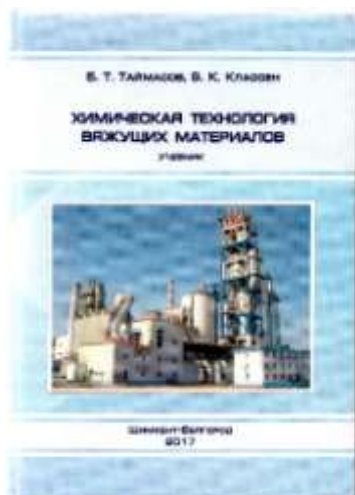


НОВЫЕ ИЗДАНИЯ



Б.Т. Таймасов Химическая технология вяжущих материалов: учебник / **Б.Т. Таймасов, В.К. Классен.** - 2-е изд. доп. – Бедгород: Изд-во БГТУ, 2017. – 448 с. ISBN 978-5-361-00521-5

В учебнике рассмотрены технологические процессы производства портландцемента, свойства сырьевых материалов, нетрадиционного сырья и добавок, способы дробления и помола сырьевых материалов и цемента; описаны современные методы усреднения, корректировки и расчета сырьевых смесей, процессы обжига клинкера во вращающихся печах сухого способа, устройство и работа дробилок-сушилок, циклонных теплообменников, декарбонизаторов и холодильников, способы повышения производительности печей и мельниц, снижения энергоемкости и интенсификации процесса обжига; изложены особенности гидратации и твердения портландцемента; освещены вопросы разрушения бетона и цементного камня под воздействием физической и химической коррозии; уделено внимание специальным видам цемента.

Учебник предназначен для студентов направлений подготовки бакалавров 18.03.01 – Химическая технология, 18.03.02 – Энерго- и ресурсосберегающие процессы в химической технологии, нефтехимии и биотехнологии.

ABSTRACTS OF PAPERS PUBLISHED IN ISSUE

Samchenko S.V. The role of processes in the synthesis of silicate compounds in the chemistry of cement

Samchenko S.V. Moscow State University of Civil Engineering (MGSU) National Research University

The transformation of raw mixtures into finished products in the chemical technology of silicates occurs with high-temperature processing of raw materials and is accompanied by complex chemical and physicochemical processes, such as solid-phase reactions and sintering processes, processes of crystallization and recrystallization of melts, solutions, etc. The importance of studying thermodynamics, mechanisms and kinetics of complex chemical and physico-chemical processes and the relevance of the theoretical study of the processes underlying the production of silicate materials and products of various technical purposes are reported. The principal possibility of controlling such processes during the burning of cement clinker, in the molding of articles of certain sizes and shapes from ceramic masses and during the cooking of glass, and also application of technological factors, allowing to influence their course are shown.

Keywords: solid-phase reactions, sintering processes, thermodynamics, silicate formation, synthesis

Sarkisov Y.S., Kozlova V.K., Bozhok E.V., Malova E.Y., Manoha A.M. The influence of carbonate additives on shrinkage deformations of cement stone

Sarkisov Y.S. Tomsk State University of Architecture and Building

Kozlova V.K., Bozhok E.V., Manoha A.M. Polzunov Altai State Technical University

Malova E.Y. AO «Iskitimt cement»

The authors give a full analysis of the causes of shrinkage deformations of cement stone in concrete. It is shown that the total amount of shrinkage deformations is composed of moisture and carbonation shrinkage, which is the result of carbon dioxide corrosion of cement stone. A method of forced carbonization is proposed to determine the value of carbonization shrinkage, it is shown that in the presence of carbonate additives Portland cement decreases the scale of carbonization shrinkage of cement stone. According to the authors, the cause of carbonation shrinkage during the service of cement stone are chemical reactions occurring during carbon dioxide corrosion and accompanied by the transfer of part of the chemically bound water to the free state.

Keywords: shrinkage deformation, carbonization shrinkage, carbon dioxide corrosion, carbonate additives, Portland cement, durability.

Zaharov A.I., Bezmenov A.I., Andreev D.V. Digital technologies in the production of ceramics

Zaharov A.I., Bezmenov A.I., Andreev D.V. Dmitry Mendeleev University of Chemical Technology of Russia

The article describes the characteristics of various types of digital technologies, including additive ones used in the production of ceramics. The classification of ceramic products according to the types and methods of molding is given. The prospects of using the described technologies are shown.

Keywords: ceramics, digital technologies, additive technologies, digital printing