

The “Gita” of Cement

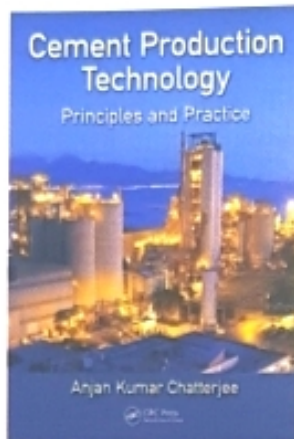
Shreesh Khadilkar, a veteran of cement chemistry, has reviewed a book by **Dr Anjan Chatterjee**, a grand-old scientist of the cement industry.

The book, “Cement Production Technology: Principles and Practice”, authored by Dr AK Chatterjee, is a comprehensive compendium of the entire aspects of cement manufacturing process. It reflects the author’s personal style and attitude of going into the basic intricacies of every aspect of cement manufacturing. It also reflects on the present trends and inclusions that have got embedded at the different stages of cement manufacture, while doing so the author makes it a point to reflect on future trends, innovative alternative concepts that are being looked at in this field so as to make the cement manufacturing more environment-friendly.

The book discusses in detail the pre-pyro-processing section – right from occurrence, mineralogy and mining concepts for limestone, use of correctives and the influence of the different chemico mineralogical and physico-mechanical characteristics of the material mixes on the burning ability, with indications on the pre-blending and blending systems and their influence of clinkerability and extent of clinker phase formations.

The characteristics of conventional solid, liquid and gaseous fuel including petcoke is discussed in detail referring the influence of fuels on the flame properties as well as on clinker quality. The present day usage of AFR is also been discussed. This includes their characteristics, pre-processing and co-processing aspects and its influence on pyro-processing condition in kilns as well as on clinker phase formation.

The book goes in details of the different types pre-heater and pre calciner systems, kiln burners and clinker coolers, so as to achieve to thermal and power efficiencies. The author also discusses in detail the next important aspect in cement manufacturing, i.e., refractories. The refractory materials of different types and for different temperature zones and their interactions with the clinkering mix (kiln fed), also contributed immensely to improvement in thermal efficiency



of the expanding cement manufacturing capacities.

The book covers the chemical-mineralogical characteristics of clinker, its impact on grindability and cement hydraulic potential, and it discusses in details the different clinker grinding and communication systems with improved efficacy of grinding with reduced power consumption, use of grinding aids and their further help in reduced grinding power consumption, as also the resultant beneficial improvements to cement

particle size distribution which resulted in immense improvements in application performance of the resultant cement. The book takes through the developments at each stage of cement manufacturing technology corroborating the advantages that were derived by the modern day Cements. In tune with Dr Chatterjee’s years of contribution in R&D and cement quality control and monitoring, the book discusses the different types of cements manufactured under national and international standards. It also discusses all the available quality assessment, quality monitoring and quality control systems being used in cement manufacturing, including the analysis and abatement techniques for dust emissions, reduction of nitrogen oxides by both primary and secondary techniques (for NOX the non catalytic and catalytic) have been covered in good details.

Considering that the book is authored by Dr Chatterjee it cannot be said to be completed if it does not cover the trends of R&D in cement manufacturing. He says, “the book is like “Google Assistant” for answering all the queries in cement manufacturing technology. If the book on ‘Cement Data Book by - Duda’ is termed as the Bible, then this book can be called as the “Gita” for cement. It is well-suited for beginners as well as the professionals.”



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