

Preface

Writing a book on the chemistry of cement and concrete is a very responsible task, and if we take into account very valuable works of Lea and principally of Taylor, even unusually responsible. His last book is of the highest value and, apart from its clear presentation of all important problems of cement chemistry, it contains a different and interesting Taylor's hypothesis, among others concerning the structure of C-S-H phase.

The progress in cement chemistry was particularly very quick in the last thirty years, principally because of the development of new methods and techniques, including the progress in scanning electron microscopy and introduction of some non-typical, quite new methods. To the latter ones I enclose the electrons Auger, which make possible to determine the superplasticizer layer on cement grains. In my book, I tried to present the maximum of interesting experimental results and linked them with hypotheses, leaving for the readers the last choice.

One of my goals was also to remind some scientists, which innovative works make possible the further development of cement chemistry and which were forgotten, particularly by young researches. A typical example is Professor Hans Kühl, who already in 1907 had established the accelerating effect of sodium hydroxide and of sulphate ions on the hardening of granulated blastfurnace slag. In 1908 H. Kühl obtained a German patent for the production of supersulphated cement, based on his discoveries. During the workshop " Ca(OH)_2 in Concrete" J. Gebauer reminded that the concrete from this cement, used to build the Beervlei Dam in South Africa, had after forty five years of exploitation the strength of 124 MPa. The most probable is that only "the lime saturation factor", which was also introduced by H. Kühl, is till now linked with his name.

The writing of this book would not be possible without numerous fruitful discussions with my friends, whom I present my warmest thanks. I owe particularly many to the discussions with the following professors: A. Bielański, H. F. W. Taylor, F. W. Locher, W. Wieker, and A. Małecki, as well as to Sorrentinos and to Mike George.

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I present my thanks to my young assistant Aleksandra Bochenek, who wrote the English version of all tables and figures, as well as text edition, and particularly the preparation of figures was a very laborious task.

I would like also to thank my former co-worker Barbara Trybalska for the beautiful scanning electron microscope photos that she took me when she worked with me in the AGH University of Science and Technology.

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