

**TEXT-BOOKS OF CHEMICAL
RESEARCH AND ENGINEERING.
AN
INTRODUCTION TO THE PHYSICS
AND CHEMISTRY OF COLLOIDS**

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Text-Books of Chemical Research and Engineering. An Introduction to the Physics and Chemistry of Colloids by Emil Hatschek

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EMIL HATSCHEK

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AN INTRODUCTION TO THE PHYSICS AND CHEMISTRY OF COLLOIDS

BY
EMIL HATSCHEK

Fourth Edition

Entirely Re-written and Enlarged

With 20 Illustrations

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PREFACE TO FOURTH EDITION

THE present edition has been entirely rewritten and, incidentally, enlarged. The changes made are partly the outcome of increased experience in teaching the subject, and partly caused by the inclusion of important recent work on fundamental aspects of the science. The literature up to the middle of the present year has been drawn upon, as far as it falls within the purview of the present book; references are given to such papers as have not found their way into the majority of text-books. At the same time the author has endeavoured to preserve the general character of the work.

As Laboratory Manuals of Colloid Chemistry are now available, the short appendix on experimental technique added to the third edition has been omitted.

EMIL HATSCHEK

LONDON, *October*, 1921.

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PREFACE TO FIRST EDITION.

THE present work is a slightly enlarged reprint of a series of articles published in *The Chemical World*, which in their turn were based on a course of ten lectures delivered at the Sir John Cass Technical Institute to students of very varied attainments and interested in every branch of chemistry and of chemical industry. The book accordingly does not aim at a completeness precluded alike by its compass and the extremely vigorous growth of the subject, but is only intended to introduce readers with a reasonable knowledge of physics and chemistry to the fundamental facts and methods of a branch of physical chemistry on the importance of which it is hardly necessary to insist.

Certain features in the selection of subjects and in the order of presenting them, which will be apparent to readers familiar with the existing literature, are due to a vivid recollection of the difficulties experienced by the author in his first studies, and the desire to spare the student as many of these as appear avoidable. Those desirous of ampler and more detailed information are referred to Wolfgang Ostwald's "Grundriss der Kolloidchemie" and H. Freundlich's "Kapillarchemie," English translations of which are urgently required.

EMIL HATSCHEK.

LONDON, 1913.

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