

PREFACE

The structural chemistry deals with the interpretation of the physico-chemical properties of the substances at molecular level. It relies upon the general chemistry, applies the results of the quantum chemistry and provides for the theoretical background for the evaluation of the results yielded by the instrumental measurements of the analytical and organic chemistries.

This lecture note is based on mathematics, especially on the differential, integral, vector and matrix calculus and on physics, especially on parts of electricity, magnetism and optics.

The aim of this course is to form a comprehensive conception about the structure of matter, about the methods of its investigation and description. This course deals with the theoretical backgrounds of the most important methods for the elucidation of the molecular structure, the theoretical set-up of the measuring systems and the principles of the interpretation of the results, surveys the different spectroscopic and diffraction methods. There is not possible, however, to deal with all these methods in detail since the period of the course is limited.

After a short introduction about the interaction of molecules and atoms with force fields the lecture note deals with the investigation and the description of the atoms and molecules.

This new edition is corrected and updated.

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Ferenc Billes