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PREFACE

THIS book continues with the plan originated by Lev Davidovich Landau and described in the Preface to Volume 1: to present the minimum of material in theoretical physics that should be familiar to every present-day physicist, working in no matter what branch of physics.

Part I, dealing with non-relativistic quantum theory, follows our *Quantum Mechanics* (Volume 3 of the *Course of Theoretical Physics*). This has been abridged by dropping completely some sections that are of interest only to specialists, as well as numerous details of technique that are intended for those whose profession lies in theoretical physics. This considerable abridgement has naturally meant rewriting a fairly large part of the book. I have nevertheless tried to keep unchanged the manner and style of the exposition, and in no place to allow a simplification by popularising; the only simplification is by the omission of detail. In Part I, the words "it can be shown" hardly occur: the results given are accompanied by their derivations.

This is, however, less true of Part II. The treatment here is based on the *Relativistic Quantum Theory* by Berestetskiĭ, Pitaevskiĭ and myself (Volume 4 of the *Course*), but only the fundamentals of quantum electrodynamics are presented. Here again I have sought to proceed in such a way as to show as clearly as possible the physical hypotheses and logical structure of the theory; but many applications of the theory are mentioned only by way of their results, on account of the frequent complexity of the calculations needed to solve specific problems in this field. In the choice of materials for Part II I have also been guided to some extent by the content of Landau's lectures