The authors were compelled to write this book by two main “drivers.” One was their wish to further endorse the strategic significance of the true fundamentals of Analytical Chemistry in order to help students first approaching this discipline to understand them and to erect their “analytical chemical building” on solid foundations.

Two opposite approaches to the teaching and learning of Analytical Chemistry in undergraduate curricula. The traditional, top-down approach, which goes from descriptions to fundamentals, leads to an unsteady building and to abilities prevailing over attitudes. On the other hand, the bottom-up approach, which is used in this book, goes from fundamentals to the description of methods and techniques in order to construct a solid, steady building that can be completed with further analytical chemical subjects.

The twofold primary aim of this book is to have students acquire a truthful image of Analytical Chemistry in order to develop abilities and attitudes that are consistent with the essence of the discipline, and to provide a firm background for addressing
other analytical chemical subjects (e.g., analytical separation systems, instrumental analysis).

Rather than to prepare the typical lectures for delivery in the classroom, this book requires teachers to contextualize concepts, emphasize especially relevant notions, support their messages with examples, and respond to students’ questions. This novel teaching approach certainly calls for some changes in lecturers’ traditional role.

The authors’ second “driver” for writing this book was their commitment to teaching innovation in a subject that is initially difficult to understand. For this reason, the book contains a large collection of animated PowerPoint slides that are individually explained with text and illustrated with many examples testifying to the roles of Analytical Chemistry in today’s world. This new teaching approach is expected to change the minds of those students who might initially be reluctant to be taught slide-driven lessons.

Because of its unusual teaching–learning standpoint, the preliminary sections of the book have been expanded with a technical introduction and a brief guideline for efficient use.

This book was previously released in Spanish by UCO Press (ISBN 978-84-9927-273-3) in January 2017. The authors are indebted to the publishing manager, Prof. Juan Pedro Monferrer Sala, for his support and help to have it released in English by Springer. Also, they wish to thank Antonio Losada, MSc, for his translation of the Spanish manuscript, and acknowledge the University of Córdoba for partial funding of the translation budget.

This book would never have been possible without the warm welcome and support of Dr. Steffen Pauly, Editorial Director of Springer.

Córdoba, Spain
April 2017

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Foundations of Analytical Chemistry
A Teaching-Learning Approach
Valcarcel Cases, M.; López Lorente, Á.I.; López Jiménez, M.Á.
2018, XVII, 487 p. 346 illus., 345 illus. in color. With online files/update., Hardcover
ISBN: 978-3-319-62871-4