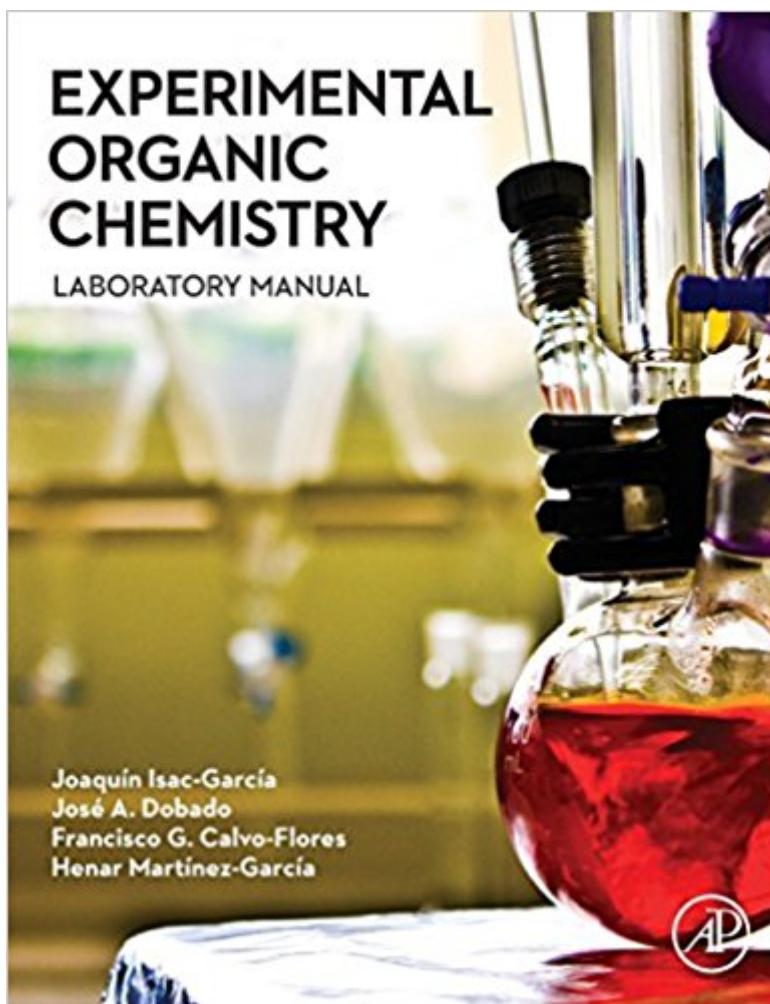


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# Experimental Organic Chemistry: Laboratory Manual



## Synopsis

Experimental Organic Chemistry: Laboratory Manual is designed as a primer to initiate students in Organic Chemistry laboratory work. Organic Chemistry is an eminently experimental science that is based on a well-established theoretical framework where the basic aspects are well established but at the same time are under constant development. Therefore, it is essential for future professionals to develop a strong background in the laboratory as soon as possible, forming good habits from the outset and developing the necessary skills to address the challenges of the experimental work. This book is divided into three parts. In the first, safety issues in laboratories are addressed, offering tips for keeping laboratory notebooks. In the second, the material, the main basic laboratory procedures, preparation of samples for different spectroscopic techniques, Microscale, Green Chemistry, and qualitative organic analysis are described. The third part consists of a collection of 84 experiments, divided into 5 modules and arranged according to complexity. The last two chapters are devoted to the practices at Microscale Synthesis and Green Chemistry, seeking alternatives to traditional Organic Chemistry. Organizes lab course coverage in a logical and useful way Features a valuable chapter on Green Chemistry Experiments Includes 84 experiments arranged according to increasing complexity

## Book Information

Paperback: 500 pages

Publisher: Academic Press; 1 edition (November 3, 2015)

Language: English

ISBN-10: 0128038934

ISBN-13: 978-0128038932

Product Dimensions: 8.5 x 1.1 x 10.9 inches

Shipping Weight: 3 pounds (View shipping rates and policies)

Average Customer Review: 4.0 out of 5 stars 1 customer review

Best Sellers Rank: #215,686 in Books (See Top 100 in Books) #25 in Books > Science & Math > Experiments, Instruments & Measurement > Scientific Instruments #309 in Books > Science & Math > Chemistry > Organic #924 in Books > Textbooks > Science & Mathematics > Chemistry

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Experimental Organic Chemistry: Laboratory Manual introduces students to organic chemistry laboratory work. Organic chemistry is an eminently experimental science based on a recognized

theoretical framework in which the basic aspects are well established but also under constant development. Therefore, it is essential for future professionals to develop a strong background in the organic chemistry laboratory, acquiring good habits from the outset and developing the necessary skills to address the challenges of such experimental work. The book covers topics including safety issues in laboratories; tips for keeping laboratory notebooks; basic laboratory equipment, material, and procedures; key physical and spectroscopic properties to characterize organic compounds and sample preparation; qualitative organic analysis for the main functional groups; setups for training students on basic operations; basic and advanced organic chemistry experiments; operations of a laboratory performed with Microscale equipment; a collection of experiments with Microscale techniques; and Green Chemistry principles and experiments. Microscale and Green Chemistry experiments are introduced as alternatives to traditional organic chemistry to provide more sustainable and less hazardous procedures in an undergraduate organic chemistry laboratory. Key features Organizes lab course coverage in a logical and useful wayFeatures a valuable chapter on Green Chemistry experimentsIncludes 100 experiments arranged according to increasing complexity Cover photo courtesy of Dr. Angel Sánchez González

Joaquín García Isac is an Associate Professor in the Department of Organic Chemistry at the University of Granada. José Antonio Jiménez Dobado received his PhD in Chemistry at the University of Granada in 1994. From 1995 to 1997, he was a postdoctoral fellow at Zurich University and Helsinki University. He joined the Department of Organic Chemistry at the University of Granada as a postdoctoral researcher from 1997 to 1998, Associate Professor from 1998 to 2002, and Professor since 2003. In that period, he spent also several months at McMaster University and Helsinki University. His area of research is in computational Chemistry, and he directs the Molecular Modelling and Design research group financed (FQM-174) by the Andalusian Government. Francisco García Calvo-Flores is a Professor of Organic Chemistry at the University of Granada. Henar Martínez García is in the Department of Organic Chemistry in the School of Industrial Engineering at the University of Valladolid.

Experimental Organic Chemistry: Laboratory Manual is a very fine, and reasonably priced, introduction to the techniques of organic chemistry, and contains a large number of experiments suitable to the sophomore level Organic Chemistry course, with a number of experiments at an advanced level that would be a fine accompaniment to upper level undergraduate and beginning

graduate courses in organic synthesis, green chemistry and polymer science. Microscale techniques and experiments are included, as well as traditional methods. This book would be a valuable resource for any organic chemistry sequence.

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