CONCEPTS AND METHODS OF 2D INFRARED SPECTROSCOPY

2D infrared (IR) spectroscopy is a cutting-edge technique, with applications in subjects as diverse as the energy sciences, biophysics and physical chemistry. This book introduces the essential concepts of 2D IR spectroscopy step-by-step to build an intuitive and in-depth understanding of the method.

Taking a unique approach, this book outlines the mathematical formalism in a simple manner, examines the design considerations for implementing the methods in the laboratory, and contains working computer code to simulate 2D IR spectra and exercises to illustrate the concepts involved. Readers will learn how to accurately interpret 2D IR spectra, design their own spectrometer and invent their own pulse sequences. It is an excellent starting point for graduate students and researchers new to this exciting field. Computer codes and answers to the exercises can be downloaded from the authors' website, available at www.cambridge.org/9781107000056.

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They specialize in using 2D IR spectroscopy to study molecular structures and dynamics.

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Dedicated to Robin M. Hochstrasser.

We appreciate the help of our students, postdoctoral researchers, colleagues, mentors and families.

Contents