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M.D. Fayer (ed): Ultrafast Infrared and Raman Spectroscopy

Practical spectroscopy series, volume 26, Marcel Dekker, Inc. New York, Basel, 2001, illustrations hardback, 656 pages, US\$ 199, ISBN 0-8247-0451-7

Published online: 7 March 2006
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Ultrafast (fs–ps) vibrational infrared and Raman spectroscopy has advanced in the last decades remarkably. New techniques and laser sources enable one nowadays to study growth and decay of individual complexes on a sub-picosecond time scale thus, offering access to a manifold of actual topics in chemistry, physics, and biology. Analogous to multidimensional NMR spectroscopy sequences of femtosecond infrared light pulses are used to excite vibrations in a mole-

cule. If a complex is formed or if it falls apart while the vibration remains excited, the frequency will shift giving rise to new cross-peaks in the 2-D IR spectra. The growth and decay of such cross-peaks reveal the lifetimes to form or to break apart the complex.

The book is a collection of contributions from experimentalists and theoreticians. It is highly recommended to everybody who is interested in the field of ultrafast infrared and Raman spectroscopy.