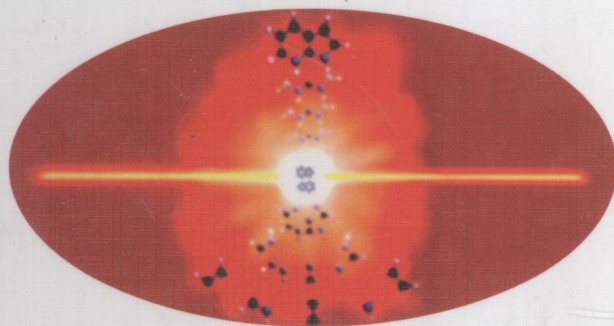


Femtochemistry VII

Fundamental Ultrafast Processes in Chemistry, Physics, and Biology

Edited by
A. Welford Castleman Jr. and Michele L. Kimble



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Edited by

A. Welford Castleman, Jr.
and
Michele L. Kimble

*Departments of Chemistry and Physics
Pennsylvania State University
University Park, PA 16802, USA*



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Fundamental Ultrafast Processes
in Chemistry, Physics, and Biology

PREFACE

About seventeen years ago, Femtochemistry emerged as a new and important field for the study, in real time, of the dynamics of chemical and biological reactions. Since then remarkable progress has been made and femtosecond spectroscopy devoted to Chemistry and Biology has become a well established field of research, giving rise to Femtochemistry and Femtobiology. In 1999, the scientific community was extremely delighted by the remarkable achievement in this field of research with the award of the Nobel Prize in Chemistry to Ahmed H. Zewail who pioneered the subject of Femtochemistry.

The significance of the field is recognized through its impact around the world, giving rise to numerous conferences and publications. The extensive activity and interest in the subject spawned one particular series of conferences devoted entirely to Femtochemistry which is now in its twelfth year. The first Femtochemistry Conference was organized by Jörn Manz and Ludger Wöste which took place in Berlin in March 1993. The success of the Berlin Conference and the rapid growth of Femtochemistry and Femtobiology gave rise to this series of Femtochemistry Conferences which has become a major one in this field of science. In the summer of the years 1995, 1997, and 1999, the second, the third and fourth Femtochemistry Conferences were organized, respectively, by Majed Chergui in Lausanne, Villy Sundstrom in Lund, and Franz de Schryver in Leuven. The contributions made in these conferences have crystallized in a series of books and Special Issues of the *Journal of Physical Chemistry*.

The first Femtochemistry Conference of the 21st century took place in Toledo, Spain during the period of September 2 – 6, 2001. The conference had some 250 participants from more than 30 countries, with a total of 45 lectures and 130 poster presentations in wide-ranging topics: gas phase, clusters, liquids, coherent control, new techniques, biological systems, polymers, nanostructures, surfaces and interfaces. The second Femtochemistry Conference of the 21st century took place in Paris, France during the period July 6 – 10, 2003. The conference had some 272 participants from more than 26 countries, with a total of 40 lectures and 157 poster presentation devoted to wide-ranging topics: hydrogen bond dynamics, coherent control of chemical reactions, reaction dynamics in isolated molecules, gas phase and clusters, protein dynamics, dynamics in conjugated polymers, molecular structural dynamics, primary chemical events in photobiology, surface reaction dynamics, DNA photodynamics, and reaction dynamics in liquids and solutions. We are delighted to have completed the third Femtochemistry Conference of the 21st century and are very excited to be holding this in the USA. Femtochemistry VII was held in Washington, DC, July 17 – 22, 2005 at the Fairmont Washington. This is the first time the Femtochemistry Conference series was held in the USA. The stimulating conference was opened by Professor Ahmed Zewail

(1999 Nobel Prize Winner), and as was evident by the attendees at the conference, we had a very active program with the presentation of numerous talks and a large number of posters. These covered subjects such as imaging, structural dynamics, and spectroscopies, fundamentals of reaction dynamics, solvation phenomena, liquids and interfaces, aggregates/particles/surfaces, protein dynamics and photobiology, quantum control, and intense laser – matter interactions. We are grateful to all speakers, chairpersons, presenters, and authors who provided stimulating contributions.

We would also like to acknowledge several individuals who helped in the organization of Femtochemistry VII. We first recognize Majed Chergui, Marcus Dantus, Abderrazzak Douhal, J. T. Hynes, Jörn Manz, Monique Martin, Franz de Schryver, Villy Sundström, Ludger Wöste, and Ahmed Zewail, members of the International Organizing Committee. Their suggestions helped in ensuring the quality of the program. We also appreciate the help of the local committee members, Nicholas J. Bianco, Daniel E. Blumling, Heide G. Castleman, Darren P. Hydutsky, Charles E. Jones, Jr., Kenneth L. Knappenberger, Jr., Scott G. Sayers, Mohamed A. Sobhy, and Nicole R. Stroud; their assistance helped make certain that everything ran smoothly. The work of the web designer and master, Clifton C. Castleman, is also greatly appreciated. We also express our sincere gratitude to Connie M. Smith, Administrative Assistant and Conference Coordinator. Her tireless efforts helped make Femtochemistry VII a great success.

Finally, we gratefully acknowledge financial support from the following Agencies, Companies, and Institutions: U. S. Air Force Office of Scientific Research, Coherent, Inc., U. S. Department of Energy, ELS Lasers, Elsevier B. V., IMRA America, Inc., Intense Light, Kapteyn-Murnana Laboratories, Inc., U. S. National Science Foundation Engineering Section, Ocean Optics, Inc., U. S. Office of Naval Research, Philip Morris USA, Pennsylvania State University – Eberly College of Science, Pennsylvania State University – Department of Chemistry, and Newport/Spectra-Physics.

A. W. Castleman, Jr.

Departments of Chemistry and Physics, Pennsylvania State University, Pennsylvania, USA

Michele L. Kimble

Department of Chemistry, Pennsylvania State University, Pennsylvania, USA

April 2006

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