
Preface

It is a great pleasure that we are now publishing the fourth volume of the series on PUILS, through which we have been introducing the progress in ultrafast intense laser science, the frontiers of which are rapidly expanding, thanks to the progress in ultrashort and high-power laser technologies. The interdisciplinary nature of this research field is attracting researchers with different expertise and backgrounds.

As in the previous volumes on PUILS, each chapter in the present volume, which is in the range of 15–25 pages, begins with an introduction in which a clear and concise account of the significance of the topic is given, followed by a description of the authors' most recent research results. All the chapters are peer-reviewed. The articles of this fourth volume cover a diverse range of the interdisciplinary research field, and the topics may be grouped into four categories: strong field ionization of atoms (Chaps. 1–2), excitation, ionization and fragmentation of molecules (Chaps. 3–5), nonlinear intense optical phenomena and attosecond pulses (Chaps. 6–8), and laser solid interactions and photoemissions (Chaps. 9–11).

From the third volume, the PUILS series has been edited in liaison with the activities of the JSPS Core-to-Core Program on Ultrafast Intense Laser Science (FY2004) and JILS (Japan Intense Light Field Science Society), which is now a sponsor organization responsible for the regular publication of the PUILS series. As described in the prefaces of the previous volumes, the PUILS series also collaborates with the annual symposium series of ISUILS (<http://www.isuils.jp>), designed to stimulate interdisciplinary discussion at the forefront of ultrafast intense laser science.

We would like to take this opportunity to thank all the authors who have kindly contributed to the PUILS series by describing their most recent work at the frontiers of ultrafast intense laser science. We also thank the reviewers who have read the submitted manuscripts carefully. One of the co-editors (KY) thanks Ms. Chie Sakuta and Maki Oyamada for their help with the editing processes. Last but not least, our gratitude goes out to Dr. Claus Ascheron, Physics Editor of Springer Verlag at Heidelberg, for his kind support.

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We hope this volume will convey the excitement of Ultrafast Intense Laser Science to the readers, and stimulate interdisciplinary interactions among researchers, thus paving the way to explorations of new frontiers.

University of Tokyo
University of Colorado
Chinese Academy of Sciences
Laval University
October, 2008

Kaoru Yamanouchi
Andreas Becker
Ruxin Li
See Leang Chin

Progress in Ultrafast Intense Laser Science
Volume IV

Becker, A.; Li, R.; Chin, S.L. (Eds.)

2009, XII, 266 p., Hardcover

ISBN: 978-3-540-69142-6