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# Progress in Ultrafast Intense Laser Science XIII

 Springer

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# Preface

We are pleased to present the thirteenth volume of Progress in Ultrafast Intense Laser Science. As the frontiers of ultrafast intense laser science rapidly expand ever outward, there continues to be a growing demand for an introduction to this interdisciplinary research field that is at once widely accessible and capable of delivering cutting-edge developments. Our series aims to respond to this call by providing a compilation of concise review-style articles written by researchers at the forefront of this research field, so that researchers with different backgrounds as well as graduate students can easily grasp the essential aspects.

As in previous volumes of PUILS, each chapter of this book begins with an introductory part, in which a clear and concise overview of the topic and its significance is given, and moves onto a description of the authors' most recent research results. All chapters are peer-reviewed. The articles of this thirteenth volume cover a diverse range of the interdisciplinary research field, and the topics may be grouped into four categories: atoms, molecules, and clusters interacting in an intense laser field (Chaps. 1–5); high-order harmonics generation and its applications (Chaps. 6 and 7); photoemission at metal tips (Chap. 8); and advanced laser facilities (Chaps. 9 and 10).

From the third volume, the PUILS series has been edited in liaison with the activities of the Center for Ultrafast Intense Laser Science at the University of Tokyo, which has also been responsible for sponsoring the series and making the regular publication of its volumes possible. From the fifth volume, the Consortium on Education and Research on Advanced Laser Science, the University of Tokyo, has joined this publication activity as one of the sponsoring programs. The series, designed to stimulate interdisciplinary discussion at the forefront of ultrafast intense laser science, has also collaborated since its inception with the annual symposium series of ISUILS (<http://www.isuils.jp/>), sponsored by JILS (Japan Intense Light Field Science Society).

We would like to take this opportunity to thank all of 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 coeditors (KY) thanks Ms. Mihoshi Abe

for her 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.

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.

Tokyo, Japan  
College Park, USA  
Jena, Germany  
January 2017

Kaoru Yamanouchi  
Wendell T. Hill III  
Gerhard G. Paulus

# Contents

<b>1</b>	<b>Strong-Field S-Matrix Series with Coulomb Wave Final State . . . .</b>	<b>1</b>
	F.H.M. Faisal	
1.1	Introduction . . . . .	1
1.2	Three-Interaction Formalism . . . . .	2
1.3	Coulomb–Volkov Hamiltonian and Propagator . . . . .	6
1.4	Coulomb-Volkov S-Matrix Series . . . . .	9
1.5	Strong-Field S-Matrix for Short-Range Potentials . . . . .	11
1.6	Concluding Remarks . . . . .	11
	References . . . . .	13
<b>2</b>	<b>Multiconfiguration Methods for Time-Dependent Many-Electron Dynamics . . . . .</b>	<b>15</b>
	Erik Lötstedt, Tsuyoshi Kato and Kaoru Yamanouchi	
2.1	Introduction . . . . .	15
2.2	Basics of Time-Dependent Multiconfiguration Methods . . . . .	17
2.3	Time-Dependent Multiconfiguration Methods with Time-Independent Orbitals . . . . .	21
2.3.1	Time-Dependent Configuration Interaction with Single Excitations . . . . .	22
2.3.2	Time-Dependent Restricted-Active-Space Configuration-Interaction . . . . .	23
2.3.3	Time-Dependent <i>R</i> -Matrix Theory . . . . .	25
2.4	Time-Dependent Multiconfiguration Methods with Time-Dependent Orbitals . . . . .	26
2.4.1	Multiconfiguration Time-Dependent Hartree-Fock . . . . .	28
2.4.2	Time-Dependent Complete Active-Space Self-Consistent Field . . . . .	31
2.5	Factorized CI . . . . .	32
2.6	Summary . . . . .	35
	References . . . . .	37

<b>3</b>	<b>Controlling Coherent Quantum Nuclear Dynamics in LiH by Ultra Short IR Atto Pulses</b> . . . . .	41
	Astrid Nikodem, R.D. Levine and F. Remacle	
3.1	Introduction . . . . .	42
3.2	Electronic Structure of LiH and Quantum Dynamics . . . . .	43
3.3	Control of the Fragmentation Yields in the $\Sigma$ Manifold by the CEP of Pulse . . . . .	49
3.4	Effect of the Non Adiabatic Coupling in the $\Sigma$ Manifold . . . . .	51
3.5	Probing the Dynamics for a Superposition of $\Sigma$ and $\Pi$ States by Transient Absorption . . . . .	54
3.6	Conclusions . . . . .	61
	References . . . . .	61
<b>4</b>	<b>Probing Multiple Molecular Orbitals in an Orthogonally Polarized Two-Color Laser Field</b> . . . . .	67
	Hyeok Yun, Hyung Taek Kim, Kyung Taec Kim and Chang Hee Nam	
4.1	Introduction . . . . .	68
4.2	Two-Dimensional High-Harmonic Spectroscopy of Molecules . . . . .	69
4.2.1	HHG in an Orthogonally Polarized Two-Color Field . . . . .	69
4.2.2	HHG from Linear Molecules . . . . .	72
4.3	Resolving High-Harmonics from Multiple Orbitals . . . . .	74
4.3.1	Qualitative Approach . . . . .	74
4.3.2	Theoretical Calculation . . . . .	76
4.3.3	Experimental Demonstration . . . . .	79
4.4	Conclusion . . . . .	82
	References . . . . .	83
<b>5</b>	<b>Tracing Nonlinear Cluster Dynamics Induced by Intense XUV, NIR and MIR Laser Pulses</b> . . . . .	85
	Bernd Schütte	
5.1	Introduction . . . . .	85
5.2	Ionization Dynamics of Clusters . . . . .	87
5.2.1	XUV Multistep Ionization of Clusters . . . . .	87
5.2.2	Controlled Ignition of NIR Avalanching in Clusters . . . . .	89
5.2.3	MIR Strong-Field Ionization of Clusters Using Two-Cycle Pulses . . . . .	92
5.3	Expansion and Recombination Dynamics of Clusters . . . . .	94
5.3.1	Cluster Fragmentation . . . . .	94
5.3.2	Frustrated Recombination . . . . .	96
5.3.3	Reionization of Excited Atoms from Recombination . . . . .	97
5.4	Autoionization and Correlated Electronic Decay . . . . .	101
5.4.1	Autoionization in Expanding Clusters . . . . .	102
5.4.2	Correlated Electronic Decay . . . . .	104



5.5	Summary	107
	References	108
<b>6</b>	<b>Molecules in Bichromatic Circularly Polarized Laser Pulses: Electron Recollision and Harmonic Generation</b>	111
	André D. Bandrauk, François Mauger and Kai-Jun Yuan	
6.1	Introduction	112
6.2	Bicircular Recollision Dynamics	114
6.3	Polarization of Molecular HHG	122
6.4	Conclusion	125
	References	127
<b>7</b>	<b>High Harmonic Phase Spectroscopy Using Long Wavelengths</b>	129
	Antoine Camper, Stephen B. Schoun, Pierre Agostini and Louis F. DiMauro	
7.1	Introduction	129
7.2	Reconstruction of the Attosecond Beating by Interference of Two-Photon Transitions	130
7.3	High Harmonic Spectroscopy of Argon Cooper Minimum	133
7.4	High Harmonic Spectroscopy of Aligned Nitrogen	137
7.5	Conclusion	141
	References	142
<b>8</b>	<b>Strong-Field-Assisted Measurement of Near-Fields and Coherent Control of Photoemission at Nanometric Metal Tips</b>	143
	M. Förster, T. Paschen, S. Thomas, M. Krüger and P. Hommelhoff	
8.1	Introduction	143
8.2	Experimental Setup	145
8.3	Measurement of the Field Enhancement Factor at the Tip Apex by Rescattering Electrons	146
8.4	Coherent Control of Photoemission	149
8.5	Summary and Outlook	153
	References	154
<b>9</b>	<b>Advanced Laser Facilities and Scientific Applications</b>	157
	Luis Roso	
9.1	Introduction	157
9.2	Different Approaches for a PW	160
9.3	Bottlenecks	163
9.4	Applications of PW Lasers	168
9.5	Hard Laser Light	172
9.6	Conclusions	176
9.7	Appendix: The VEGA Laser	177
	References	178

<b>10 The Extreme Light Infrastructure—Attosecond Light Pulse Source (ELI-ALPS) Project</b> . . . . .	181
Dimitris Charalambidis, Viktor Chikán, Eric Cormier, Péter Dombi, József András Fülöp, Csaba Janáky, Subhendu Kahaly, Mikhail Kalashnikov, Christos Kamperidis, Sergei Kühn, Franck Lepine, Anne L’Huillier, Rodrigo Lopez-Martens, Sudipta Mondal, Károly Osvay, László Óvári, Piotr Rudawski, Giuseppe Sansone, Paris Tzallas, Zoltán Várallyay and Katalin Varjú	
10.1 Introduction . . . . .	183
10.2 The Mission and Structure of ELI-ALPS . . . . .	184
10.3 Lasers . . . . .	185
10.3.1 The High Repetition Rate (HR) Laser System . . . . .	186
10.3.2 The Single-Cycle Laser System (SYLOS) . . . . .	187
10.3.3 The High-Field (HF) Laser System . . . . .	189
10.3.4 The MIR System . . . . .	191
10.4 Secondary Sources . . . . .	192
10.4.1 The GHHG Beamlines . . . . .	193
10.4.2 The Surface High Harmonic Generation (SHHG) Development Beamlines . . . . .	202
10.4.3 The THz Beamlines . . . . .	207
10.4.4 The Electron Acceleration Beamlines . . . . .	209
10.5 Research Perspectives . . . . .	211
10.6 Outlook . . . . .	214
References . . . . .	215
<b>Index</b> . . . . .	219

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