

Curriculum Vitae

Name: Maxim Sukharev
Position: Assistant Professor
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EDUCATION

- Department of High-Power Lasers, General Physics Institute of Russian Academy of Sciences, Moscow, Russia**
Ph.D. in Laser Physics (2000)
Advisor: Professor Mikhail V. Fedorov
Co-advisor: Professor Vladimir P. Krainov
Dissertation: “*Interactions between diatomic molecules, their ions and strong laser fields*”.
- Moscow Engineering Physics Institute, Moscow, Russia**
M.Sc. in Theoretical Physics (1997)
Advisor: Professor Vladimir P. Krainov
Thesis: “*Ionization and dissociation of H_2 in laser fields*”.

PROFESSIONAL EXPERIENCE

Year	Institution	Position
06/2011	CNRS Laboratory of Molecular Photophysics, University of Paris South XI, Orsay, France	Visiting Professor
10/2010 – present	Ira A. Fulton School of Electrical, Computer, and Energy Engineering, Arizona State University, Tempe	Graduate Faculty
09/2010 – present	Department of Applied Sciences and Mathematics, Arizona State University, Mesa	Physics Program Leader
10/2008 – present	Department of Physics, Arizona State University, Tempe	Graduate Faculty
08/2008 – present	Department of Applied Sciences and Mathematics, Arizona State University, Mesa	Assistant Professor

CURRENT RESEARCH PROJECTS

coherent control of light and matter; *ab initio* electrodynamics of quantum systems optically coupled to nanoscale materials; nonlinear nano-optics.

CURRENT COLLABORATORS

Michael Galperin (Department of Chemistry and Biochemistry, University of California at San Diego), John Ketterson (Department of Physics, Northwestern University), Abraham Nitzan (School of Chemistry, Tel Aviv University), John Weiner (Center for Nanoscale Science and Technology, NIST), Yehiam Prior and Adi Salomon (Department of Chemical Physics, Weizmann Institute of Science, Israel), Robert Gordon (University of Illinois at Chicago).

PROFESSIONAL PREPARATION

Department of Chemistry, Northwestern University, USA (07/10/2003 – 08/15/2008).

Position: Post-doctoral fellow
(advisor: Professor Tamar Seideman)

Research projects: optical control of classical and quantum systems in energy- and time-domains; active control of photochemical reactions and single molecules; nano-optics, plasmonics, coherent control of light via plasmon resonance; tip-enhanced Raman microscopy; plasmon

resonance assisted control of atoms and molecules; nonadiabatic processes in diatomic molecules embedded in matrices.

Methods: numerical simulations of quantum systems (solutions of time-independent and time-dependent Schrodinger equation on a grid using home-built parallel codes) and interaction of light with nanoscale structures (finite-difference time-domain method based on home-built parallel codes) on massive parallel computers (NERSC, SDSC, BlueGene/L at ANL).

Other activities: Supervising graduate and undergraduate students; mentoring high school teachers involved in the Research Experience for Teachers (RET) NSF program; development of visualization tools for National Center for Learning and Teaching (NCLT – <http://www.nclt.us>) and for NanoHUB project (<http://www.nanohub.org>).

Collaborations: Kenneth Spears (Department of Chemistry, Northwestern University), John Ketterson (Department of Physics, Northwestern University), Robert P. H. Chang (Materials Science and Engineering, Northwestern University), Dana Dlott (Department of Chemistry, University of Illinois at Urbana-Champaign), Markus Raschke (Department of Chemistry, University of Washington), John Weiner (Université Paul Sabatier, France), Philippe Lalanne (Laboratoire Charles Fabry de l'Institut d'Optique, CNRS, University Paris-Sud, France), Ron Naaman (Weizmann Institute, Israel), Yossi Paltiel (Soreq Nuclear Research Center, Israel).

CNRS Laboratory of Molecular Photophysics, University of Paris South XI, Orsay, France
(09/15/2001 – 01/15/2003).

Position: CNRS Post-doctoral fellow
(advisor: Professor Annick Suzor-Weiner)

Research projects: atoms and molecules in strong laser fields; single and double ionization; optimal control of atoms via shaped ultra-short laser pulses.

Methods: computer simulations of optimal control of double ionization of atoms in intense laser fields using genetic algorithms on parallel supercomputers (IDRIS NEC SX-5 cluster).

Collaborations: Gustav Gerber (Department of Physics, Wurzburg University, Germany), Mikhail V. Fedorov (Department of High-Power Lasers, General Physics Institute of Russian Academy of Sciences, Russia).

Fiber Optics Research Center at General Physics Institute of Russian Academy of Sciences, Moscow, Russia (10/1998 – 10/2001).

Position: Research Assistant/Postgraduate Student
(advisor: Professor Eugene M. Dianov)

Research projects: fiber optics; phenomenon of electrostriction and its influence on a data transmission in optical fiber lines.

Methods: model calculations of electromagnetic field propagation in fused silica, multi-ring optical fibers and acoustical response; utilization of High Performance FORTRAN for Linux Parallel Programming.

Collaborations: Corning Incorporated (USA), Daniel Nolan (Corning Inc., USA).

Department of High-Power Lasers - General Physics Institute of Russian Academy of Sciences, Moscow, Russia (04/1997 – 04/2000)

Position: Postgraduate Student
(advisor: Professor Mikhail V. Fedorov, co-advisor: Professor Vladimir P. Krainov)

Research project: interactions between molecular structures and intense laser fields; dissociative ionization and Coulomb explosion of diatomic molecules; orientation and alignment of linear molecules and their ions in an external electromagnetic field.

Methods: computer simulations of nuclear wave packet propagation in an external laser field; computer simulations of rotational wave packet creation; chaos dynamics of a nuclear subsystem of linear molecules.

Collaborations: Professor Nikolai Delone (General Physics Institute of Russian Academy of Sciences, Moscow, Russia).

TEACHING EXPERIENCE

Semester	Course	Number of students	Student evaluations (scale/mean)
Fall 2008	PHY101 "Introduction to Physics"	28	0-5 / 3.33
Fall 2008	PHY111 "General Physics"	75	0-5 / 3.96
Fall 2008	PHY111 "General Physics" recitation section	24	0-5 / 5.00
Spring 2009	PHY101 "Introduction to Physics"	29	0-5 / 4.20
Spring 2009	PHY111 "General Physics"	71	0-5 / 4.36
Fall 2009	PHY101 "Introduction to Physics"	53	0-5 / 4.19
Fall 2009	PHY111 "General Physics"	49	0-5 / 4.59
Spring 2010	PHY111 "General Physics"	96	0-5 / 4.35
Spring 2010	ABS489 "Mechanics of Biology"	2	0-5 / 5.00
Fall 2010	PHY101 "Introduction to Physics"	42	0-5 / 4.09
Fall 2010	PHY111 "General Physics"	104	0-5 / 4.38

MENTORING AND SUPERVISING

- Undergraduate student Derek Nasir, Department of Physics, Arizona State University (Fall 2011 – present). Projects: *optics of high Q-cavities strongly coupled to quantum media*.
- Undergraduate student Andrew Knapp, Department of Physics, Arizona State University (Spring 2011 – present). Projects: *parallel simulations of atomic clusters coupled to metal nanostructures*.
- Obama Scholar mentor – undergraduate student James Harris, Arizona State University at the Polytechnic Campus (Fall 2010).
- Obama Scholar mentor – undergraduate student Starr Worthy, Arizona State University at the Polytechnic Campus (Fall 2010).
- Undergraduate student Thomas Nagy, Department of Mechanical and Manufacturing Engineering Technology, College of Technology and Innovation, Arizona State University at the Polytechnic Campus (Spring 2009 – present). Projects: *optics of subwavelength gratings, new parallel schemes for FDTD*.
- Graduate student Qiushi Mou, Department of Physics, Arizona State University, Tempe (Summer 2010) – research rotation project. Projects: *nonlinear optics of atomic clusters near metal interface*. Qiushi successfully passed his qualifying exam.
- Graduate student Yanan Zhao, Department of Physics, Arizona State University, Tempe (Spring 2009) – research rotation project. Projects: *classical dynamics of atoms near metal surfaces*.
- Undergraduate student Anton Bashnev, Department of Mechanical and Manufacturing Engineering Technology, College of Technology and Innovation, Arizona State University at the Polytechnic Campus (Fall 2008). Projects: *general theory of electrodynamics*.

- Undergraduate student Margaret Stucky, Department of Mechanical and Manufacturing Engineering Technology, College of Technology and Innovation, Arizona State University at the Polytechnic Campus (Fall 2008). Projects: *general theory of electrodynamics*.
- Graduate student Matt Reuter, Department of Chemistry, Northwestern University (2007-2008). Projects: *nonadiabatic alignment of organic molecules influenced by metal tips*. This work resulted in publication (see item 27 in Publication List).
- Undergraduate student Joseph Yelk, Department of Physics and Astronomy, Northwestern University (2005 – 2008). Projects: *optimal control of light at the nanoscale*. This work resulted in publication (see item 26 in Publication List). Joseph was admitted to Graduate School at University of Colorado at Boulder.
- Mentoring high school teachers via the Research Experience for Teachers (RET) NSF program (summer 2006, summer 2007).

HONORS AND AWARDS

- Department of Energy Innovative and Novel Computational Impact on Theory and Experiment (INCITE) award (2007).
- The French Ministry of Research Postdoctoral fellowship (2001 – 2002).
- Soros Postgraduate Student (2000).

EDITORSHIP AND ADVISORY

- Section editor: *Nano-optical devices* in *Encyclopedia of Nanotechnology*, Springer (tentative publication date October 2011).
- Proposal reviewer: NASA (2 proposals, 2009/2011), NSF (4 proposals, 2010/2011).
- Referee: Journal of Chemical Physics; Journal of Optics A: Pure and Applied Optics; Optics Express; Optics Letters; Physical Review A/B; Physical Review B; New Journal of Physics.

WORKSHOP AND CONFERENCE ORGANIZATION

- Organizing Committee Member, *Workshop on Nano-Optics, Plasmonics, and Advanced Materials*, Center for Nanoscale Science and Technology at NIST, Gaithersburg, Maryland, April 19 – 22, 2010.

PRESS RELEASES

- “*Step in line*”, Research Highlights, Nature Photonics, Vol. 3, January 2009, p. 5.
- “*Numerical Approach Guides Light in the Nanoscale*”, Argonne Leadership Computing Facilities, Project Highlights
http://www.alcf.anl.gov/collaborations/projects/control_light.php
- “*INCITE Allocation Helps Achieve Coherent Control of Light in Nanoscale Devices*”, ASCR DOE computing news roundup, September 2007:
<http://www.er.doe.gov/ascr/News/MonthlyNewsRoundup9-07.html>
- “*Toward Coherent Control in the Nanoscale*”, Tamar Seideman, 2physics.com, June 2007.
<http://2physics.blogspot.com/2007/06/toward-coherent-control-in-nanoscale.html>
- “*Tiny spheres could control light*”, Belle Dumé, Physicsweb.org, June 2007.
<http://physicsweb.org/articles/news/11/6/7/1>
- “*Nanoparticle arrays control light*”, Belle Dumé, Nanotechweb.org, June 2007.
<http://nanotechweb.org/articles/news/6/6/11/1>
- “*Guiding light in the nanoscale via nanoparticle arrays*”, Michael Berger, Nanowerk, March 2006.
<http://www.nanowerk.com/spotlight/spotid=318.php>

INVITED TALKS

- “*Electrodynamics of quantum many-body systems optically coupled to plasmonic materials*”, invited seminar, ISMO at University Paris South XI, Orsay, France, June 10, 2011.
- “*Computational nano-optics: parallel simulations and beyond*”, plenary lecture, Center for Nanoscience and Nanotechnology, National University of Mexico, Ensenada, Mexico, February 23 – 25, 2011.
- “*Optics at the nanoscale: computational studies*”, invited seminar, Seagate Technology, Research Division, Bloomington, Minnesota, February 4, 2011.
- “*Ab initio electrodynamics of multi-level media optically coupled to metal nanostructures*”, the Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, January 2 – 6, 2011.
- “*Ab initio description of spatiotemporal dynamics of multi-level atoms resonantly coupled to plasmonic materials*”, 2010 NanoBiophotonics Summer School, University of Illinois at Urbana-Champaign, June, 2010.
- “*Computational aspects of nano-optics*”, Department of Physics and Astronomy, Western Kentucky University, April 12, 2010.
- “*Optimal design of advanced plasmonic materials for nano-optics optics*”, 2009 NanoBiophotonics Summer School, University of Illinois at Urbana-Champaign, June, 2009.
- “*Optimal design of advanced plasmonic materials for subwavelength optics*”, Nanotechnology Program Seminar Series, Stevens Institute of Technology, Hoboken, February 11, 2009.
- “*Optics at the nanoscale: coherent control of light and matter beyond the diffraction limit*”, Nanoscale Science Seminar, Department of Physics, Arizona State University, Tempe, September 22, 2008.
- “*Optics at the nanoscale: coherent control of light and matter beyond the diffraction limit*”, lecture, Department of Chemistry, Loyola University, Chicago, March 27, 2008.
- “*Plasmon resonance assisted manipulation of light in nanoscale*”, colloquium, Department of Physics and Astronomy, Western Kentucky University, April 30, 2007.
- “*Plasmon resonance assisted manipulation of light in nanoscale*”, The Frederick Seitz Materials Research Laboratory Seminar, University of Illinois at Urbana-Champaign, March 1, 2007.
- “*Optics of nanomaterials: coherent and optimal control of light in nanoscale*”, colloquium, Department of Physics and Astronomy, Northwestern University, August 11, 2006.
- “*Applications of phase, polarization and optimal control techniques in nanoplasmonics*”, Field and Optics Seminar, School of Electrical and Computer Engineering, Purdue University, April 28, 2006.

CONTRIBUTED TALKS

18. Oral presentation: “*Ab initio spatiotemporal dynamics of atoms resonantly coupled to plasmonic materials*”, **Nano-optics Plasmonics Conference**, National Institute of Standards and Technology, Gaithersburg, April 22, 2010.
17. Oral presentation: “Perfect coupling of light to surface plasmons with ultra-narrow linewidths”, **APS meeting**, Pittsburgh, March, 2009.
16. Poster presentation: “Genetic Algorithms as a multi-parameter design tool for plasmonic devices”, **Gordon Research Conference: Quantum Control of Light and Matter**, Salve Regina University, Newport RI, USA, August 12 – 17, 2007.
15. Poster presentation: “Coherent and Optimal Control of Light at the Nanoscale”, **Gordon Research Conference: Quantum Control of Light and Matter**, Salve Regina University, Newport RI, USA, August 12 – 17, 2007.

14. Oral presentation: “Coherent control of light via plasmon resonance in nanoscale”, **13th International Conference on Unconventional Photoactive Systems**, Northwestern University, Evanston, IL, USA, August 5 – 9, 2007.
13. Oral presentation (hot topic): “Applications of phase, polarization and optimal control techniques in nanoplasmonics”, **Gordon Research Conference “Multiphoton processes”**, Tilton School, NH, USA, June 11 – 16, 2006.
12. Oral presentation: “Applications of phase, polarization and optimal control techniques in nanoplasmonics”, **SPIE International Conference “Physics and Simulation of Optoelectronic Devices XIV”**, San Jose, CA, USA, January 21 – 26, 2006.
11. Poster presentation: “Phase, polarization and optimal control as a route to the new types of plasmonic nanodevices”, **Gordon Research Conference: “Quantum control of light and matter”**, Colby College, Maine, USA, July 31 – August 5, 2005.
10. Poster presentation: “Optimal control of internal conversion of polyatomic molecules”, **Gordon Research Conference: “Multiphoton processes”**, Tilton School, New Hampshire, USA, June 13 – 18, 2004.
9. Oral presentation: “A coherent control approach to suppression of radiationless transitions”, **Building computational devices using coherent control**, University of Michigan, Ann Arbor, USA, June 7 – 9, 2004.
8. Poster presentation: “Quantum control of double ionization of Calcium”, DPG-Schule für Physik: **Optimal Femtosecond Laser Control of Microscopic Dynamics**, Bad Honnef, Germany, September 22 – 27, 2002.
7. Poster presentation: “Quantum control of single versus double ionization of Calcium”, **ICTCP IV**, France, July 10 – 15, 2002.
6. Oral presentation: (Post Deadline Paper) “Quantum control of single versus double ionization of Calcium”, **International Quantum Electronics Conference**, Moscow, Russia, June 22 – 28, 2002.
5. Oral presentation: “Stabilization of H_2^+ with respect to photodissociation by a strong laser field”, **International Quantum Electronics Conference**, Moscow, Russia, June 22 – 28, 2002.
4. Oral presentation: “Strong-Field Interference Stabilization in Molecules”, **10th International Laser Physics Workshop**, Moscow, Russia, July 3 – 7, 2001.
3. Oral presentation: “Electrostriction-induced acoustic response in single-mode ring-index profile fibers with larger than $100\ \mu m^2$ effective mode area”, **European Conference on Optical Communications**, Munich, Germany, September 4 – 7 2000.
2. Oral presentation: (Post Deadline Paper) “Electrostrictive response in single-mode ring-index profile with large effective mode area”, **Optical Fiber Communications**, Baltimore, USA, 2000.
1. Poster presentation: “Vibration, rotation and dissociation of molecular ions in a strong laser field”, **7th International Laser Physics Workshop**, Berlin, Germany, July 6 – 10, 1998.

PUBLICATION LIST^{*}

INVITED BOOK CHAPTERS

2. “Finite-difference time-domain technique”, **M. Sukharev**¹, in Encyclopedia of Nanotechnology, Section on Nano-optical Devices (accepted, Springer, tentative publication date October 2011).
1. “Plasmonics: towards a new paradigm for light manipulation at the nanoscale”, **M. Sukharev**¹, in “Nanobiophotonics”, ed. G. Popescu, (ISBN 978-0-07-173701-2, McGraw-Hill, 2010).

SUBMITTED PAPERS

1. “Numerical studies of the interaction of an atomic sample with the electromagnetic field in two dimensions”, **M. Sukharev**¹ and A. Nitzan, *Physical Review A* (submitted, 2011).

PUBLISHED AND ACCEPTED PAPERS

36. “Light-induced current in molecular junctions: local field and non-Markov effects”, B. D. Fainberg, **M. Sukharev**¹, T.-H. Park, and M. Galperin, *Physical Review B* **83**, 205425 (2011).
35. “Physics of nano-optics spur sophisticated models”, **M. Sukharev**¹, *Laser Focus World Magazine* **47**, 39 (2011).
34. “Surface-enhanced Raman scattering from silver-coated opals”, W. Mu, D.-Q. Hwang, R. P. H. Chang, **M. Sukharev**¹, D. B. Tice, and J. B. Ketterson, *Journal of Chemical Physics* **134**, 124312 (2011).
33. “Computational Nano-optics: parallel simulations and beyond”, **M. Sukharev**¹, *Optics and Photonics News* **22**, 29 – 33 (2011).
32. “Transport and optical response of molecular junctions driven by surface plasmon-polaritons”, **M. Sukharev**¹ and M. Galperin, *Physical Review B* **81**, 165307 (2010).
31. “One-dimensional long-range plasmonic-photonic structures”, W. Mu, D. B. Buchholz, **M. Sukharev**¹, J. Jang, R. P. H. Chang, J. B. Ketterson, *Optics Letters* **35**, 550 (2010).
30. “Nonadiabatic photodissociation dynamics of F₂ in solid Ar”, **M. Sukharev**¹, A. Cohen, R. B. Gerber, T. Seideman, invited paper *Laser Physics* **19**, 1651 (2009).
29. “Perfect coupling of light to surface plasmons with ultra-narrow linewidths”, **M. Sukharev**¹, P. R. Sievert, T. Seideman, J. B. Ketterson, *Journal of Chemical Physics* **131**, 034708 (2009).
28. “Optical properties of metal tips for tip-enhanced spectroscopies”, **M. Sukharev**¹ and T. Seideman, invited paper *Journal of Physical Chemistry A* **113**, 7508 (2009).
27. “Laser field alignment of organic molecules on semiconductor surfaces: toward ultra-fast molecular switches”, M. G. Reuter, **M. Sukharev**², T. Seideman, *Physical Review Letters* **101**, 208303 (2008).

^{*} *There is no conventional agreement in the optics research community as to in what particular order authors are arranged. However, my relative contribution in all published papers can be arranged in three major categories: 1 – major theoretical contribution; 2 – major theoretical contribution with a mentored student/postdoc; 3 – major theoretical contribution under guidance of an advisor. Each paper below has one of these three indicators shown as a superscript (for example - **M. Sukharev**¹).*

26. "Optimal design of nanoplasmonic materials using genetic algorithms as a multi-parameter optimization tool", J. Yelk, **M. Sukharev**^{2,3}, T. Seideman, *Journal of Chemical Physics* **129**, 064706 (2008).
25. "Nanoparticle spectroscopy: birefringence in 2D arrays of L-shaped silver nanoparticles", J. Sung, **M. Sukharev**¹, E. M. Hicks, R. P. Van Duyne, T. Seideman, K. G. Spears, *Journal of Physical Chemistry C* **112**, 3252 (2008).
24. "Optical properties of metal nanoparticles with no center of inversion symmetry: observation of volume plasmons", **M. Sukharev**¹, J. Sung, K. G. Spears, T. Seideman, *Physical Review B* **76**, 184302 (2007).
23. "Numerical analysis of a slit-groove diffraction problem", M. Besbes, J.P. Hugonin, P. Lalanne, S. van Haver, O. T. A. Jansse, A.M. Nugrowati, M. Xu, S. F. Pereira, H. P. Urbach, A. S. van de Nes, P. Bienstman, G. Granet, S. Helfert, **M. Sukharev**¹, T. Seideman, F. I. Baida, B. Guizal, D. Van Labeke, *Journal of the European Optical Society: Rapid Publications* **2**, 07022 (2007).
22. "Light trapping and guidance in plasmonic nanocrystals", **M. Sukharev**³ and T. Seideman, *Journal of Chemical Physics* **126**, 204702 (2007).
21. "Coherent Control of Light Propagation via Nanoparticle Arrays", **M. Sukharev**³ and T. Seideman, invited paper, *Journal of Physics B: Atomic, Molecular & Optical Physics* **40**, S283 (2007).
20. "Surface quality and surface waves on subwavelength-structured silver films", G. Gay, O. Alloschery, J. Weiner, H. J. Lezec, C. O'Dwyer, **M. Sukharev**¹, T. Seideman, *Physical Review E* **75**, 016612 (2007).
19. "The response of nanostructured surfaces in the near field", G. Gay, O. Alloschery, J. Weiner, H. J. Lezec, C. O'Dwyer, **M. Sukharev**¹, T. Seideman, *Nature Physics*, **2**, 792 (2006).
18. "Coherent Control Approaches to light guidance in the nanoscale", **M. Sukharev**³, T. Seideman, *Journal of Chemical Physics*, **124**, 144707 (2006).
17. "Phase and Polarization Control as a Route to Plasmonics Nanodevices", **M. Sukharev**³, T. Seideman, *Nanoletters*, **6**, 715 (2006).
16. "Optical control of nonradiative decay in polyatomic molecules", **M. Sukharev**³, T. Seideman, *Physical Review A*, **71**, 012509 (2005).
15. "Optimal Control Approach to Suppression of Radiationless Transitions", **M. Sukharev**³, T. Seideman, *Physical Review Letters*, **93**, 093004 (2004).
14. "Influence of electron correlations on strong field ionization of calcium", E. Charron, **M. Sukharev**³, A. Suzor-Weiner, *Laser Physics Letters*, **1**, 18 (2004).
13. "Approximations of adiabatic elimination of the continuum for the calculation of photodissociation in intense laser fields", **M. E. Sukharev**³, E. Charron, A. Suzor-Weiner, M. V. Fedorov, *International Journal of Quantum Chemistry*, **99**, 452 (2004).
12. "Enhancement of Strong-Field Two-Electron Ionization", **M. Sukharev**³, E. Charron, A. Suzor-Weiner, *Laser Physics*, **13**, 484 (2003).
11. "Excitation of sound waves upon propagation of laser pulses in optical fibers" (invited paper), A. S. Biriukov, **M. E. Sukharev**¹, E. M. Dianov, *Quantum Electronics*, **32**, 765 (2002).
10. "Quantum control of double ionization of calcium", **M. Sukharev**³, E. Charron, A. Suzor-Weiner, *Physical Review A*, **66**, 053407 (2002).
9. "Interference stabilization of molecules with respect to photodissociation by a strong laser field", **M. E. Sukharev**³, M.V. Fedorov, *Physical Review A*, **65**, 033419 (2002).
8. "Strong-Field Interference Stabilization in Molecules", **M. E. Sukharev**³, M.V. Fedorov, *Laser Physics*, **12**, 491 (2002).

7. "Population effects in high-order harmonic generation by the hydrogen molecular ion in a strong laser field", **M. E. Sukharev**³ and V. P. Krainov, *Physical Review A*, **62**, 033404 (2000).
6. "Electrostrictive response in single-mode ring-index-profile fibers", E. M. Dianov, **M. E. Sukharev**³, A. S. Biriukov, *Optics Letters*, **25**, 390 (2000).
5. "Vibration, rotation, and dissociation of molecular ions in a strong laser field", **M. E. Sukharev**³ and V. P. Krainov, *Journal of Optical Society of America B*, **15**, 2201 (1998).
4. "Rotation and alignment of diatomic molecules and their molecular ions in strong laser field", **M. E. Sukharev**³ and V. P. Krainov, *Journal of Experimental and Theoretical Physics*, **86**, 318 (1998).
3. "Dissociation of hydrogen and deuterium molecular ions by strong low-frequency laser field", **M. E. Sukharev**³ and V. P. Krainov, *Laser Physics*, **7**, 803 (1997).
2. "Field-Dependent Franck-Condon Factors for the Ionization of Molecular Hydrogen and Deuterium", **M. E. Sukharev**³ and V. P. Krainov, *Laser Physics*, **7**, 323 (1997).
1. "Franck-Condon factors for the ionization of hydrogen and deuterium molecules in laser fields", **M. E. Sukharev**³ and V. P. Krainov, *Journal of Experimental and Theoretical Physics* **83**, 457 (1996).

CONFERENCE PROCEEDINGS

4. "Phase-Polarization Control as a Route to Plasmonics Nanodevices", **M. Sukharev**³, T. Seideman, *Proceedings of SPIE*, **6115**, 611517 (2006).
3. "Electrostriction-induced acoustic response in single-mode ring-index profile fibers with larger than $100\mu\text{m}^2$ effective mode area", Y. Jaouën, E. M. Dianov, L. du Mouza, A. S. Biriukov, **M. E. Sukharev**³, G. Debarge, P. Nouchi, and L. A. de Montmorillon, *Proceedings of European Conference of Optical Communication 2000*, **3**, 95 (2000).
2. "Electrostrictive response in single-mode ring-index-profile fibers", E. M. Dianov, **M. E. Sukharev**³, A. S. Biriukov, *Proceedings of SPIE*, **4083**, 23 (2000).
1. "Electrostrictive response in single-mode ring-index profile with large effective mode area", E. M. Dianov, **M. E. Sukharev**³, and A. S. Biriukov, *IEEE Proceedings (Optical Fiber Communication Conference 2000)*, paper ThR5-1, **3**, 264 (2000).