Marcos Dantus

Curriculum Vitae

Department of Chemistry and Department of Physics and Astronomy,
Michigan State University, East Lansing, MI 48824-1322
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Personal Information

Born in Mexico, US-citizen, Security clearance

Education

Postdoc California Institute of Technology (1991-1993) Advisor: Ahmed H. Zewail
Development of an ultrafast electron diffraction technique for real-time structural studies of chemical reactions
Ph.D. Chemistry, California Institute of Technology (1991) Advisor: Ahmed H. Zewail
Femtosecond Transition-State Spectroscopy of Chemical Reactions" Cited in Chemistry Nobel Prize 1999
B.A. & M.A. Chemistry, Brandeis University (1985), Magna Cum Laude

Professional Experience

Professor, Department of Chemistry, Michigan State University (2002 – present)
Adjunct Professor, Department of Physics and Astronomy, Michigan State University (2001 – present)
Associate Professor, Department of Chemistry, Michigan State University (1999 – 2002)
Assistant Professor, Department of Chemistry, Michigan State University (1993 – 1999)
Postdoctoral Research Fellow, California Institute of Technology (1991 – 1993)
Research and Teacher Assistant, California Institute of Technology (1985 – 1991)

Entrepreneurial Experience

Chairman of the Board and Chief Technology Officer, Biophotonic Solutions Inc. (2013 – present)
Founder, President and CEO, Biophotonic Solutions Inc. (2003 – 2013)
Director of Research and Development for Total Power Inc. (1998 – present)
Founder and member of the Board of Directors, KTM Industries Inc. (1998 – 2004)

Honors

2015 Elected Fellow of the National Academy of Inventors
2014 Elected Fellow of the American Physical Society
2014 Elected Fellow of the Optical Society of America
2013 Inventor of the Year Award, Michigan State University
2012 CLEO/Laser Focus World Innovation Award Winner, for development of femtoAdaptiv
2009 PhAST/Laser Focus World Innovation Award Winner, for development of femtoFit
2008 University Distinguished Faculty Award, Michigan State University
2007 Laser Focus World Commendation for Excellence in Technical Communications
2007 PhAST/Laser Focus World Innovation Award Honorable Mention, for development of MIIPS
2006 College of Natural Sciences Distinguished Faculty Award, Michigan State University
1998 Camille Dreyfus Teacher-Scholar Award
1998 Alfred P. Sloan Research Fellow
1996 Eli Lilly Teaching Fellowship
1995 Packard Fellowship for Science and Engineering
1995 Beckman Young Investigator Award
1994 General Electric Foundation Faculty Award
1993 Camille and Henry Dreyfus New Faculty Award
1992 Nobel Laureate Signature Award for Graduate Education in Chemistry
1991 Milton and Francis Clauser Doctoral Prize, California Institute of Technology
1991 The Herbert Newby McCoy Award, California Institute of Technology
1985 Melvin M. Snider Prize in Chemistry, Brandeis University
1985 Phi Beta Kappa, Brandeis University

Professional Affiliations

Fellow of the National Academy of Inventors (NAI), Fellow of the Optical Society of America (OSA); Fellow of the American Physical Society (APS); member of the American Chemical Society (ACS); Phi Beta Kappa

Professional Activities

Invited presentation at the Spatially Precise Optogenetics at Depth Incubator Meeting, BRAIN initiative sponsored by OSA and NSF, Washington DC, December 2013
Invited presentation at the DARPA Workshop Program in Ultrafast Laser Science and Engineering (PULSE) 2012
Invited presentation Committee of Atomic Molecular and Optical Sciences, National Research Council 2012
Member of the Editorial Board of the Journal for Raman Spectroscopy, October 2010-present
Member of the Advisory Editorial Board of Chemical Physics Letters, September 2007-December 2013
Member of the Board of Advisors for the Journal of Physical Chemistry, January 2006-
NSF "broader impacts" in science, award showcased at the ACS National Meeting, Washington DC 2005
President of Phi Beta Kappa, Epsilon Chapter of Michigan, Michigan State University 2004
Member of the Ultrafast Dynamics Committee, IQEC-2004, San Francisco, CA 2004
Member of the Steering Committee, Ultrafast x-ray science 2004, San Diego, CA 2004
Invited Speaker at the DARPA Workshop on Arbitrary Waveform Generation, Washington DC, 2004
Vice-President of Phi Beta Kappa, Epsilon Chapter of Michigan, Michigan State University 2003
Invited Scientists for the Scientist Helping America Conference, by DARPA and USSOCOM, 2002
Plenary Speaker, 8th International Workshop on Femtosecond Technology, Tsukuba, Japan, 2001
Featured in the ACS 125th Anniversary Issue of Chemical and Engineering News, 2001

Funding

Past and current funding at various times from NSF, DOE, ACS, AFOSR, ARO, DHS, NIH, Michigan Economic Development Fund, Sloan Foundation, Dreyfus Foundation, Packard Foundation.

Publication Summary

>196 publications
>7186 citations (Google Scholar)
Hirsch index 47 (47 publications with >47 citations, Google Scholar)
i10-index 121 (121 publications with >10 citations, Google Scholar)

Patent Summary

>22 issued, >10 pending US and international patents
> 47 invention disclosures

POSTDOCTORAL FELLOWS* AND GRADUATE STUDENTS:

J. G. Stanley, T. Yang, M. Gilchrist, P. Cid Aguero*, U. Marvet, M. J. Waner, Q. Zhang*, I. Pastirk, E. J. Brown, M. Comstock, B. I. Grimberg*, V. V. Lozovoy*, E. Sudachenko, V. Senekerymian, J. Dela Cruz, B. Xu, M. Kangas, J. Gunn, T. Gunaratne*, D. A. Harris*, Y. Coello, X. Zhu, L. Weisel, C. Kalcic, P.Wrzesinski, P. Xi*, Y. Andegeko*, D. Pestov*, Y. Coello, T. Goswami*, S. Archipov*, A. van Rhijin*, B. Nie, A. Konar, I. Saytashev, A. Ryabtsev, G. Rasskazov, J. Shah, M. Bremer, O. Yue, Muath Nairat, Richa Mittal, Rachel Glenn

UNDERGRADUATES STUDENTS:

Michael C. Machczynski, Brent Kaufman, Katherine Walowicz, George Schoendorff, Robin Sloan, Matthew Penniman, Andrew Mackert, Victoria Sanocki, Phillip Grabowski, Joseph Schoendorff, Ross Eames, Tudor Simeonov, Matt Haflein, Nate Kaiser, Robert Darrow, Janelle Shane, Melinda Ewald, Mario Camhi, Leida J. Vanoss, Laura Schelhas, Rebekah M. Martin, Daniel Schlam, Scott H. High, Kyle Sprague, Nelson S. Winkler, Jocob P. Bell, Michael R. Mendoza, Marie Kaniecki, Travis Boersma, Sagar Rathod (high school), Greg Parker (high school), Stephanie V Higgins, Kasey A Worst, Simone Merendi, Megan Rick, Cara Barber, Nathan Johnson

Marcos Dantus Intellectual Property Portfolio as of November 1, 2014

Issued Patents

	PAT. NO.	Title
1	8,861,075	Laser amplification system
2	8,675,699	Laser pulse synthesis (MICS)
3	8,633,437	Ultra-fast laser system (BPS-Raman)
4	8,630,322	Laser system for output manipulation (MIIPS-S)
5	8,618,470	Laser based identification of molecular characteristics (enantiomer detection)
6	8,311,069	Direct ultrashort laser system (simplified MIIPS)
7	8,300,669	Control system and apparatus for use with ultra-fast laser (MIIPS pre-Amp)
8	8,265,110	Laser and environmental monitoring method
9	8,208,505	Laser system employing harmonic generation
10	8,208,504	Laser pulse shaping system
11	8,185,209	Methods to extend vision to infrared wavelengths
12	7,973,936	Control system and apparatus for use with ultra-fast laser
13	7,609,731	Laser system using ultra-short laser pulses
15	7,583,710	Laser and environmental monitoring system
16	7,567,596	Control system and apparatus for use with ultra-fast laser
17	7,450,618	Laser system using ultrashort laser pulses
18	7,439,497	Control system and apparatus for use with laser excitation and ionization
19	7,105,811	Control system and apparatus for use with laser excitation of ionization
20	6,119,567	Method and apparatus for producing a shaped article
21	EP1,723,704	Laser system using ultra-short laser pulses (Europe)
22	JP60048	Laser system using ultra-short laser pulses (Japan)

Pending US Patent Applications

	PUB. APP. NO.	Title
1	20140058367	ADAPTIVE LASER SYSTEM FOR OPHTHALMIC USE
2	20120147911	DIRECT ULTRASHORT LASER SYSTEM
3	20120076504	LASER AMPLIFICATION SYSTEM
4	20110211600	LASER SYSTEM FOR OUTPUT MANIPULATION
5	20100187208	LASER PULSE SYNTHESIS SYSTEM
6	20100123075	ULTRAFAST LASER SYSTEM FOR BIOLOGICAL MASS SPECTROMETRY
7	20090296744	Laser Based Identification of Molecular Characteristics
8	20090257464	CONTROL SYSTEM AND APPARATUS FOR USE WITH ULTRA-FAST LASER
9	20090256071	LASER AND ENVIRONMENTAL MONITORING METHOD
10	20090238222	LASER SYSTEM EMPLOYING HARMONIC GENERATION
11	20090216299	System for Low-Level Laser Radiation
12	20090207869	LASER PLASMONIC SYSTEM
13	20090188901	Laser Material Processing System
14	20090122819	Laser Pulse Shaping System
15	20080170218	Ultra-Fast Laser System
16	20060187974	Control system and apparatus for use with ultra-fast laser
17	20060056468	Control system and apparatus for use with ultra-fast laser
18	20050232317	Control system and apparatus for use with laser excitation and ionization
19	20050021243	Laser and environmental monitoring system
20	20040233944	Laser system using ultra-short laser pulses

21	20040089804	Control system and apparatus for use with laser excitation or ionization
22	20030099264	Laser system using ultrashort laser pulses

Pending International Patent Applications

	Ctr		Title	Appl.No
1	WO	WO/2012/135073	ADAPTIVE LASER SYSTEM FOR OPHTHALMIC USE	PCT/US2012/030476
2	EP	2341587	LASER SYSTEM using ultrashort LASER pulses	11158256
3	WO	WO/2010/141128	HIGH PEAK INTENSITY LASER AMPLIFICATION SYSTEM AND ASSOCIATED METHOD	PCT/US2010/025564
4	EP	2232653	PHASE CONTROL IN ultrashort LASER SYSTEMS BY A DEFORMABLE MIRROR IN THE STRETCHER	8867550
5	EP	2211430	LASER autocorrelation SYSTEM	10151433
6	EP	2089767	LASER SYSTEM EMPLOYING HARMONIC GENERATION	7862112
7	WO	WO/2009/086122	CONTROL IN ultrashort LASER SYSTEMS BY A DEFORMABLE MIRROR IN THE STRETCHER	PCT/US2008/087707
8	EP	1957959	LASER BASED IDENTIFICATION OF MOLECULAR CHARACTERISTICS	6838573
9	WO	WO/2008/063602	LASER SYSTEM EMPLOYING HARMONIC GENERATION	PCT/US2007/024171
10	EP	1905060	CONTROL SYSTEM AND APPARATUS FOR USE WITH ULTRA-FAST LASER	6786531
11	WO	WO/2008/011059	LASER PLASMONIC SYSTEM	PCT/US2007/016274
12	WO	WO/2007/145702	LASER MATERIAL PROCESSING SYSTEMS AND METHODS WITH, IN PARTICULAR, USE OF A HOLLOW WAVEGUIDE FOR BROADENING THE BANDWIDTH OF THE PULSE ABOVE 20 NM	PCT/US2007/008878
13	EP	1851532	ULTRA-FAST LASER SYSTEM	6735004
14	WO	WO/2007/064703	LASER BASED IDENTIFICATION OF MOLECULAR CHARACTERISTICS	PCT/US2006/045686
15	EP	1782452	LASER AND ENVIRONMENTAL MONITORING SYSTEM	5858023
16	WO	WO/2007/028119	CONTROL SYSTEM AND APPARATUS FOR USE WITH ULTRA-FAST LASER	PCT/US2006/034408
17	WO	WO/2007/008615	CONTROL SYSTEM AND APPARATUS FOR USE WITH ULTRA-FAST LASER	PCT/US2006/026406
18	WO	WO/2007/001308	LASER AND ENVIRONMENTAL MONITORING SYSTEM	PCT/US2005/023353
19	EP	1723704	LASER SYSTEM using ULTRA-SHORT LASER pulses	5723597
20	WO	WO/2006/108093	A SYSTEM FOR LOW-LEVEL LASER RADIATION	PCT/US2006/012793
21	WO	WO/2006/088841	ULTRA-FAST LASER SYSTEM	PCT/US2006/005129
22	WO	WO/2005/088783	LASER SYSTEM using ULTRA-SHORT LASER pulses	PCT/US2005/005784
23	EP	1556930	LASER SYSTEM using ultrashort LASER pulses	3759690
24	WO	WO/2004/034524	LASER SYSTEM using ultrashort LASER pulses	PCT/US2003/031374

Marcos Dantus

25	WO	WO/2002/061799	CONTROL SYSTEM AND APPARATUS FOR USE WITH LASER EXCITATION OR IONIZATION	PCT/US2002/002548

M. Dantus Publications

199. I. Saytashev, B. Xu, M.T. Bremer, and M. Dantus, "Simultaneous Selective Two-Photon Microscopy Using MHz Rate Pulse Shaping and Quadrature Detection of the Time-Multiplexed Signal," Ultrafast Phenomena XIX, K. Yamanouchi et al., Eds. (Springer Proceedings in Physics 162, 2015).

198. B. Nie, I. Saytashev, and M. Dantus, "Towards a Compact Fiber Laser for Multimodal Imaging," Ultrafast Phenomena XIX, K. Yamanouchi et al., Eds. (Springer Proceedings in Physics 162, 2015).

197. A. Konar, V.V. Lozovoy, and M. Dantus, "Solvent Environment Revealed by Positively Chirped Pulses," Ultrafast Phenomena XIX, K. Yamanouchi et al., Eds. (Springer Proceedings in Physics 162, 2015).

196. A. Konar, Y. Shu, V.V. Lozovoy, J.E. Jackson, B.G. Levine, and M. Dantus, "Polyatomic Molecules under Intense Femtosecond Laser Irradiation," J. Phys. Chem. A, Feature Article **118**, 11433-11450 (2014).

195. A. Ryabtsev, S. Pouya, M. Koochesfahani, and M. Dantus, "Vortices in the wake of a femtosecond laser filament," Optics Express 22, 26098-26102 (2014).

194. M. Dantus and K. Monro, "Ultrafast Temporal Shaping Is Coming of Age," Biophotonics **21,** 24-28 (2014).

193. S. Pouya, A. Van Rhijn, M. Dantus, M. Koochesfahani, "Multi-photon molecular tagging velocimetry with femtosecond excitation (FemtoMTV)," Experiments in Fluids 55 (2014).

192. I. Saytashev, and M. Dantus "Multimodal Imaging of highly pigmented tissues," in Biomedical Optics 2014, OSA Technical Digest, paper BT3A.18 (2014).

191. G. Rasskazov, A. Ryabtsev, V.V. Lozovoy and M. Dantus, "Laser-induced dispersion control," Optics Letters 39 (2014).

190. H. Liu; W. Renninger; B. Nie; M. Dantus; F. Yu; J. Knight; A. Chong; F. Wise "High-power femtosecond fiber lasers based on self-similar pulse evolution," Proc. SPIE 9136, Nonlinear Optics and Its Applications VIII; and Quantum Optics III, 91360W (2014).

189. B. Nie, I. Saytashev, and M. Dantus "Towards a compact fiber laser for multimodal imaging," Proc. SPIE 8948, 89480A (2014).

188. I. Saytashev, B. Xu, M.T. Bremer and M. Dantus "Simultaneous selective two-photon microscopy using MHz rate pulse shaping and quadrature detection of the time-multiplexed signal," Proc. SPIE 8948, 89482F (2014).

187. A. Konar, V.V. Lozovoy, and M. Dantus, "Electronic dephasing of molecules in solution measured by nonlinear spectral inteferometry," J. Spectrosc. Dyn. 4 (2014).

186. A. Konar, V.V. Lozovoy, and M. Dantus, "Solvent Environment Revealed by Positively Chirped Pulses," J. Phys. Chem. Lett. 5, 924–928 (2014).

185. D. Pestov, A. Ryabtsev, G. Rasskazov, V.V. Lozovoy, and M. Dantus, "Real-time single-shot measurement and correction of pulse phase and amplitude for ultrafast lasers," Opt. Eng. 53, 051511 (2014).

M. Dantus Publications

184. M. Dantus and C.L. Kalcic, "Ultrafast Ionization and Fragmentation: From Small Molecules to Proteomic Analysis", Ultrafast Phenomena in Molecular Sciences, R. Nalda and L. Banares, Eds. (Springer Series in Chemical Physics 107, 2014) p. 171-201

183. R.M. Bowman, M. Dantus, A.H. Zewail, Jennifer L. Herek, "Historical perspective on: Femtosecond transition-state spectroscopy of iodine—From strongly bound to repulsive surface dynamics", Chem Phys Lett 589, 42-45 (2013).

182. B. Nie, G.Parker, V.V.Lozovoy and M. Dantus, "Energy scaling of Yb fiber oscillator producing clusters of femtosecond pulses", Optical Engineering **53**, 051505 (2013).

181. A. Ryabtsev, B. Nie and M. Dantus, "45 fs optical pulses from phase corrected broadband cascaded four wave mixing products ", Laser Phys. Lett. **10**, 125109 (2013).

180. M. T. Bremer and M. Dantus, "Standoff explosives trace detection and imaging by selective stimulated Raman scattering", Appl. Phys. Lett. **103**, 061119 (2013).

179. G. Rasskazov, A. Ryabtsev, D. Pestov, B. Nie, V.V. Lozovoy and M. Dantus, "Anomalous laser-induced group velocity dispersion in fused silica", Optics Express **21**, 17695-17700 (2013).

178. A. Konar, J.-D. Shah, V.-V. Lozovoy and M. Dantus, "Optical response of fluorescent molecules studied by synthetic femtosecond laser pulses", XVIIIth International Conference on Ultrafast Phenomena **41**, 07017 (2013).

177. D. Pestov, G. Rasskazov, A. Ryabtsev, I. Pastirk and M. Dantus, "Shaper-based approach to real-time correction of ultrashort pulse phase drifts and transient pulse dispersion measurements", XVIIIth International Conference on Ultrafast Phenomena **41**, 11007 (2013).

176. A. Konar, V. V. Lozovoy and M. Dantus, "Solvation Stokes-Shift Dynamics Studied by Chirped Femtosecond Laser Pulses", Journal of Physical Chemistry Letters **3**, 2458–2464 (2012).

175. O. Yue, M. Bremer, D. Pestov, J. R. Gord, S. Roy, and M. Dantus, "Gas Phase Thermometry via Multi-Time-to-Frequency Mapping of Coherence Dephasing", J. Phys. Chem. A **116**, 8138–8141, (2012)

174. B. Nie, I. Saytashev, A. Chong, H. Liu, S. Arkhipov, F. Wise and M. Dantus "Multimodal microscopy with sub-30 fs Yb fiber laser oscillator", Biomedical Optics Express **3**, 1750-1756 (2012).

173. I. Saytashev, S. Arkhipov, N. Winkler, K. Zuraski, V. V. Lozovoy and M. Dantus "Pulse duration and energy dependence of photodamage and lethality induced by femtosecond near infrared laser pulses in D. melanogaster", Journal of Photochemistry and Photobiology B: Biology **115**, 42–50 (2012).

172. I. Saytashev, B. Nie, A. Chong, H. Liu, S. Arkhipov, F. Wise and M. Dantus "Multiphoton imaging with sub-30 fs Yb fiber laser", Proc. SPIE **8226**, 82261I (2012).

171. M. Bremer, V. V. Lozovoy and M. Dantus "Nondestructive detection and imaging of trace chemicals with high-chemical specificity using single-beam coherent anti-stokes Raman scattering in a standoff configuration", Proc. SPIE **8358**, 835818 (2012).

M. Dantus Publications

170. Chong, A.; Liu, H.; Nie, B.; Gale, B.G.; Wabnitz, S.; Renninger, W.H.; Dantus, M.; Wise, F. W.;"Pulse generation without gain-bandwidth limitation in a laser with self-similar evolution", Optics Express **20**, 14213-14220 (2012).

169. A. Konar, J. Shah, V. V. Lozovoy and M. Dantus, "Optical Response of Fluorescent Molecules Studied by Synthetic Femtosecond Laser Pulses", Journal of Physical Chemistry Letters **3**, 1329–1335 (2012).

168. C. Kalcic, G. Reid, V. V. Lozovoy and M. Dantus, "Mechanism Elucidation for Nonstochastic Femtosecond Laser-Induced Ionization/Dissociation: From Amino Acids to Peptides", Journal of Physical Chemistry A **116**, 2764-2774 (2012).

167. Pestov, D.; Xu, B.; Li, H.; Dantus, M.; "Delivery and characterization of sub-8fs laser pulses at the imaging plane of a two-photon microscope", Proc. SPIE **7903**, 79033B (2011).

166. Nie, B.; Pestov, D.; Wise, F. W.; Dantus, M.; "An Ultrafast Fiber Laser with Self-Similar Evolution in the Gain Segment", Optics and Photonics News **22**, 47 (2011).

165. P. Devi, V. V. Lozovoy and M. Dantus, "Measurement of Group Velocity Dispersion of Solvents Using 2-cycle Femtosecond Pulses: Experiment and Theory", AIP Advances **1**, 032166 (2011).

164. M. Bremer, P. Wrzesinski, N. Butcher, V. V. Lozovoy and M. Dantus, "Highly Selective Standoff Detection and Imaging of Trace Chemicals in a Complex Background using Single-Beam Coherent Anti-Stokes Raman Scattering", Applied Physics Letters **99**, 101109 (2011).

163. Nie, B.; Pestov, D.; Wise, F. W.; Dantus, M.; "Generation of 42-fs and 10-nJ pulses from a fiber laser with self-similar evolution in the gain segment", Optics Express **19**, 12074-12080 (2011).

162. P. Wrzesinski, D. Pestov, V. V. Lozovoy, J. R. Gord, M. Dantus, and S. Roy, "Group-velocity-dispersion measurements of atmospheric and combustion-related gases using an ultrabroadband-laser source ", Optics Express **19**, 5163-5170 (2011)

161. P. Wrzesinski, D. Pestov, V. V. Lozovoy, B. Xu, S. Roy, J. R. Gord, and M. Dantus, "Binary phase shaping for selective single-beam CARS spectroscopy and imaging of gas-phase molecules", J. Raman Spec. **42**, 393-398 (2011)

160. Christian W. Freudiger, Wei Min, Gary R. Holtom, Bingwei Xu, Marcos Dantus and X. Sunney Xie "Highly specific label-free molecular imaging with spectrally tailored excitation-stimulated Raman scattering (STE-SRS) microscopy", Nature Photonics **5**, 103–109 (2011).

159. A. Palumbo, S. Smith, C. Kalcic, M. Dantus, P. Stemmer and G. Reid "Tandem Mass Spectrometry Strategies for Phosphorproteome Analysis", Mass Spectrometry Reviews **30**, 600-625 (2011).

158. X. Zhu, V. V. Lozovoy, J. D. Shah and M. Dantus, "Photodissociation dynamics of acetophenone and its derivatives with intense nonresonant femtosecond pulses," J. Phys. Chem. A **115**, 1305–1312 (2011).

157. P. Wrzesinski, D. Pestov, V. V. Lozovoy, S. Roy, J. R. Gord and M. Dantus "Single-beam CARS Imaging for Reacting Flow Diagnostics" Optics and Photonics News **21**, 49 (2010).

M. Dantus Publications

156. S. Smith, C. Kalcic, K. Safran, P. Stemmer, M. Dantus, and G. Reid "Enhanced Characterization of Singly Protonated Phosphopeptide Ions by Femtosecond Laser-induced Ionization/Dissociation Tandem Mass Spectrometry (fs-LID-MS/MS)", Journal of the American Society for Mass Spectrometry **12**, 2031-2040 (2010).

155. X. Zhu, C. Kalcic, N. Winkler, V. V. Lozovoy, and M. Dantus, "Applications of Femtochemistry to Proteomic and Metabolomic Analysis", J. Phys. Chem. A, **114**, 10380–10387 (2010).

154. D. Pestov, Y. Andegeko, V. V. Lozovoy and M. Dantus, "Photobleaching and photoenhancement of endogenous fluorescence observed in two-photon microscopy with broadband laser sources", J. Opt. **12**, 084006 (2010).

153. D. Pestov, Y. Andegeko, V. V. Lozovoy and M. Dantus, "Pulse shaping for reducing photodamage in multiphoton microscopy," Proc. SPIE **7569**, 756926 (2010); doi:10.1117/12.852289.

152. Y. Coello, A. D. Jones, T. C. Gunaratne, and M. Dantus "Atmospheric pressure femtosecond laser imaging mass spectrometry" Anal. Chem. **82**, 2753-2758 (2010).

151. M. Dantus "Removing the applications bottleneck for ultrafast lasers", Laser+Photonics **01-2010**, 18-21 (2010).

150. D. Pestov, V. V. Lozovoy, and M. Dantus "Single-beam shaper-based pulse characterization and compression using MIIPS sonogram", Opt. Letters **35**, 1422-1424 (2010).

149. J. M. Gunn, S. H. High, V. V. Lozovoy and M. Dantus, "Measurement and control of ultrashort optical pulse propagation in metal nanoparticle-covered dielectric surfaces," J. Phys. Chem. C **114**, 12375-12381 (2010).

148. Xu, B.; Coello, Y.; Lozovoy, V. V.; Dantus, M., "Two-photon fluorescence excitation spectroscopy by pulse shaping ultrabroad-bandwidth femtosecond laser pulses", Applied Optics, **49**, (32), 6348-6353 (2010).

147. Roy, S; Wrzesinski, P; Pestov, D; Dantus, M; Gord, J. "Single-Beam Coherent Anti-Stokes Raman Scattering (CARS) Spectroscopy of Gas-Phase CO2 via Phase and Polarization Shaping of a Broadband Continuum" J. Raman Spec. **41**, 1194–1199 (2010).

146. D. Pestov, V. V. Lozovoy, and M. Dantus "Single-beam shaper-based pulse characterization and compression using MIIPS sonogram," Opt. Letters **35**, 1422-1424 (2010)

145. S. Roy, P. Wrzesinski, D. Pestov, T. Gunaratne, M. Dantus, J. R. Gord "Single-beam coherent anti-Stokes Raman scattering (CARS) spectroscopy of N2 using a shaped 7-fs laser pulse" Applied Physics Letters **95**, L09-03549R1 (2009).

144. T. C. Gunaratne, X. Zhu, R. Amin, V. V. Lozovoy and M. Dantus, "Influence of Femtosecond Pulse shaping on Silicon Micromachining Monitored by Laser Induced Breakdown Spectroscopy and Surface Second Harmonic Generation ," J. Appl. Phys. **106**, 123101 (2009).

143. Y. Coello, T. C. Gunaratne, M. Dantus, Atmospheric pressure femtosecond laser imaging mass spectrometry," Proceedings from the SPIE 7182, 71821W-71821W-5 (2009)

142. C. L. Kalcic, T. C. Gunaratne, G. E. Reid, A. D. Jones, M. Dantus, "Femtosecond laser scalpel technology for proteomic mass spectrometry," Proceedings from the SPIE 7203, 72030C-72030C-5 (2009)

141. V. V. Lozovoy and M. Dantus, "When shorter is better," Proceedings of the SPIE 7203, 72030Y-72030Y-7 (2009)

140. Y. Andegeko, D. Pestov, V. V. Lozovoy, M. Dantus, "Ultrafast multiphoton microscopy with high-order spectral phase distortion compensation," Proceedings of the SPIE 7183,71830W-71830W-6 (2009).

139. D Pestov, V V. Lozovoy, and M Dantus Multiple Independent Comb Shaping (MICS): Phase-only generation of optical pulse sequences Optics Express **17**, 14351-14361 (2009).

138. C. L. Kalcic, T. C. Gunaratne, A. D. Jones, M. Dantus, and G. E. Reid, Femtosecond laser-induced ionization/dissociation of protonated peptides, J. Am. Chem. Soc. **131**, 940-942 (2009)

137. X. Zhu, T. C. Gunaratne, V. V. Lozovoy and M. Dantus, Comment on closing the loop on bond selective chemistry using tailored strong field laser pulses, J. Phys. Chem. A **113**, 5264-5266 (2009).

136. M. Dantus, D. Pestov, and Y. Andegeko, "Better results from ultrafast nonlinear microscopy," BioOptics World **2**, 23-24 (2009)

135. H. Li, D. A. Harris, B. Xu, P. J. Wrzesinski, V. V. Lozovoy, and M. Dantus, "Standoff and arms-length detection of chemicals with single-beam coherent anti-Stokes Raman scattering," Appl. Opt. **48**, B17-B22 (2009)

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