

AMIR WAND — PUBLICATIONS, CONFERENCES & COLLABORATIONS

Current Position: Ph.D. Student, Research Assistant, and Teaching Assistant

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List of Publications

Publications in Peer- Reviewed Journals

1. J. P. Kraack*, A. Wand*, T. Buckup, M. Motzkus and S. Ruhman. "Mapping Multidimensional Excited State Dynamics in Real Time Using Pump-Impulsive-Vibrational-Spectroscopy and Pump-Degenerate-Four-Wave-Mixing". *Phys. Chem. Chem. Phys.*, DOI: 10.1039/C3CP50871D (2013).
(* equally-contributing co-first authors).
2. A. Wand, I. Gdor, J. Zhu, M. Sheves and S. Ruhman. "Shedding New Light on Retinal Protein Photochemistry". *Annu. Rev. Phys. Chem.* **64**, 437-458 (2013).
3. A. Wand, B. Loevsky, N. Friedman, M. Sheves and S. Ruhman. "Probing Ultrafast Photochemistry of Retinal Proteins in the Near-IR: Bacteriorhodopsin and Anabaena Sensory Rhodopsin vs. Retinal Protonated Schiff Base in Solution". *J. Phys. Chem. B.* **117**, 4670-4679 (2013).
4. A. Wand, N. Friedman, M. Sheves and S. Ruhman. "Ultrafast Photochemistry of Light-Adapted and Dark-Adapted Bacteriorhodopsin: Effects of the Initial Retinal Configurations". *J. Phys. Chem. B* **116**, 10444-10452 (2012).
5. A. Wand, R. Rozin, T. Eliash, K. H. Jung, M. Sheves and S. Ruhman. "Asymmetric Toggling of a Natural Photoswitch: Ultrafast Spectroscopy of Anabaena Sensory Rhodopsin". *J. Am. Chem. Soc.* **133**, 20922-20932 (2011).
6. A. Kahan*, A. Wand*, S. Ruhman, S. Zilberg and Y. Haas. "Solvent Tuning of a Conical Intersection: Direct Experimental Verification of a Theoretical Prediction". *J. Phys. Chem. A* **115**, 10854-10861 (2011).
(* equally-contributing co-first authors).
7. B. Loevsky, A. Wand, O. Bismuth, N. Friedman, M. Sheves and S. Ruhman. "A New Spectral Window on Retinal Protein Photochemistry". *J. Am. Chem. Soc.* **133**, 1626-1629 (2011).
8. A. Wand, S. Kallush, O. Shoshanim, O. Bismuth, R. Kosloff and S. Ruhman. "Chirp Effects on Impulsive Vibrational Spectroscopy: a Multimode Perspective", *Phys. Chem. Chem. Phys.* **12**, 2149-2163 (2010).
9. J. Zhu, O. Bismuth, I. Gdor, A. Wand, N. Friedman, M. Sheves and S. Ruhman. "Comparing Photochemistry of n- and tert-butylamine All-Trans Retinal Protonated Schiff-Base: Effects on C=N Configurational Inhomogeneity", *Chem. Phys. Lett.* **479**, 229-233 (2009).

Proceedings of Scientific Conferences

1. A. Wand and S. Ruhman. "Following Excited State Evolution with Impulsive Vibrational Spectroscopy". Proceedings of the 16th International Conference on Time-Resolved Vibrational Spectroscopy (TRVS), Beppu, Japan, 2013.
2. A. Wand, R. Rozin, T. Eliash, N. Friedman, K. H. Jung, M. Sheves and S. Ruhman. "Probing How Initial Retinal Configuration Controls Photochemical Dynamics in Retinal Proteins". Proceeding of the 18th International Conference in Ultrafast Phenomena, Lausanne, Switzerland, 2012, EPJ Web of Conferences **41**, 07018 (EDP Sciences, 2013).
3. A. Wand, R. Rozin, T. Eliash, M. Sheves and S. Ruhman. "Ultrafast Investigation of Excited State Dynamics of the Photochromic Anabaena Sensory Rhodopsin". Proceedings of the 15th International Conference on Time-Resolved Vibrational Spectroscopy (TRVS), Ascona, Switzerland, 2011.
4. A. Wand, S. Kallush, O. Shoshanim, O. Bismuth, R. Kosloff and S. Ruhman, "Mapping Chirp Effects on Impulsive Vibrational Spectroscopy in Multidimensional Systems ". Proceedings of the 17th International Conference on Ultrafast Phenomena, Snowmass Colorado USA, 2010, pp. 382-384 (Oxford University Press Inc., 2011).
5. B. Loevsky, A. Wand, O. Bismuth, N. Friedman, M. Sheves and S. Ruhman. "Opening a New Spectral Window on Retinal Protein Photochemistry". *Ibid*, pp. 595-597.

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Proceedings of Scientific Conferences (cont'd)

6. A. Wand, O. Shoshanim, O. Bismuth, S. Kallush, R. Kosloff and S. Ruhman. "Chirp Effects on vibrational Wave Packets in Large Molecules: a Multimode Perspective". Proceedings of the 16th International Conference on Ultrafast Phenomena, Stresa, Italy, 2008, Springer Series in Chemical Physics **92**, pp. 331-333 (Springer, 2009).
7. O. Bismuth, A. Wand, N. Friedman, M. Sheves and S. Ruhman. "Probing Photodynamics of Retinal Protonated Schiff-Base with 7 fs Impulsive Vibrational Spectroscopy". Ibid, pp. 589-591.
8. O. Bismuth, A. Wand, N. Friedman, M. Sheves and S. Ruhman. "Investigating the Excited State of the Retinal Protein Chromophore with Transient Impulsive Raman". Proceedings of the 14th International Conference on Time-Resolved Vibrational Spectroscopy (TRVS), Meredith New Hampshire, USA, 2009.

Scientific Conferences & Meetings

2013	The Dead Sea Winter School and Workshop on Exciton Dynamics in Natural and Man Made Systems, Ein-Gedi, Israel. 18 th International Conference on Ultrafast Phenomena, Lausanne, Switzerland.
2012	Oral Presentation: "Probing How Initial Retinal Configuration Controls Photochemical Dynamics in Retinal Proteins". 15 th International Conference on Time-Resolved Vibrational Spectroscopy, Ascona, Switzerland.
2011	Oral Presentation: "Ultrafast Investigation of Excited State Dynamics of the Photochromic Anabaena Sensory Rhodopsin". Aarhus-Weizmann-HUJI Photophysics Workshop, Weizmann Institute, Rehovot, Israel.
2010	Oral Presentation: "Employing Chirped Pulses in Impulsive Vibrational Spectroscopy for Obtaining Excited State (?) Structural Information". 17 th International Conference on Ultrafast Phenomena, Snowmass Colorado USA.
2010	Poster Presentation: "Mapping Chirp Effects on Impulsive Vibrational Spectroscopy in Multidimensional Systems". 16 th International Conference on Ultrafast Phenomena, Stresa, Italy.
2008	Poster Presentation: "Chirp Effects on Vibrational Wave Packets in Large Molecules: A Multimode Perspective". Received European Science Foundation Fellowship Program Scholarship.

International Collaborations

Group PI	Location	Details
Prof. Giulio Cerullo.	Center for Ultrafast Science and Biomedical Optics (CUSBO), Politecnico di Milano, Milan, Italy.	Two visits of two weeks (Nov. 2008 & Jul. 2011) for conducting joint research in the Politecnico. Working with Prof. Giulio Cerullo, Dr. Daniele Brida, Dr. Dario Polli and Dr. Cristian Manzoni. Travels granted by the European Community – Access to Research Infrastructure Action of Improving Human Potential Program.
Prof. Richard A. Mathies	College of Chemistry, University of California, Berkeley, USA.	Three weeks of joint research conducted in Berkeley (Aug. 2010), following three weeks conducted in Israel (Oct. 2009), both mainly with Dr. Renee R. Frontiera. Travel granted by US-Israel Binational Science Foundation (BSF).
Prof. Marcus Motzkus	Physikalisch-Chemisches Institut, Ruprecht-Karls Universität Heidelberg, Heidelberg, Germany.	Two weeks of joint research conducted in Heidelberg (Sep. 2012), following ten days conducted in Israel (Feb. 2012), both with Dr. Tiago Buckup and Jan Philip Kraack. Travel granted by the Minerva Foundation (Germany).