

List of Publications

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June 3, 2008

1. Absolute Integrated Band Strength and Magnetic Dipole Transition Moments in the $^2P_{3/2} \rightarrow ^2P_{1/2}$ Fine Structure (with Hyperfine Structure) Transition of the Iodine Atom: Experiment and Theory. T.K. Ha, Y. He, J. Pochert, M. Quack, R. Ranz, G. Seyfang and I. Thanopoulos, *Ber. Bunsenges. Phys. Chem.*, **99**: 384 (1995).
2. E.A. Donley, R. Marquardt, M. Quack, J. Stohner, I. Thanopoulos and E.U. Wallenborn, *Proceedings of the Symposium on Atomic and Surface Physics and Related Topics, SASP 98*, ed. by A. Hansel and W. Lindinger, p. 4-21 - 4-24. *Chimia*, **51**: 524 (1997).
3. R. Marquardt, M. Quack and I. Thanopoulos, *Proceedings of the Annual Meeting of the New Swiss Chemical Society, Zürich 1998*, *Chimia*, **52**: 485 (1998).
4. Dynamical Chirality and the Quantum Dynamics of Bending Vibrations of the CH Chromophore in Methane Isotopomers. R. Marquardt, M. Quack and I. Thanopoulos, *J. Phys. Chem A*, **104**: 6129 (2000).
5. Some Simple Mechanisms of Multiphoton Excitation in Many Level Systems. E.A. Donley, R. Marquardt, M. Quack, J. Stohner, I. Thanopoulos and E.U. Wallenborn, *Molecular Physics*, **99**: 1275 (2001).
6. Slowing Down of Light by Laser Induced Barrier Hopping. I. Thanopoulos and M. Shapiro, *J. Chem. Phys.*, **117**: 8404 (2002).
7. Tunneling Dynamics of the NH Chromophore in NHD₂ During and After Coherent Infrared Excitation. R. Marquardt, M. Quack, I. Thanopoulos, and D. Luckhaus, *J. Chem. Phys.*, **118**: 643 (2003).
8. Two-Step Enantio-selective Optical Switch. P. Král, I. Thanopoulos, M. Shapiro, and D. Cohen, *Phys. Rev. Lett.*, **90**: 033001 (2003); see also *Nature Materials*: www.nature.com/materials/news/news/030206/portal/m030206-2.html; also selected in Virtual Journal of Ultrafast Science, Vol. 2, Issue 2.

9. Theory of a two-step enantiomeric purification of racemic mixtures by optical means: the D_2S_2 molecule. I. Thanopoulos, P. Král, and M. Shapiro, *J. Chem. Phys.*, **119**: 5105 (2003).
10. Tubular Image States and Light-Driven Molecular Switches, P. Král, B. Graninger, H.R. Sadeghpour, I. Thanopoulos, M. Shapiro, and D. Cohen, *AIP Conf. Proc.*, **685** 465 (2003).
11. A global electric dipole function of ammonia and isotopomers in the electronic ground state. R. Marquardt, M. Quack, I. Thanopoulos, and D. Luckhaus, *J. Chem. Phys.*, **119**: 10724 (2003).
12. Complete Control of Population Transfer between Clusters of Degenerate States. I. Thanopoulos, P. Král, and M. Shapiro, *Phys. Rev. Lett.*, **92**: 113003 (2004); also selected in Virtual Journal of Ultrafast Science, Vol. 3, Issue 4.
13. Theory of the Two Step Enantiomeric Purification of 1,3 Dimethylallene. D. Gerbasi, P. Brumer, I. Thanopoulos, P. Král, and M. Shapiro, *J. Chem. Phys.*, **120**: 11557 (2004); also selected in Virtual Journal of Ultrafast Science, Vol. 3, Issue 7.
14. Laser-driven coherent manipulation of molecular chirality. I. Thanopoulos, E. Paspalakis, and Z. Kis, *Chem. Phys. Lett.*, **390**: 228 (2004).
15. Bands of Image States in Nanowires Lattices and Infrared-Control of Proteins on Nanotube Ropes. P. Král, D. Segal, M. Shapiro, I. Thanopoulos, B.E. Graninger, and H.R. Sadeghpour, *Fullerenes, Nanotubes, and Carbon Nanostructures*, **13**: 267 (2005).
16. Switching Nucleotide Base Pairs by Coherent Light. I. Thanopoulos and M. Shapiro, *Lecture Series on Computer and Computational Sciences*, **4**: 744 (2005).
17. Quantum-field Coherent Control: Preparation of Broken Symmetry Entangled States. P. Král, I. Thanopoulos, and M. Shapiro, *Phys. Rev. A*, **72**: 020303(R) (2005); also selected in Virtual Journal of Ultrafast Science, Vol. 4, Issue 9 and Virtual Journal of Quantum Information, Vol. 5, Issue 9.

18. Detection and Automatic Repair of Nucleotide Base-Pair Mutations by Coherent Light. I. Thanopoulos and M. Shapiro, *J. Am. Chem. Soc.*, **127**: 14434 (2005).
19. Coherently Controlled Adiabatic Passage to Multiple Continuum Channels. I. Thanopoulos and M. Shapiro, *Phys. Rev. A*, **74**: 031401(R) (2006); also selected in Virtual Journal of Ultrafast Science, Vol. 5, Issue 10.
20. Coherently Controlled Adiabatic Passage. P. Král, I. Thanopoulos, and M. Shapiro, *Rev. Mod. Phys.*, **79**(1), 53 (2007); also selected in Virtual Journal of Ultrafast Science, Vol. 6, Issue 2.
21. Enhanced Selectivity and Yield in Multi-Channel Photodissociation Reactions: Application to CH₃I. I. Thanopoulos and M. Shapiro, *J. Chem. Phys.*, **125**, 133314 (2006); also selected in Virtual Journal of Ultrafast Science, Vol. 5, Issue 11.
22. Molecular Docking on Deformed Surfaces: Nano-mechanical Control of Catalysis. B. Wang, P. Král, and I. Thanopoulos, *Nano Lett.*, **6**, 1918 (2006).
23. Laser-Operated Porphyrin-Based Molecular Current Router. I. Thanopoulos, and E. Paspalakis, *Phys. Rev. B*, **76**, 035317 (2007); also selected in Virtual Journal of Nanoscale Science & Technology, Vol. 16, Issue 5.
24. Laser-Induced Dynamical Chirality and Intramolecular Energy Flow in the CH Chromophore, I. Thanopoulos, *AIP Conf. Proc.*, **963** 541 (2007).
25. Preface: Quantum Control and Light-Matter Interactions: Recent Computational and Theoretical Results, E. Paspalakis and I. Thanopoulos, *AIP Conf. Proc.*, **963** 733 (2007).
26. Strong system-bath interactions and the control of the photodissociation of CH₃I, I. Thanopoulos and M. Shapiro, *J. Phys. B: At. Mol. Opt. Phys.*, **41** 074010 (2008).
27. Theory of laser enhancement and suppression of cold reactions: The fermion-boson ${}^6\text{Li} + {}^7\text{Li}_2 \xleftrightarrow{\hbar\omega} {}^6\text{Li} {}^7\text{Li} + {}^7\text{Li}$ radiative collision, X. Li,

G.A. Parker, P. Brumer, I. Thanopoulos, and M. Shapiro, *J. Chem. Phys.*, **128** 124314 (2008).

28. Laser-catalyzed production of ultracold molecules: The ${}^6\text{Li} + {}^6\text{Li}-{}^7\text{Li} \xrightarrow{\hbar\omega} {}^6\text{Li}-{}^6\text{Li}+{}^7\text{Li}$ reaction, X. Li, G.A. Parker, P. Brumer, I. Thanopoulos, and M. Shapiro, *Phys. Rev. Lett.*, submitted for publication (2008).
29. Optical switching of electric charge transfer pathways in porphyrin: A light-controlled nanoscale current router, I. Thanopoulos, E. Paspalakis, and V. Yannopapas, *Nanotechnology*, submitted for publication (2008).
30. Coarse Grained Open System Quantum Dynamics, I. Thanopoulos, P. Brumer, and M. Shapiro, *Phys. Rev. Lett.*, submitted for publication (2008).