

Curriculum Vitae

Persönliche Daten:

Name: Cosmin Lupulescu
 Wohnort: Schievelbeinerstr. 24, 10439 Berlin
 Ständiger Wohnsitz: Str. Cornet, Bl. 56, Ap. 14, 1800 Lugoj, Rumänien
 Staatsangehörigkeit: Rumänisch
 geboren am: 12.09.1974 in Lugoj–Timis, Rumänien

Hochschulausbildung:

1988–1992 Abitur (Bacalaureat) an dem
 "Iulia Hasdeu"-Gymnasium, Lugoj, Rumänien;
 1992–1997 Hochschulstudium in Physik an der
 West Universität Timisoara, Rumänien;
 Hauptfach: Physik;
 1997 Thema der Diplomarbeit: "Grafica in fizica generala"
 (Computergrafik und Datenanalyse für Allgemeine
 Physik), Betreuer: Assist. Anton Liecz;
 1997–1998 Masterstudium an der West Universität von Timisoara;
 "Optik und Spektroskopie von Lasermaterialien";
 1998–1999 Fortsetzung des Masterstudiums in der Arbeitsgruppe
 von Prof. Dr. L. Wöste an der Freien Universität Berlin
 als Erasmus/Sokrates Stipendiat;
 1999 Erwerb des Titels "Master of Science" an der West
 Universität von Timisoara, Titel: "Fragmentation of
 Homogeneous and Heterogeneous Alkali Clusters",
 Betreuer: Prof. Dr. L. Wöste und Prof. Dr. N. Avram;

Beruflicher Werdegang:

1997–1998 Physik- und Chemielehrer an der Grundschule
 Bârna–Timis, Rumänien;
 2000–2002 Beginn der Promotion in der Arbeitsgruppe von Prof. Dr.
 L. Wöste am Institut für Experimentalphysik an der
 Freien Universität Berlin als Daimler–Benz Stipendiat;
 Seit 2002 Fortsetzung der Promotion als wissenschaftlicher
 Mitarbeiter an der Freien Universität Berlin;
 2000–2004 Lehrtätigkeit im Physikpraktikum für Naturwissenschaftler
 an der Freien Universität Berlin (5 Semester).

Berlin, Juni 2004

Konferenzbeiträge

1. DPG-Frühjahrstagung, Vortrag: "Controlling Isotope Ratio Ionization with Shaped fs-Laser Pulses", 22.-26. März 2004, München.
2. TIM-03, Vortrag: "Learning about Molecules by Teaching Lasers to Control Them", 29.-30. November 2003, Timisoara, Rumänien.
3. Stipendiatentreffen der Daimler-Benz Stiftung, 19.-21. September 2003, Franken-Akademie, Schloss Schney in Lichtenfels.
4. Femtochemistry VI, Poster I 30 (Pump&Probe Spectroscopy Explaining the Optimal Laser Pulse for Maximizing the CpMn(CO)₃ Ion Yield), Poster I 28 (Closed Loop Optimization of the Ionization Process in NaK and K₂: Learning from the Optimal Pulse Shapes), 6.-10. Juli 2003, Paris, Frankreich.
5. SFB 450 Seminar: "Analysis and Control of Ultrafast Photoinduced Reactions", 20.-22. März 2003, Harnack-Haus, Berlin.
6. Seminar: "Wissenschaftliche Ergebnisse patent-verwendet", Oktober 2002 - März 2003, Freie Universität Berlin, Technische Universität Berlin, Humboldt Universität Berlin.
7. SFB 450 Seminar, Vortrag: "Control of Ultrafast Photochemical Reactions in Small Alkali Clusters", 12. November 2002, Freie Universität Berlin.
8. ISSPIC 11, Poster A-V-14 (Optimization of the 3-Photon Ionization Process in NaK and Na₂K: Revealing Process-Specific Information from the Optimal Pulse Shapes), Poster A-V-15 (Pump&Probe Spectroscopy on Non-Stoichiometric Sodium-Fluoride Clusters), 9.-13. September, Straßburg, Frankreich.
9. DPG-Frühjahrstagung, Vortrag: "Mass Spectrometry and Molecular Dynamics of Alkali Fluorides", 4.-8. März 2002, Osnabrück.
10. Clustertreffen, Poster (Analysis and Control of Ultrafast Photodissociation Processes in CpMn(CO)₃), 7.-12. Oktober 2001, Herzogenhorn.
11. SFB 450 Seminar: "Analysis and Control of Ultrafast Photoinduced Reactions", 22.-24. November 2001, Berlin.
12. Stipendiatentreffen der Daimler-Benz Stiftung, Vortrag: "Anwendung der ultrakurzen Laserpulse", 14.-16. September 2001, Willebadessen.

13. Femtochemistry V, Poster PI 26 (Controlling the Vibration and Dissociation Dynamics in Triatomic Alkali-Metal Clusters), Poster PII 08 (Analysis and Feedback-Control of Ultrafast Fragmentation Processes in $\text{CpMn}(\text{CO})_3$), Poster PII 13 (Feedback Control Studies of Molecular Systems with Increasing Complexity: Fragmentation and Ionization of Alkaline Clusters with Optimally Shaped fs-Pulses), 2.-6. September 2001, Toledo, Spanien.
14. Nobelpreisträgertagung, 25.-29. Juni 2001, Lindau.
15. DPG-Frühjahrstagung/ECAMP VII, Poster A 1.5 (Time-Resolved Spectroscopy of Alkali Halide Clusters), Poster MO 8.5 (Characterization of Ultrafast Fragmentation Process and Feedback Control in Organometallic Molecules), Poster MO 1.18 (Feedback Optimal Control of Wavepacket Dynamics in Small Mixed Alkali Clusters), 2.-6. April 2001, Berlin.
16. 3rd Prague Workshop on Molecular Photophysics and Dynamics, Vortrag: "Ultrafast Fragmentation and Dynamics of Vibrational Na_2K and K_2Na in Molecular Beams", 15.-17. März 2001, Prag, Tschechien.
17. Modern Optics 2000, Poster (Analysis and Control of Ultrafast Fragmentation Dynamics in Mixed Alkali Clusters and Small Molecules), 18.-22. September, 2000, Jurata, Polen.
18. Stipendiatentreffen der Daimler-Benz Stiftung, 8.-10. September 2000, Willebadessen.
19. Sommerschule: "Atomic Clusters and Nanoparticles", Poster (Analysis and Control of Ultrafast Fragmentation Dynamics in $\text{MnCp}(\text{CO})_3$), 4.-28. Juli 2000, Les Houches, Frankreich.
20. Nordost Clustertreffen, 25.-26. Mai 2000, Universität Rostock.
21. Femtochemistry IV, Poster II (Time-Resolved Spectroscopy of Small Heterogeneous and Homogeneous Alkali-Metal Clusters), 18.-22. Juli 1999, Leuven, Belgien.
22. DPG-Frühjahrstagung, Symposium of Cluster and Fullerene (SYCF 5.1), Poster (Femtosecond Spectroscopy of Alkali Dimers and Trimers Clusters in Molecular Beams), März 1999, Heidelberg.
23. Informal Cluster Workshop '98 (ICW 98) on Structure and Dynamics of Metallic Clusters, November 1998, Humboldt Universität Berlin.

Eingeladene Vorträge

1. C. Lupulescu: "Adaptive Control of Chemical Reactions – What Can We Learn From the Optimal Pulse Shapes?" FOM–Institute for Atomic and Molecular Physics (AMOLF), Amsterdam, Holland, 09.10.2003.
2. C. Lupulescu: "Learning about Molecules by Teaching Lasers to Control Them", Universität Timisoara, Rumänien, 29.11.2003.

Wissenschaftliche Publikationen

1. P. Rosendo-Francisco, C. Lupulescu, B. Baptist and Š. Vajda – *Ultrafast Fragmentation and Vibrational Dynamics of Triatomic Hetero- and Homonuclear Alkali Metal Clusters*, in UPS '99 Special Issue of J. of Chin. Chem. Soc. **47** (2000),.
2. Š. Vajda, A. Bartelt, E.-C. Kaposta, T. Leisner, C. Lupulescu, S. Minemoto, P. Rosendo-Francisco and L. Wöste – *Feedback Optimization of Shaped Femtosecond Laser Pulses for Controlling the Wavepacket Dynamics and Reactivity of Mixed Alkaline Clusters*, Chem. Phys. **247** (2001), 231.
3. C. Daniel, J. Full, L. González, C. Kaposta, M. Krenz, C. Lupulescu, J. Manz, S. Minemoto, M. Oppel, P. Rosendo-Francisco, Š. Vajda and L. Wöste – *Analysis and Control of Laser Induced Fragmentation Processes in $CpMn(CO)_3$* , Chem. Phys. **267** (2001), 247.
4. Š. Vajda, P. Rosendo-Francisco, C. Kaposta, M. Krenz, C. Lupulescu, and L. Wöste – *Analysis and Control of Ultrafast Photodissociation Processes in Organometallic Molecules*, Eur. Phys. J. D **16** (2001), 161.
5. A. Bartelt, S. Minemoto, C. Lupulescu, Š. Vajda, and L. Wöste – *Control of Wavepacket Dynamics in Mixed Alkali Clusters by Optimally Shaped fs Pulses*, Eur. Phys. J. D **16** (2001), 127.
6. C. Lupulescu, P. Rosendo-Francisco, Š. Vajda and L. Wöste – *Analysis and Feedback-Control of Ultrafast Fragmentation Processes in $CpMn(CO)_3$* , in *Femtochemistry and Femtobiology - Ultrafast Dynamics in Molecular Science*, ed. A. Douhal and J. Santamaria, World Scientific Publishing, Singapore, 2002, ISBN 981-02-4866-0, page 390.
7. A. Bartelt, C. Lupulescu, Š. Vajda, and L. Wöste – *Feedback Control of Alkali Dimers with Sinusoidal Phase Modulated fs-Pulses: Can We Learn From the Acquired Pulse Shapes?*, in *Femtochemistry and Femtobiology - Ultrafast Dynamics in Molecular Science*, ed. A. Douhal and J. Santamaria, World Scientific Publishing, Singapore, 2002, ISBN 981-02-4866-0, page 481.
8. Š. Vajda, C. Lupulescu, A. Bartelt, F. Budzyn, P. Rosendo-Francisco and L. Wöste – *Controlling the Vibration and Dissociation Dynamics in Triatomic Alkaline Clusters*, in *Femtochemistry and Femtobiology -*

- Ultrafast Dynamics in Molecular Science*, ed. A. Douhal and J. Santamaria, World Scientific Publishing, Singapore, 2002, ISBN 981-02-4866-0, page 472.
9. Š. Vajda, C. Lupulescu, A. Merli, F. Budzyn, L. Wöste, M. Hartmann, J. Pittner, V. Bonačić-Koutecký – *Observation and Theoretical Description of Periodic Geometric Rearrangement in Electronically Excited Non-Stoichiometric Sodium-Fluoride Clusters*, Phys. Rev. Lett. **89** (2002), 213404.
 10. Š. Vajda, C. Lupulescu, A. Lindinger, A. Merli, and L. Wöste – *Control of Photoinduced Processes by Optimally Shaped Laser Pulses in $MnCp(CO)_3$: Recovering the Information Content Coded in the Optimal Pulse Form*, in *Ultrafast Phenomena XIII: Proceedings of the 13th International Conference*, Vancouver, Bc, Canada, May 12-17, 2002, ed. R.J.D. Miller, M.M. Murnane, N.F. Scherer, and A.M. Weiner, Springer Verlag, Chemical Physics Series **71**, ISBN 3-540-00089-5, April 2003.
 11. C. Lupulescu, Š. Vajda, A. Lindinger, A. Merli, and L. Wöste – *Femtosecond Pump&Probe Experiments on Non-Stoichiometric Sodium-Fluoride Clusters: I. First Direct Observation of Periodical Structural Changes in Na_2F* , Eur. Phys. J. D **24** (2003), 173.
 12. Š. Vajda, A. Bartelt, C. Lupulescu, and L. Wöste – *Femtosecond Spectroscopy on Metal Clusters*, in *Progress in Experimental and Theoretical studies of Clusters* (Advanced Series in Physical Chemistry), ed. T. Kondow and F. Mafune, World Scientific Publishing, Singapore, ISBN 981-02-3893-2, 2003.
 13. C. Daniel, J. Full, L. González, C. Lupulescu, J. Manz, A. Merli, Š. Vajda, L. Wöste – *Deciphering the Reaction Dynamics Underlying Optimal Control Laser Fields*, Science **299** (2003), 536.
 14. A. Lindinger, C. Lupulescu, A. Bartelt, Š. Vajda, and L. Wöste – *Coherent Control of Alkali Cluster Fragmentation Dynamics*, Spectrochimica Acta Part B **58** (2003), 1109.
 15. A. Bartelt, A. Lindinger, C. Lupulescu, Š. Vajda, and L. Wöste – *One Parameter fs-Pulse Form Control on NaK and Na_2K* , Phys. Chem. Chem. Phys. **5** (2003), 3610.
 16. C. Lupulescu, A. Lindinger, M. Plewicky, S. M. Weber, and L. Wöste – *Frequency-dependent Optimization of the Ionization Process in NaK by Means of fs-Light Pulses*, Chem. Phys. **296** (2004), 63.

17. A. Lindinger, A. Bartelt, C. Lupulescu, Š. Vajda, and L. Wöste – *Optimal Control on Multi-photon Ionization Dynamics of Small Alkali Aggregates*, Proceedings of SPIE Vol. 5258 IV Workshop on Atomic and Molecular Physics, ed. Jozef Heldt, Bellingham, WA, 2003, page 25.
18. A. Bartelt, A. Lindinger, C. Lupulescu, Š. Vajda, L. Wöste – *Optimal Control of Multi-photon Dissociation and Ionization Processes in Small Na_mK_n Clusters*, Phys. Chem. Chem. Phys. 6 (2004), 1679.
19. C. Lupulescu, A. Lindinger, A. Merli, M. Plewicki, and L. Wöste – *Free Phase Optimization of $CpMn(CO)_2^+$ as a Fragment of $CpMn(CO)_3$ by Means of Shaped Femtosecond Laser Pulses*, in *Femtochemistry and Femtobiology: Ultrafast Molecular Events in Molecular Science*, ed. M. Martin and J. T. Hynes, Elsevier, Amsterdam, 2004, ISBN 0-444-51656-5, page 123.
20. A. Lindinger, C. Lupulescu, M. Plewicki, F. Vetter, S. M. Weber, A. Merli, and L. Wöste – *Closed Loop Optimization of the Ionization Process in NaK: Learning from the Optimal Pulse Shapes*, in *Femtochemistry and Femtobiology: Ultrafast Molecular Events in Molecular Science*, ed. M. Martin and J. T. Hynes, Elsevier, Amsterdam, 2004, ISBN 0-444-51656-5, page 111.
21. B. Schäfer-Bung, R. Mitrić, V. Bonačić-Koutecký, A. Bartelt, C. Lupulescu, A. Lindinger, Š. Vajda, S. M. Weber, L. Wöste – *Optimal Control of Ionization Process in NaK: Comparison between Theory and Experiment*, J. Phys. Chem. A 108 (2004), 4175.
22. C. Lupulescu, Š. Vajda, A. Lindinger, A. Merli, and L. Wöste – *Femtosecond Investigations on the Ultrafast Photo-dissociation Dynamics of $CpMn(CO)_3$ and its Fragment Ions*, Phys. Chem. Chem. Phys. 6 (2004), 3420.
23. A. Lindinger, M. Plewicki, S. M. Weber, C. Lupulescu, and L. Wöste – *Spectral Modification of White Light by Means of fs-Pulses Optimized in Closed Learning Loops*, Optica Applicata (2004), im Druck.
24. A. Lindinger, C. Lupulescu, M. Plewicki, F. Vetter, A. Merli, S. M. Weber, and L. Wöste – *Isotope Selective Ionization by Optimal Control Using Shaped fs-Laser Pulses*, Phys. Rev. Lett. 93 (2004), 033001.
25. A. Lindinger, A. Bartelt, C. Lupulescu, M. Plewicki, and L. Wöste – *Learning About Clusters by Teaching Lasers to Control Them*, Proceedings of the International Symposium on Atomic Cluster Collisions

(ISACC) 2003, ed. A.V. Solov'yov, Saint Petersburg, Russland, eingereicht.

26. A. Lindinger, F. Vetter, C. Lupulescu, M. Plewicky, S. M. Weber, A. Merli, and L. Wöste – *Selective Ionization via Different Electronic Pathways by Optimal Control Demonstrated for $^{23}\text{Na}^{39}\text{K}/^{23}\text{Na}^{41}\text{K}$* , eingereicht.
27. S. M. Weber, A. Lindinger, M. Plewicky, C. Lupulescu, F. Vetter, and L. Wöste – *Optimization Course Analysis of Coherent Control Experiments*, im Druck.
28. A. Lindinger, C. Lupulescu, J. Le Roux, A. Bartelt, Š. Vajda et L. Wöste – *Contrôle cohérent de la dynamique de fragmentation d'agrégats alcalins*, eingereicht.
29. A. Lindinger, C. Lupulescu, F. Vetter, M. Plewicky, S. M. Weber, A. Merli and L. Wöste – *Learning from the Acquired Optimal Pulse Shapes About the Isotope Selective Ionization of Potassium Dimers*, eingereicht.
30. A. Lindinger, S. M. Weber, C. Lupulescu, F. Vetter, M. Plewicky, A. Merli, L. Wöste, A. Bartelt, H. Rabitz – *Pulse Cleaning in Optimal Control Demonstrated for the Ionization of Alkaline Dimers*, Manuscript in Vorbereitung.

Patentanmeldung:

Verfahren und Vorrichtung zur Trennung von Molekülen mit unterschiedlichen Anregungsspektren. Erfinder: A. Lindinger, C. Lupulescu, L. Wöste.