

List of Publications

- [38] T. Rander, T. Bischoff, A. Knecht, D. Wolter, R. Richter, A. Merli, T. Möller:
"Electronic and Optical Properties of Methylated Adamantane"
J. Am. Chem. Soc. Vol. 139, P. 11132 (2017)
- [37] C. Tyborski, R. Meinke, R. Gillen, T. Bischoff, A. Knecht, R. Richter, A. Merli, A. A. Fokin, T. V. Koso, V. N. Rodionov, P. R. Schreiner, T. Möller, T. Rander, C. Thomsen, J. Maultzsch:
"From isolated diamondoids to a van-der-Waals crystal: A theoretical and experimental analysis of a trishomocubane and a diamantane dimer in the gas and the solid phase"
J. Chem. Phys. Vol. 147, P. 044303 (2017)
- [36] R. Richter, M. I. S. Röhr, T. Zimmermann, J. Petersen, C. Heidrich, R. Rahner, T. Möller, J. E. Dahl, R. M. K. Carlson, R. Mitric, T. Rander, A. Merli:
"Laser-induced fluorescence of free diamondoid molecules"
Phys. Chem. Chem. Phys. Vol.17, P. 4739-4749 (2015)
- [35] R. Richter, D. Wolter, T. Zimmermann, L. Landt, A. Knecht, C. Heidrich, A. Merli, O. Dopfer, P. Reiß, A. Ehresmann, J. Petersen, J. E. Dahl, R. M. K. Carlson, C. Bostedt, T. Möller, R. Mitric, T. Rander:
"Size and shape dependent photoluminescence and excited state decay rates of diamondoids"
Phys. Chem. Chem. Phys. Vol.6, P. 3070-3076 (2014)
- [34] R. Meinke, R. Richter, A. Merli, A. A. Fokin, T. V. Koso, V. N. Rodionov, P. R. Schreiner, C. Thomsen, J. Maultzsch:
"UV resonance Raman analysis of trishomocubane and diamondoid dimers"
J. Chem. Phys., Vol.140, P. 034309, (2014)
- [33] A. Merli, J. Göller, V. Nordmeier:
"Selbstbau eines Stickstofflasers mit einfachen Materialien – und Ausbau zum Farbstofflaser" In: Praxis der Naturwissenschaften - Physik, 8/59, S. 20, ISSN1617-5689, (2010)
- [32] A. Merli, F. Eimer, F. Weise, A. Lindinger, W. Salzmann, T. Mullins, S. Götz, R. Wester, M. Weidemüller, R. Ağanoglu, C. P. Koch:
"Photoassociation and coherent transient dynamics in the interaction of ultracold rubidium atoms with shaped femtosecond pulses. II. Theory"
Phys. Rev. A, Vol.80, P. 063417, (2009)
(Article has been selected for the January 2010 issue of Virtual Journal of Ultrafast Science, access at: <http://www.vjulfrafast.org>)
- [31] T. Mullins, W. Salzmann, S. Götz, M. Albert, J. Eng, R. Wester, M. Weidemüller, F. Weise, A. Merli, S. M. Weber, F. Sauer, L. Wöste, A. Lindinger:
"Photoassociation and coherent transient dynamics in the interaction of ultracold

rubidium atoms with shaped femtosecond pulses. I. Experiment" *Phys. Rev. A*, Vol. 80, P. 063416, (2009)

(Article has been selected for the January 2010 issue of Virtual Journal of Ultrafast Science, access at: <http://www.vjulfast.org>)

- [30] F. Weise, A. Merli, F. Eimer, S. Birkner, F. Sauer, L. Wöste, A. Lindinger, W. Salzmann, T. Mullins, R. Wester, M. Weidemüller, R. Ađanođlu, C. P. Koch "Characteristic oscillations in the coherent transients of ultracold rubidium molecules using red and blue detuned pulses for photoassociation" *J. Phys. B: At. Mol. Opt. Phys.* Vol. 42, P. 215307, (2009)
- [29] A. Merli, J. Kirstein, V. Nordmeier: "Inhalte moderner Forschung für den naturwissenschaftlichen Schulunterricht." In: Nordmeier, V.; Grötzebauch, H. (Hrsg.): *Didaktik der Physik - Bochum 2009*. Berlin: Lehmanns Media, ISBN 978-3-86541-371-0, (2009)
- [28] A. Merli, J. Kirstein, L. Wöste, V. Nordmeier: "Laserphysik und Moleküldynamik hinter den Forschungskulissen." In: Höttecke, D.(Hrsg.): *Chemie und Physikdidaktik für die Lehrerausbildung*. Münster: LIT-Verlag, S.80, ISBN 978-3-643-10010-8, (2009)
- [27] J. Kirstein, A. Merli, V. Nordmeier: "Virtuelles Forschungslabor zum Thema Laserphysik und Moleküldynamik." In: Nordmeier, V.; Grötzebauch, H. (Hrsg.): *Didaktik der Physik - Bochum 2009*. Berlin: Lehmanns Media, ISBN 978-3-86541-371-0, (2009),
- [26] F. Eimer, F. Weise, A. Merli, S. Birkner, F. Sauer, L. Wöste, A. Lindinger, R. Ađanođlu, C. P. Koch, W. Salzmann, T. Mullins, S. Götz, R. Wester, M. Weidemüller: "Spectrally resolved coherent transient signal for ultracold rubidium molecules", *Eur. J. Phys. D*, Vol. 54, P. 711-714, (2009)
- [25] J. Kirstein, A. Merli, V. Nordmeier, L. Wöste: "Neue Konzepte zur Öffentlichkeitsarbeit im Kontext moderner Molekularforschung und Laserphysik. " In: Nordmeier, V.; Grötzebauch, H. (Hrsg.): *Didaktik der Physik – Berlin 2008*. Berlin: Lehmanns Media, ISBN 3-86541-317-X (ISBN-13: 9783865413178), (2008)
- [24] W. Salzmann, J. Eng, T. Mullins, M. Albert, R. Wester, M. Weidemüller, A. Merli, S. M. Weber, F. Sauer, M. Plewicky, F. Weise, L. Wöste, and A. Lindinger: "Coherent transients in the femtosecond photoassociation of ultracold molecules", *Phys. Rev. Lett.* Vol. 100, P. 233003, (2008)
- [23] F. Weise, S. Birkner, A. Merli, L. Wöste, A. Lindinger, W. Salzmann, T. G. Mullins, R. Wester, and M. Weidemüller "Optimal control of multiphoton ionization of Rb₂ molecules in a MOT", *Phys. Rev. A*, Vol. 76, P. 063404, (2007).
- [22] S. M. Weber, F. Sauer, M. Plewicky, A. Merli, L. Wöste, A. Lindinger, "Multi-objective optimization on alkali dimers", *J. of Mod. Opt.*, Vol. 54, P. 2659-2666, (2007)

- [21] F. Sauer, A. Merli, L. Wöste, and A. Lindinger "High resolution coherent control measurements on KRb" *Chem. Phys.*, Vol 334, P. 138-143, (2007)
- [20] A. Merli, F. Sauer, L. Wöste, and A. Lindinger "Isotopomer selective optimization of $^{39}\text{K}^{85}\text{Rb}^+$ and $^{41}\text{K}^{87}\text{Rb}^+$ using optimal control", *Eur. Phys. J. D*, Vol. 42, P. 217-220, (2007)
- [19] A. Lindinger, S. M. Weber, A. Merli, F. Sauer, M. Plewicki, and L. Wöste "Controlling the dynamical pathways in the ionization processes of NaK dimers", *Femtochemistry VII: Fundamental Ultrafast Processes in Chemistry, Physics, and Biology*, M. Kimble, W. Castleman Jr. (editors), Elsevier, Amsterdam, ISBN 0444528210, P. 479-489, (2006).
- [18] F. Sauer, A. Merli, M. Plewicki, S. M. Weber, L. Wöste and A. Lindinger: "Coherent Control of Isotope Selective Ionization and Fragmentation of Potassium", *Femtochemistry VII: Fundamental Ultrafast Processes in Chemistry, Physics, and Biology*, M. Kimble, W. Castleman Jr. (editors), Elsevier, Amsterdam, ISBN 0444528210, P. 490-494, (2006).
- [17] A. Lindinger, S. M. Weber, A. Merli, F. Sauer, M. Plewicki, and L. Wöste "Optimal control methods applied on the ionization processes of alkali dimers" *J. Photochem. and Photobiol. A*, Vol. 180, P. 256, (2006)
- [16] W. Salzmann, U. Poschinger, R. Wester, M. Weidemüller, A. Merli, S. M. Weber, F. Sauer, M. Plewicki, F. Weise, A. Mirabal Esparza, L. Wöste, and A. Lindinger "Coherent control with shaped femtosecond laser pulses applied to ultracold molecules", *Phys. Rev. A*, Vol 73, P. 023414, (2006)
(Article has been selected for the March 2006 issue of Virtual Journal of Ultrafast Science, access at: <http://www.vjulfrafast.org>)
- [15] A. Lindinger, A. Merli, M. Plewicki, F. Vetter, S. M. Weber, and L. Wöste "Optimal control of isotope selective fragmentation", *Chem. Phys. Lett.*, Vol 413, P. 315-320, (2005)
- [14] S. M. Weber, A. Lindinger, F. Vetter, M. Plewicki, A. Merli, and L. Wöste "Application of parametric time and frequency domain shaping", *Eur. Phys. J. D* Vol 33, P. 39-42, (2005)
- [13] F. Vetter, M. Plewicki, A. Lindinger, A. Merli, S. M. Weber, and L. Wöste "Optimized isotope selective ionization of $^{23}\text{Na}^{39}\text{K}$ and $^{23}\text{Na}^{41}\text{K}$ by applying evolution strategies", *Phys. Chem. Chem. Phys.* Vol. 7, P.1-6, (2005)
- [12] A. Lindinger, S. M. Weber, C. Lupulescu, F. Vetter, M. Plewicki, A. Merli, L. Wöste, A. F. Bartelt, and H. Rabitz "Revealing spectral field features and mechanistic insights by control pulse cleaning", *Phys. Rev. A*, Vol. 71, P. 013419, (2005).
(Article has been selected for the February 2005 issue of Virtual Journal of Ultrafast Science, access at: <http://www.vjulfrafast.org>)
- [11] A. Lindinger, C. Lupulescu, F. Vetter, M. Plewicki, S. Weber, A. Merli, and L. Wöste "Learning from the acquired optimized pulse shapes about the isotope selective ionization of potassium dimers", *J. Chem. Phys.* Vol.122, P. 024312, (2005).

- [10] A. Lindinger, F. Vetter, C. Lupulescu, M. Plewicki, S. M. Weber, A. Merli, and L. Wöste "Selective ionization via different electronic pathways by optimal control demonstrated for $^{23}\text{Na}^{39}\text{K}/^{23}\text{Na}^{41}\text{K}$ ", *Chem. Phys. Lett.* Vol. 397, P. 123-127, (2004)
- [9] C. Lupulescu, Š. Vajda, A. Lindinger, A. Merli, and L. Wöste "Femtosecond investigations on the ultrafast photodissociation dynamics of $\text{CpMn}(\text{CO})_3$ and its fragment ions", *Phys. Chem. Chem. Phys.* Vol. 6, P. 3420-3425, (2004)
- [8] A. Lindinger, C. Lupulescu, M. Plewicki, F. Vetter, A. Merli, S. M. Weber, and L. Wöste "Isotope Selective Ionization by Optimal Control Using Shaped Femtosecond Laser Pulses", *Phys. Rev. Lett.* Vol. 93(3), P. 03301, (2004)
- [7] A. Lindinger, C. Lupulescu, M. Plewicki, F. Vetter, S. Weber, A. Merli and L. Wöste "Closed loop optimization of the ionization process in NaK: Learning from the optimal pulse shape" in *Femtochemistry and Femtobiology: Ultrafast Molecular Events in Molecular Science*, ed. M. Martin and J.T.Hynes, Elsevier, Amsterdam, ISBN 0-444-51656-5, P.111-114, (2004)
- [6] C. Lupulescu, A. Lindinger, A. Merli, M. Plewicki, and L. Wöste "Free phase optimization of $\text{CpMn}(\text{CO})_2^+$ as a fragment of $\text{CpMn}(\text{CO})_3$ 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, ISBN 0-444-51656-5, P.123-126, (2004)
- [5] C. Lupulescu, A. Lindinger, M. Plewicki, A. Merli, S. M. Weber and L. Wöste "Frequency dependent optimization of the ionization process in NaK by means of fs-pulses" *Chem. Phys.* Vol. 269, P. 63-69, (2004)
- [4] C. Daniel, J. Full, L. González, C. Lupulescu, J. Manz, A. Merli, Š. Vajda and L. Wöste "Deciphering the Reaction Dynamics Underlying Optimal Control Laser Fields" *Science*, Vol. 299, P. 536, (2003)
- [3] 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* Vol. 24, P. 173-176, (2003)
- [2] Š. Vajda, C. Lupulescu, A. Lindinger, A. Merli, and L. Wöste "Control of Photoinduced Processes by Optimally Shaped Laser Pulses in $\text{MnCp}(\text{CO})_3$: Recovering the Information Content Coded in the Optimal Pulse Form" *Ultrafast Phenomena XIII*, Editors: R.J.D. Miller, M.M. Murnane, N.F. Scherer, and A.M. Weiner, Springer, Chemical Physics Series 71, ISBN 3-540-00089-5, (2003)
- [1] Š. Vajda, C. Lupulescu, A. Merli, F. Budzyn, L. Wöste, M. Hartmann, J. Pittner and V. Bonačić-Koutecký "Observation and Theoretical Description of Periodic Geometric Rearrangement in Electronically Excited Nonstoichiometric Sodium-Fluoride Clusters" *Phys. Rev. Lett.* Vol. 89(21), P.2134041, (2002)