

List of publications

PhD candidate:

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CTU, FNSPE, Department of Physical Electronics

Supervisor:

doc. Ing. Ladislav Pína, DrSc.

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Ing. Jaroslav Nejd, Ph.D.

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1 PhD candidate's H-index

WoS (25.8.2023): 6

Scopus (25.8.2023): 7

2 Publications in peer-reviewed journals related to research in doctoral thesis

- [1] **M. Albrecht**, M. Kozlová, and J. Nejd, *Pulse duration of a partially coherent soft X-ray laser estimated from far-field speckle statistics*, Optics Letters, Vol. 43, No. 19, pp. 4586-4589, 2018.
- [2] (Submitted article) **M. Albrecht**, O. Hort, M. Kozlová, and J. Nejd, *Beyond Young's double-slit experiment: Spatial coherence of a soft X-ray source measured in a single-shot*, 2023.

- [3] O. Hort, M. Albrecht, V. E. Nefedová, O. Finke, D.-D. Mai, S. Reyné, F. Giambruno, F. Frassetto, L. Poletto, J. Andreasson, J. Gautier, S. Sebban, and J. Nejd, *High-flux source of coherent XUV pulses for user applications*, Optics Express, Vol. 27, No. 6, pp. 8871-8883, 2018.
- [4] E. Klimešová, O. Kulyk, Z. Hoque, A. H. Roos, K. P. Khakurel, M. Rebarz, L. Jurkovičová, M. Albrecht, O. Finke, R. Lera, O. Hort, D.-D. Mai, J. Nejd, M. Sokol, R. B. Fink, L. B. Ltaief, D. Westphal, A. Wolf, T. Laštovička, F. Frassetto, L. Poletto, J. Andreasson, and M. Krikunová, *A Multipurpose End-Station for Atomic, Molecular and Optical Sciences and Coherent Diffractive Imaging at ELI Beamlines*, The European Physical Journal Special Topics, Vol. 230, pp. 4183-4194, 2021.

3 Other publications in peer-reviewed journals

- [5] V. Nefedová, M. Albrecht, and J. Nejd, *Development of a high-flux XUV source based on high-order harmonic generation*, Journal of Electron Spectroscopy and Related Phenomena, Vol. 220, pp. 9-13, 2017.
- [6] V. E. Nefedová, M. F. Ciappina, O. Finke, M. Albrecht, J. Vábek, M. Kozlová, N. Suárez, E. Pisanty, M. Lewenstein, and J. Nejd, *Determination of the spectral variation origin in high-order harmonic generation in noble gases*, Physical Review A, Vol. 98, No. 3, p. 33414, 2018.
- [7] V. E. Nefedová, M. F. Ciappina, O. Finke, M. Albrecht, M. Kozlová, and J. Nejd, *Efficiency control of high-order harmonic generation in gases using driving pulse spectral features*, Applied Physics Letters, Vol. 113, No. 19, p. 191101, 2018.
- [8] J. Nejd, J. Vančura, K. Boháček, M. Albrecht, and U. Chaulagain, *Imaging Michelson interferometer for a low-density gas jet characterization*, Review of Scientific Instruments, Vol. 90, No. 6, 2019.
- [9] S. Espinoza, F. Samparisi, F. Frassetto, S. Richter, M. Rebarz, O. Finke, M. Albrecht, L. Jurkovičová, O. Hort, N. Fabris, A. Zymaková, D.-D. Mai, R. Antipenkov, J. Nejd, L. Poletto, and J. Andreasson, *Characterization of the high harmonics source for the VUV ellipsometer at ELI Beamlines*, Journal of Vacuum Science & Technology B, Vol. 38, No. 2, p. 024005, 2020.
- [10] A. Zymaková, M. Albrecht, R. Antipenkov, A. Špaček, S. Karatodorov, O. Hort, J. Andreasson, and J. Uhlig, *First experiments with a water-jet plasma X-ray source driven by the novel high-power-high-repetition rate L1 Allegra laser at ELI*

Beamlines, Journal of Synchrotron Radiation, Vol. 28, No. 6, pp. 1778-1785, 2021.

- [11] O. Finke, J. Vábek, M. Nevřkla, N. Bobrová, O. Hort, L. Jurkovičová, **M. Albrecht**, A. Jančárek, F. Catoire, S. Skupin, and J. Nejd, *Phase-matched high-order harmonics generation in pre-ionized noble gases*, Scientific Reports, Vol. 12, No. 7715, 2022.
- [12] A. H. Roos, Z. Hoque, E. Klimešová, L. B. Ltaief, C. Medina, L. Jurkovičová, **M. Albrecht**, O. Finke, O. Hort, J. Nejd, M. Mudrich, J. Andreasson, and M. Krikunová, *Electron correlation dynamics in atomic Kr excited by XUV pulses and controlled by NIR laser pulses of variable intensity*, New Journal of Physics, Vol. 25, No. 013038, 2023.
- [13] C. Medina, A. Lægdsmand, L. B. Ltaief, Z. Hoque, A. H. Roos, L. Jurkovičová, O. Hort, O. Finke, **M. Albrecht**, J. Nejd, F. Stienkemeier, J. Andreasson, E. Klimešová, M. Krikunová, A. Heidenreich, and M. Mudrich, *Long-lasting XUV activation of helium nanodroplets for avalanche ionization*, New Journal of Physics, Vol. 25, No. 053030, 2023.
- [14] (Submitted article) L. Jurkovičová, L. B. Ltaief, A. H. Roos, O. Hort, O. Finke, **M. Albrecht**, Z. Hoque, E. Klimešová, A. Sundaralingam, R. Antipenkov, A. Grenfell, A. Špaček, W. Szuba, M. Krikunová, M. Mudrich, J. Nejd, and J. Andreasson, *Bright continuously-tunable VUV source for ultrafast spectroscopy*, 2023.
- [15] (Submitted article) O. Finke, J. Vábek, M. Dvořáček, L. Jurkovičová, **M. Albrecht**, H. Ovcharenko, O. Hort, and J. Nejd, *Monochromatic high-order harmonic generation by Bessel-Gauss beam in periodically modulated media*, 2023.

4 Publications in conference proceedings

- [16] **M. Albrecht**, M. Kozlova, and J. Nejd, *Radiation Properties of Ni-like Molybdenum X-ray Laser at PALS*, Proceedings of SPIE, Vol. 10243, p. 1024310, 2017.
- [17] K. Boháček, M. Kozlová, U. Chaulagain, V. Horný, M. Krůs, **M. Albrecht**, and J. Nejd, *Generation of laser-driven femtosecond electron beams for secondary photon sources with 7 TW Ti-sapphire laser system at PALS*, Proceeding of the 43rd EPS Conference on Plasma Physics, paper P1.079, 2016.
- [18] M. Kozlová, J. Nejd, **M. Albrecht**, S. Sebban, J. Gautier, K. Ta Phuoc, A. Klisnick, A. Le Marec, and F. Tissandier, *Overview of Development of Laser Driven Secondary Sources at PALS and ELI*, X-Ray Lasers 2014, Vol. 169, p. 35, 2016.

- [19] J. Nejd, V. Nefedová, **M. Albrecht**, V. Horny, M. Kozlová, S. Sebban, K. Ta-Phuoc, J. Gautier, and G. Korn, *Laser-driven Short-wavelength Sources at PALS and ELI Beamlines*, High-Brightness Sources and Light-Driven Interactions, Optical Society of America, paper ET2A.4, 2016.
- [20] J. Nejd, M. Kozlová, V. Nefedová, **M. Albrecht**, M. Krůs, J. Gautier, and S. Sebban, *Overview of Laser-Driven Coherent Short-Wavelength Sources at PALS and ELI Beamlines*, Springer Proceedings in Physics, Vol. 202, pp. 3-10, 2018.
- [21] J. Nejd, V. E. Nefedová, D.-D. Mai, N. Nowak, **M. Albrecht**, O. Finke, M. Kozlova, M. F. Ciappina, O. Hort, J. Gautier, S. Sebban, and G. Korn, *User-oriented kHz laser driven sources of XUV and X-rays at ELI Beamlines*, Compact EUV & X-ray Light Sources, paper EW2B.6, 2018.
- [22] J. Nejd, D.-D. Mai, U. Chaulagain, O. Hort, O. Finke, **M. Albrecht**, M. Jurkovič, R. Lera, S. Karatodorov, M. Lamač, J. Vančura, K. Boháček, S. Espinoza, S. Richter, M. Rebarz, E. Klimešová, M. Krikunová, M. Kozlová, R. Antipenkov, F. Batysta, J. Novák, J. T. Green, J. Andreasson, and G. Korn, *Progress on laser-driven X-ray sources at ELI Beamlines*, Proceedings of SPIE, X-ray Lasers and Coherent X-ray Sources: Development and Applications, paper ETh5A.6, 2019.
- [23] O. Finke, O. Hort, **M. Albrecht**, V. E. Nefedová, D.-D. Mai, F. Giambruno, S. Reyne, L. Poletto, F. Frassetto, J. Gautier, S. Sebban, R. Antipenkov, F. Batysta, R. Boge, J. Naylon, Z. Hubka, T. Green, P. Bakule, and J. Nejd, *User-oriented high-harmonic source at ELI beamlines*, OSA High-brightness Sources and Light-driven Interactions Congress, paper EM2A.2, 2020.
- [24] O. Hort, **M. Albrecht**, O. Finke, M. Jurkovič, R. Lera, D.-D. Mai, E. Klimešová, S. Espinoza, S. Richter, R. Antipenkov, F. Batysta, J. Novák, J. T. Green, J. Andreasson, M. Krikunová, and J. Nejd, *ELI beamlines user oriented high-harmonic beamline*, OSA High-brightness Sources and Light-driven Interactions Congress, paper EM2A.2, 2020.
- [25] J. Nejd, U. Chaulagain, O. Hort, D.-D. Mai, R. Lera, S. Karatodorov, **M. Albrecht**, M. Jurkovič, O. Finke, M. Lamač, R. Raclavský, and J. Vábek, *New generation of laser-driven X-ray sources at ELI beamlines*, OSA High-brightness Sources and Light-driven Interactions Congress, paper ETh5A.6, 2020.
- [26] S. Espinoza, F. Samparisi, M. Zahradnik, **M. Albrecht**, O. Finke, R. Antipenkov, O. Hort, M. Rebarz, M. Jurkovič, L. Poletto, J. Nejd, and J. Andreasson, *XUV Reflection and Ellipsometry Experiments at ELI Beamlines*, OSA High-brightness Sources and Light-driven Interactions Congress, paper JW1A.23, 2020.

- [27] J. Nejd, U. Chaulagain O. Hort, D.-D. Mai, **M. Albrecht**, L. Jurkovičová, O. Finke, S. Karatodorov, M. Raclavský, M. Lamač, E. Klimešová, Z. Hoque, A. H. Roos, M. Krikunová, and J. Andreasson, *Update on laser-driven X-ray sources at ELI Beamlines*, Proceedings of SPIE, Vol. 11886, p. 1188608, 2020.
- [28] U. Chaulagain, S. Karatodorov, M. Raclavský, S. Lorenz, M. Lamač, **M. Albrecht**, V. Tomkus, J. Dudutis, M. MacKevičiute, P. Gečys, and J. Nejd, *Tomographic characterization of gas jets for laser-plasma acceleration with increased sensitivity*, Proceedings of SPIE, Vol. 11886, No. 118860A, 2021.
- [29] J. Nejd, U. Chaulagain, O. Hort, D.-D. Mai, **M. Albrecht**, M. Jurkovič, O. Finke, S. Karatodorov, M. Raclavský, M. Lamač, E. Klimešová, Z. Hoque, A. H. Roos, M. Krikunová, and J. Andreasson *Update on laser-driven X-ray sources at ELI Beamlines*, Proceedings of SPIE, Vol. 11886, No. 1188608, 2021.
- [30] J. Nejd, U. Chaulagain, D.-D Mai, O. Hort, M. Lamač, M. Raclavský, **M. Albrecht**, M. Jurkovič, O. Finke, J. Vábek, Y. Pulnova, and S. V. Bulanov, *Update on Laser-driven X-ray Sources at ELI Beamlines*, Optica High-brightness Sources and Light-driven Interactions Congress, paper ETh5A.6, 2022.
- [31] O. Finke, J. Vábek, M. Nevrkla, N. Bobrova, O. Hort, M. Jurkovič, **M. Albrecht**, A. Jančárek, F. Catoire, S. Skupin, and J. Nejd, *Phase-matched absorption-limited HHG using pre-ionization*, The International Conference on Ultrafast Phenomena (UP), paper Th4A.21, 2022.
- [32] M. Jurkovič, O. Hort, O. Finke, **M. Albrecht**, A. H. Roos, Z. Hoque, K. Shaw, E. Klimešová, L. B. Ltaief, J. Andreasson, M. Krikunová, M. Mudrich, R. Antipenkov, A. Grenfell, A. Špaček, W. Szuba, and J. Nejd, *Continuously tunable UV-driven high-intensity HHG source for user applications*, The International Conference on Ultrafast Phenomena (UP), paper Th4A.23, 2022.