

# Curriculum Vitae

## Personal Data

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## Education

**Ph.D.** 1999 - 2001 High Frequency and Quantum Electronics Laboratory (IHQ),  
University of Karlsruhe, Germany  
**Major:** High repetition rate solid-state lasers in theory and experiment  
**Title:** Continuous mode-locking of solid state lasers  
**Advisor:** Prof. F. X. Kärtner

**M.S.** 1992 - 1999 Swiss Federal Institute of Technology (ETH), Zürich, Switzerland  
**Major:** Quantum electronics  
**Thesis:** 'Stability-analysis of fiber- and waveguide lasers with high repetition rates.' Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts. (1998 - 1999)  
**Advisors:** Prof. F. X. Kärtner (MIT) and Prof. P. Günter (ETH)

## Appointments & Affiliations

- [2020-present] Professor of Physics at the University of Colorado, Boulder, USA.
- [2014-present] Fellow Adjunct of JILA, Boulder, CO, USA.
- [2022] JSPS Visiting Professor at the University of Electro-Communications (UEC), Chofu, Japan.
- [2019-2020] Associate Chair of Physics at the University of Colorado, Boulder, USA.
- [2019-2020] Director of the Engineering Physics Program at the University of Colorado, Boulder, USA.
- [2015-2020] Associate Professor of Physics at the University of Colorado, Boulder, USA.
- [2015-2020] Associate Professor Adjoint, Department of Electrical, Computer, and Energy Engineering (ECEE) at the University of Colorado at Boulder, USA.
- [2015] Visiting Professor at the University of Electro-Communications (UEC), Chofu, Japan.
- [2011-2015] Assistant Professor Adjoint, Department of Electrical, Computer, and Energy Engineering (ECEE) at the University of Colorado at Boulder, USA.
- [2008-2015] Assistant Professor of Physics at the University of Colorado, Boulder, CO, USA.

- [2008-2014] Member of JILA, Boulder, CO, USA.
- [2006-2008] Senior research associate at JILA/University of Colorado, Boulder CO, USA.
- [2003-2006] Research staff and postdoctoral fellow at the National Institute of Advanced Industrial Science and Technology/National Metrology Institute of Japan, (AIST/NMIJ), Lengths and dimensions division, Tsukuba, Japan.
- [2001-2003] Postdoctoral Associate at the Massachusetts Institute of Technology (MIT), member of MIT-Harvard CUA, and the MIT-RLE Optics and Quantum Electronics Group, Cambridge MA, USA.
- [1999-2001] Ph.D. candidate at University of Karlsruhe, Germany.
- [1998-1999] Visiting Graduate Scholar at the Massachusetts Institute of Technology (MIT), USA.
- [1994] Software development at ED&F MAN Management AG, Pfäffikon, Switzerland.

### Work for Professional Societies

- [2020-2022] Member of the program committee for CLEO Pacific RIM, Sapporo, Japan, 2022.
- [2019-2020] Member of the program committee for CLEO Pacific RIM, Singapore, 2020.
- [2016-2017] Member of the program committee of the 6th Advanced Lasers and Photon Sources Conference (ALPS'17), Yokohama, Japan.
- [2015-2016] Member of the program committee of the 5th Advanced Lasers and Photon Sources Conference (ALPS'16), Yokohama, Japan.
- [2014-2015] General co-Chair of CLEO S&I USA 2015, San Jose, CA, USA.
- [2012-2013] Program co-Chair of CLEO S&I USA 2013, San Jose, CA, USA.
- [2011-2013] Member of the organizing committee of the 2013 CLEO Pacific RIM, Kyoto, Japan.
- [2010-2011] Chair of the Time and Frequency Metrology conference (part of the SPIE International Symposium on SPIE Optical Engineering + Applications)
- [2010-2011] Organizer of the Scientific Seminar on Optical Frequency Metrology at the 2011 URSI General Assembly (2011 URSIGA).
- [2009-2011] Member of the CLEO/QUELS subcommittee on optical metrology.
- [2009] Organizer of a special CLEO symposium on optical frequency combs.
- [2008-2009] Member of the CLEO-Europe subcommittee on ultrafast optics.
- [2007-2009] Chair of CLEO/QUELS subcommittee on optical metrology.
- [2007-present]: Reviewer for funding agencies: NSF, NASA, SNSF (Switzerland), NSERC (Canada), KAIST (Korea) and others.
- [2000-present] Articles refereed for: Nature Photonics, Optics Letters, Optics Express, Appl. Phys. Lett., Appl. Phys. B, JOSA B, Nano Letters, New Journal of Physics, IEEE PTL, IEEE JQE, IEEE JSTQE and others.

## Affiliations with Professional Societies

- Fellow of Optica (formerly the Optical Society of America / OSA)
- Lifetime Member of the American Physical Society (APS)

## Teaching

*Teaching at the University of Karlsruhe, Germany:*

1999 - 2001      Instructor for 'Laboratory in Optical Communication and RF-Devices and Measurement Techniques'

*Classroom Teaching at the University of Colorado at Boulder:*

Fall 2008      PHYS 2130: 'Modern Physics for Scientists and Engineers' co-teaching with Prof. D. Dessau.  
Spring 2009      PHYS 1110: 'Calculus-based introductory Physics I' co-teaching with Prof. M. Dubson.  
Fall 2009      PHYS 3310: 'Upper division E&M for physics majors' w/ optional weekly tutorials.  
Spring 2010      PHYS 2130: 'Modern Physics for Scientists and Engineers'  
Fall 2010      Recitations to PHYS1110: 'Calculus-based introductory Physics I'  
Spring 2011      PHYS 1120: 'Calculus-based Introductory Physics II' co-teaching with Prof. A. Marino.  
Fall 2011      PHYS 2130: 'Modern Physics for Scientists and Engineers'  
Spring 2012      PHYS 3330: 'Electronics for the physical Sciences'  
Fall 2012      PHYS 3330: 'Electronics for the physical Sciences'  
Spring 2014      PHYS 1120: 'Calculus-based Introductory Physics II' co-teaching with Prof. E. Cornell  
Fall 2014      PHYS 1110H: Honors section of 'Calculus-based Introductory Physics I,'  
Spring 2015      PHYS 3310/3311: 'Upper division E&M for physics majors' w/ optional weekly tutorials.  
Fall 2016      PHYS 2150: 'Experimental Physics 2'  
Spring 2017      PHYS 3310/3311: 'Upper division E&M for physics majors' w/optional weekly tutorials.  
Fall 2017      PHYS 5160: 'Laser Fundamentals' Complete course revamp.  
Spring 2018      PHYS 4410: 'Quantum Mechanics II'  
Fall 2018      PHYS 5160: 'Laser Fundamentals'  
Spring 2019      PHYS 4410: 'Quantum Mechanics II'  
Fall 2019      PHYS 5160: 'Laser Fundamentals'  
Spring 2020      PHYS 2130: 'Modern Physics for Scientists and Engineers'  
Fall 2020      PHYS 5160: 'Laser Fundamentals'  
Fall 2021      PHYS 5160: 'Laser Fundamentals'  
Spring 2022      PHYS 2130: 'Modern Physics for Scientists and Engineers'  
Fall 2023      PHYS 2170: 'Foundations of Modern Physics'  
Spring 2024      PHYS 4410: 'Quantum Mechanics II'

## Patent applications

- T. R. Schibli, F. X. Kärtner, U. Morgner, 'Modelocked Laser,' (Az. PCT/EP00/13138 and Az. DE 199 62 047.4). Filed in 1999.
- T. R. Schibli, F. X. Kärtner, W. Seitz, 'Method for controlling the dynamics of laser systems,' (Az. PCT/EP02/08104). Filed in 2000.
- F. X. Kärtner, W. Seitz, U. Morgner, T. R. Schibli, E. R. Thoen, 'Nonlinear Fabry-Perot,' (Az. PCT/EP02/01922 and Az. DE 101 09 084.6). Filed in 2001
- M. E. Fermann, T. R. Schibli, I. Hartl, 'Compact Optical Frequency Comb Systems' (U.S. patent 8,792,525) initial filing in 2012; granted in 2014.
- T. R. Schibli, 'Monolithic Mode-Locked Laser' Pat.# 10,804,672, Issue Date Oct. 13, 2020.
- IP protection filing: T. R. Schibli, 'Photonic-based microwave generator and associated methods,' 2021.

## Scientific Articles in Journals and Books

### Post-Conference Articles and Book Chapters

1. F. X. Kärtner, U. Morgner, R. Ell, Ch. Jirauschek, G. Metzler, T. R. Schibli, Y. Chen, H. A. Haus, E. P. Ippen, J. Fujimoto, V. Scheuer, G. Angelow, T. Tschudi, 'Challenges and Limitations on Generating Few Cycle Laser Pulses directly from Oscillators,' *Ultrafast Phenomena XII*, Springer Series in Chemical Physics, pp. 51-55, (2000).
2. T. R. Schibli, K. E. Robinson, U. Morgner, S. Mohr, D. Kopf, and F. X. Kärtner, 'Control of Q-switching instabilities in passively mode-locked lasers,' *OSA TOPS Vol. 68*, *Advanced Solid-State Lasers*, M. E. Fermann and L. R. Marshall, eds. 2002, Optical Soc. of America (2002).
3. T. R. Schibli, J. Kim, O. Kuzucu, J. T. Gopinath, S. N. Tandon, G. S. Petrich, L. A. Koldziejski, J. G. Fujimoto, E. P. Ippen, F. X. Kaertner, 'Attosecond active synchronization of passively mode-locked lasers using balanced cross-correlation,' accepted for reprint in *OSA Trends in Optics and Photonics Series (TOPS) on Advanced Solid-State Photonics* (2003).
4. I. Hartl, G. Imeshev, G. C. Cho, M. E. Fermann, T. R. Schibli, K. Minoshima, A. Onae, F.-L. Hong, H. Matsumoto, J. W. Nicolson, M. F. Yan, 'Carrier envelope phase locking of an in-line, low-noise Er fiber system,' *OSA Trends in Optics and Photonics Series (TOPS) 94*, *Advanced Solid-State Photonics*, Gregory J. Quarles, ed. (Optical Society of America, Washington, DC), pp. 176-178 (2004).
5. T.R. Schibli, K. Minoshima, F.-L. Hong, H. Inaba, A. Onae, H. Matsumoto, I. Hartl, M.E. Fermann, 'Frequency Metrology with a Turnkey All-Fiber System,' *Proceedings of the 14th international conference on ultrafast phenomena XIV*, T. Kobayashi, Springer Verlag pp. 843-5 (2005).
6. I. Hartl, L. Dong, M. E. Fermann, T. R. Schibli, A. Onae, F.-L. Hong, H. Inaba, K. Minoshima, H. Matsumoto, 'Fiber Based Frequency Comb Lasers,' *OSA Trends in Optics and Photonics Series (TOPS)*, *Advanced Solid-State Photonics 2005*, Optical Society of America, Washington, DC, (2005).

7. T. R. Schibli, K. Minoshima, H. Kataura, E. Itoga, N. Minami, S. Kazaoui, K. Miyashita, M. Tokumoto, and Y. Sakakibara, 'Carbon nanotube based saturable absorber mirrors and their application to ultrashort pulse-generation,' submitted to the proceedings of the 5th international conference on ultrafast optics, Springer Series in Optical Sciences, Springer Verlag, Germany (2005).
8. T. R. Schibli, I. Hartl, D. C. Yost, M. J. Martin, A. Marcinkevicius, M. E. Fermann, and J. Ye, 'High-power, mHz linewidth Yb: fiber optical frequency comb for high harmonic generation,' Ultrafast Phenomena XVI, Springer Series in Chemical Physics **92**, Eds. P. Corkum, S. De Silvestri, K. A. Nelson, E. Riedle, R. W. Schoenlein, Springer, ISBN: 978-3-540-95945-8 (2009).

### Peer-reviewed Journal Articles and Book Chapters

9. F. X. Kärtner, N. Matuschek, T. Schibli, U. Keller, H. A. Haus, C. Heine, R. Morf, V. Scheuer, M. Tilsch, and T. Tschudi, 'Design and fabrication of double-chirped mirrors,' Optics Letters **22**, pp. 831-833 (1997).
10. E. R. Thoen, E. M. Koontz, M. Joschko, P. Langlois, T. R. Schibli, F. X. Kärtner, E. P. Ippen, and L. A. Kolodziejki: 'Two-photon absorption in semiconductor saturable absorber mirrors,' Applied Phys. Lett. **74**, 26, pp. 3927-3929 (1999).
11. T. R. Schibli, E. R. Thoen, F. X. Kärtner, and E. P. Ippen, 'Suppression of Q-switched modelocking and break-up into multiple pulses by inverse saturable absorption,' Appl. Phys. B **70**(Suppl.), S41-S49 (2000).
12. F. X. Kärtner, U. Morgner, R. Ell, T. R. Schibli, J. G. Fujimoto, E. P. Ippen, V. Scheuer, G. Angelow, and T. Tschudi, 'Ultrabroadband Double-Chirped Mirror Pairs for Octave Spectrum Generation, Journal of the Optical Society of America **B**, **18** pp. 882-885 (2001).
13. T. R. Schibli, U. Morgner, and F. X. Kärtner, 'Control of Q-switched mode locking by active feedback,' Optics Letters **26**, 3, pp. 148ff (2001).
14. U. Morgner, R. Ell, G. Metzler, T. R. Schibli, F. X. Kärtner, J. G. Fujimoto, H. A. Haus, and E. P. Ippen, 'Nonlinear optics with phase-controlled pulses in the sub-two-cycle regime,' Physical Review Letters, **86**, 5462-5465, (2001).
15. T. R. Schibli, T. Kremp, U. Morgner, F. X. Kärtner, R. Butendeich, J. Schwarz, H. Schweizer, F. Scholz, J. Hetzler, and M. Wegener, 'CW operation and Q-switched mode-locking of Cr<sup>4+</sup>:YAG micro-chip lasers,' Optics Letters **26**, 12, pp. 941ff (2001).
16. W. Seitz, T. R. Schibli, U. Morgner, F. X. Kärtner, C. H. Lange, W. Richter, and B. Braun, 'Passive Synchronization of two Independent Laser Oscillators with a Fabry-Perot-Modulator,' Optics Letters **27**, pp. 454ff (2002).
17. A. M. Kowalevicz, Jr., T. R. Schibli, F. X. Kärtner, and J. G. Fujimoto, 'Ultralow-threshold Kerr-lens mode-locked Ti:Al<sub>2</sub>O<sub>3</sub> lasers,' Opt. Lett. **27**, pp. 1-3 (2002).
18. W. Seitz, R. Ell, U. Morgner, T. R. Schibli, F. X. Kärtner, M. J. Lederer, and B. Braun, 'All-optical Active Mode-locking with a Nonlinear Semiconductor Modulator,' Optics Letters **27**, pp. 2209ff (2002).

19. P. C. Wagenblast, U. Morgner, F. Grawert, T. R. Schibli, F. X. Kaertner, V. Scheuer, G. Angelow, M. J. Lederer, 'Generation of sub-10-fs pulses from a Kerr-lens mode-locked Cr<sup>3+</sup>:LiCAF laser oscillator by use of third-order dispersion-compensating double-chirped mirrors,' *Opt. Lett.* **27**, 1726-1728 (2002).
20. R. Ell, W. Seitz, U. Morgner, T. R. Schibli and F. X. Kärtner, 'Carrier-envelope phase dynamics of synchronized mode-locked lasers,' *Optics Communications*, Volume 220, Issues 1-3, pp. 211-214 (2003).
21. T. R. Schibli, J. Kim, O. Kuzucu, J. T. Gopinath, S. N. Tandon, G. S. Petrich, L. A. Kolodziejski, J. G. Fujimoto, E. P. Ippen, F. X. Kaertner, 'Attosecond active synchronization of passively mode-locked lasers using balanced cross-correlation,' *Optics Letters*, **28**, 947-949 (2003).
22. T. R. Schibli, O. Kuzucu, J. Kim, E. P. Ippen, J. G. Fujimoto, F. X. Kaertner, V. Scheuer, G. Angelow, 'Towards Single-Cycle Lasersystems,' *IEEE Journal of Selected Topics in Quantum Electronics*, **9**, 4, pp. 990-1001 (2003). (invited)
23. F.-L. Hong, A. Onae, J. Jiang, R. Guo, H. Inaba, K. Minoshima, T. R. Schibli, H. Matsumoto, K. Nakagawa, 'Absolute frequency measurement of an acetylene-stabilized laser at 1542 nm,' *Optics Letters*, **28**, 2324-2326 (2003).
24. F.X. Kaertner, U. Morgner, T. Schibli, R. Ell, H.A. Haus, J.G. Fujimoto, E.P. Ippen, 'Few-cycle pulses directly from a laser,' *Topic. in Appl. Phys.* **95**, 73-135 (2004)
25. H. Inaba, T. Ikegami, F.-L. Hong, A. Onae, Y. Koga, T. R. Schibli, K. Minoshima, H. Matsumoto, S. Yamadori, O. Tohyama, S.-I. Yamaguchi, 'Phase locking of a continuous-wave optical parametric oscillator to an optical frequency comb for optical frequency synthesis,' *IEEE Journal of Quantum Electronics* **40**, 929- 936 (2004).
26. L. Matos, D. Kleppner, O. Kuzucu, T. R. Schibli, J. Kim, E. P. Ippen, F. X. Kaertner, 'Direct frequency comb generation from an octave-spanning, prismless Ti:sapphire laser,' *Optics Letters*, **29**, 1683-1685 (2004).
27. T. R. Schibli, K. Minoshima, F.-L. Hong, H. Inaba, A. Onae, H. Matsumoto, I. Hartl, M. E. Fermann, 'Frequency metrology with a turnkey all-fiber system,' *Optics Letters* **29**, 2467-9 (2004).
28. T. R. Schibli, K. Minoshima, F.-L. Hong, H. Inaba, Y. Bitou, A. Onae, H. Matsumoto, 'Phase-locked widely tunable optical single-frequency generator based on a femtosecond comb,' *Optics Letters*, **30**, 2323-5 (2005).
29. T. R. Schibli, K. Minoshima, H. Kataura, E. Itoga, N. Minami, S. Kazaoui, K. Miyashita, M. Tokumoto, Y. Sakakibara, 'Ultrashort pulse-generation by saturable absorber mirrors based on polymer-embedded carbon nanotubes,' *Optics Express*, **13**, pp.8025-31 (2005).
30. H. Inaba, T. Ikegami, F.-L. Hong, Y. Bitou, A. Onae, T. R. Schibli, K. Minoshima, H. Matsumoto, 'Doppler-free spectroscopy using continuous-wave optical frequency synthesizer,' *Appl. Opt.* **45**, 4910-4915 (2006).
31. H. Inaba, Y. Daimon, F. -L. Hong, A. Onae, K. Minoshima, T. R. Schibli, H. Matsumoto, M. Hirano, T. Okuno, M. Onishi, and M. Nakazawa, 'Long-term measurement of optical frequencies using a simple, robust and low-noise fiber based frequency comb,' *Opt. Express* **14**, 5223-5231 (2006).

32. Y. Bitou, T. R. Schibli, K. Minoshima, 'Accurate wide-range displacement measurement using tunable diode laser and optical frequency comb generator,' *Optics Express*, **14**, pp.644-654 (2006).
33. T. R. Schibli, K. Minoshima, Y. Bitou, F.-L. Hong, H. Inaba, A. Onae, H. Matsumoto, 'Displacement metrology with sub-pm resolution in air based on a fs-comb wavelength synthesizer,' *Optics Express* **14**, 5984-5993 (2006).
34. C. R. Menyuk, J. K. Wahlstrand, J. Willits, R. P. Smith, T. R. Schibli, and S. T. Cundiff, 'Pulse dynamics in mode-locked lasers: relaxation oscillations and frequency pulling,' *Opt. Express* **15**, 6677-6689 (2007).
35. I. Hartl, T. R. Schibli, A. Marcinkevicius, D. C. Yost, D. D. Hudson, M. E. Fermann, and J. Ye, 'Cavity-enhanced similariton Yb-fiber laser frequency comb:  $3 \cdot 10^{14}$  W/cm<sup>2</sup> peak intensity at 136 MHz,' *Opt. Lett.* **32**, 2870-2872 (2007).
36. K. Minoshima, T. R. Schibli, H. Inaba, Y. Bitou, F.-L. Hong, A. Onae, and H. Matsumoto, 'Precision length metrology based on the time and frequency standards using optical combs,' *The Review of Laser Engineering*, **35**, 642-648, The Laser Society of Japan (2007).
37. J. K. Wahlstrand, J. T. Willits, T. R. Schibli, C. R. Menyuk, and S. T. Cundiff, 'Quantitative measurement of timing and phase dynamics in a mode-locked laser,' *Opt. Lett.* **32**, 3426-3428 (2007).
38. E. E. Eyler, D. E. Chieda, M. C. Stowe, M. J. Thorpe, T. R. Schibli, J. Ye, 'Prospects for precision measurements of atomic helium using direct frequency comb spectroscopy,' *Eur. Phys. J. D* **48**, 43-55 (2008).
39. T. R. Schibli, D. C. Yost, M. J. Martin, J. Ye, I. Hartl, A. Marcinkevicius, and M. E. Fermann, 'Optical frequency comb with sub-mHz linewidth and >10 W average power,' *Nature Photonics* **2**, 355 - 359 (2008).
40. D. C. Yost, T. R. Schibli, J. Ye, 'Novel geometry for efficient output coupling of intracavity high harmonic generation,' *Opt. Lett.* **33**, 1099-1101 (2008).
41. D. D. Hudson, K. Shish, T. R. Schibli, J. N. Kutz, D. Christodoulides, R. Morandotti, S. T. Cundiff, 'Nonlinear Femtosecond Pulse Reshaping in Waveguide Arrays,' *Opt. Lett.* **33**, 1440-1442 (2008).
42. T. R. Schibli, 'Combs for dark energy,' *Nature Photonics* **2**, 712-713 (2008). (invited)
43. T. R. Schibli, 'Clever calibration,' *Nature Photonics* **3**, 491-492 (2009). (invited)
44. M. J. Martin, S. M. Foreman, T. R. Schibli, and J. Ye, 'Testing Ultrafast Mode-Locking at Microhertz Relative Optical Linewidth,' *Opt. Expr.* **17**, 558-568 (2009).
45. D. C. Yost, T. R. Schibli, J. Ye, J. L. Tate, J. Hostetter, M. B. Gaarde, K. J. Schafer, 'Vacuum ultraviolet frequency combs from below-threshold harmonics,' *Nature Physics* **5**, 815-820 (2009). (cover story)
46. T. C. Briles, D. C. Yost, A. Cingöz, J. Ye, T. R. Schibli, 'Simple piezoelectric-actuated mirror with 180 kHz servo bandwidth,' *Opt. Express* **18**, 9739-9746 (2010).
47. C.-C. Lee, G. Acosta, J. S. Bunch, T. R. Schibli, 'Ultra-Short Optical Pulse Generation With Single Layer Graphene,' *Journal of Nonlinear Optical Physics & Materials (JNOPM)* **19**, 767-771 (2010).

48. D. D. Hudson, J. N. Kutz, T. R. Schibli, D. N. Christodoulides, R. Morandotti, and S. T. Cundiff, 'Spatial distribution clamping of discrete spatial solitons due to three photon absorption in AlGaAs waveguide arrays,' *Optics Express* **20**, 1939-1944 (2012).
49. C.-C. Lee, J. M. Miller, and T. R. Schibli, 'Doping-induced changes in the saturable absorption of monolayer graphene,' *Applied Physics B* **108**, 129-135 (2012).
50. C.-C. Lee, S. Suzuki, W. Xie, and T. R. Schibli, 'Broadband graphene electro-optic modulators with sub-wavelength thickness,' *Optics Express*, **20**, 5264-5269 (2012).
51. D. D. Hudson, J. N. Kutz, T. R. Schibli, Q. Chao, D. N. Christodoulides, R. Morandotti, and S. T. Cundiff, 'Fixed point attractor for chirp in nonlinear waveguide arrays,' *Physical Review A* **85**, 031806(R) (2012).
52. C.-C. Lee, I. Hartl, C. Mohr, J. Bethge, S. Suzuki, M.E. Fermann, and T. R. Schibli, 'Frequency comb stabilization with bandwidth beyond the limit of gain lifetime by an intra-cavity graphene electro-optic modulator,' *Optics Letters* **37**, 3084-3086 (2012).
53. Seiya Suzuki, Chien-Chung Lee, Takashi Nagamori, Thomas R. Schibli, and Masamichi Yoshimura, 'Nondegradative Dielectric Coating on Graphene by Thermal Evaporation of SiO,' *Jpn. J. Appl. Phys.* **52**, 125102 (2013).
54. C.-C. Lee, T. R. Schibli, 'Intrinsic Power Oscillations Generated by the Backaction of Continuum on Solitons and its Implications on the Transfer Functions of a Mode-Locked Laser,' *PRL* **112**, 223903 (2014).
55. D. Hou, C.-C. Lee, Z. Yang and T. R. Schibli, 'Timing jitter characterization of mode-locked lasers with  $<1$  zs/ $\sqrt{\text{Hz}}$  resolution using a simple optical heterodyne technique,' *Opt. Lett.* **40**, 2985-8 (2015).
56. N. Kuse, C.-C. Lee, J. Jiang, C. Mohr, T. R. Schibli, & M.E. Fermann, 'Ultra-low noise all polarization-maintaining Er fiber-based optical frequency combs facilitated with a graphene modulator,' *Opt. Exp.* **23**, 24342-50 (2015).
57. C.-C. Lee, Y. Hayashi, K. L. Silverman, A. Feldman, T. Harvey, R. P. Mirin, T. R. Schibli, 'Monolithic device for modelocking and stabilization of frequency combs,' *Opt. Exp.* **23**, 33038-43 (2015).
58. N. Kuse, J. Jiang, C.-C. Lee, T. R. Schibli, M. E. Fermann, 'All polarization-maintaining Er fiber-based optical frequency combs with nonlinear amplifying loop mirror,' *Opt. Exp.* **24**, 3095-3102, (2016).
59. Naoya Kuse, Thomas R. Schibli, Martin E. Fermann, 'Low noise electro-optic comb generation by fully stabilizing to a mode-locked fiber comb,' *Opt. Exp.* **24**, 16884-93 (2016).
60. Tyko D. Shoji, Wanyan Xie, Kevin L. Silverman, Ari Feldman, Todd Harvey, Richard P. Mirin, Thomas R. Schibli, 'Ultra-low-noise monolithic mode-locked solid-state laser,' *Optica* **3**, 995-8 (2016).
61. Kevin F. Lee, Grzegorz Kowzan, C.-C. Lee, C. Mohr, Jie Jiang, Peter G. Schunemann, T. R. Schibli, Piotr Maslowski, M. E. Fermann, 'Frequency combs for cavity cascades: OPO combs and graphene-coupled cavities,' *J. Phys. B*, **50**, 014003 (2017).
62. C. Wan, T. R. Schibli, P. Li, C. Bevilacqua, A. Ruehl, and I. Hartl, 'Intensity noise coupling in soliton fiber oscillators,' *Opt. Lett.* **42**, pp. 5266-9 (2017).



63. M. Endo, T. D. Shoji, and T. R. Schibli, 'High-sensitivity optical to microwave comparison with dual-output Mach-Zehnder modulators,' *Scientific Reports* **8**, Article number: 4388 (2018).
64. M. Endo, T. D. Shoji, and T. R. Schibli, 'Ultra-low noise optical frequency combs,' *IEEE JSTQE*, **24**, 1102413 (2018). (invited review article)
65. Yuxuan Ma, Bo Xu, Hirotaka Ishii, Fei Meng, Yoshiaki Nakajima, Thomas R. Schibli, Zhi-gang Zhang, Isao Matsushima, Kaoru Minoshima, 'Low-noise 750 MHz spaced ytterbium fiber frequency combs,' *Optics Letters* **43**, 4136-4139 (2018).
66. Mamoru Endo, Thomas R. Schibli, 'Residual phase noise suppression for Pound-Drever-Hall cavity stabilization with an electro-optic modulator,' *OSA Continuum* **1**, pp. 116-123 (2018).
67. Manoj Kalubovilage, Mamoru Endo, and Thomas R. Schibli, 'Ultra-low phase noise microwave generation with a free-running monolithic femtosecond laser,' *Optics Express* **28**, pp. 25400-9, (2020).
68. Wataru Kokuyama, Hideaki Nozato, and Thomas R. Schibli, 'Phase meter based on zero-crossing counting of digitized signals,' <https://arxiv.org/abs/2009.01137>; to appear in *Review of Scientific Instruments* (2022).
69. N. V. Nardelli, T. M. Fortier, M. Pomponio, E. Baumann, C. Nelson, T. R. Schibli, and A. Hati, '10 GHz Generation with Ultra-Low Phase Noise via the Transfer Oscillator Technique,' *APL Photonics* **7**, 026105 (2022).
70. Manoj Kalubovilage, Mamoru Endo, and Thomas R. Schibli, 'Free Running Monolithic Frequency Comb Based X-Band Microwave Generation Below -180 dBc/Hz Phase Noise,' *Optics Express* **30**(7) 11266-11274 (2022).
71. T. N. Nguyen and T. R. Schibli, 'Temperature-shift-suppression scheme for two-photon two-color rubidium vapor clocks,' *Phys. Rev. A* **106**, 053104, 2022.
72. N. V. Nardelli, H. Leopardi, T. R. Schibli, and T. M. Fortier, 'Optical and microwave metrology at the  $10^{-18}$  level with an Er/Yb:glass frequency comb,' *Laser and Photonics Rev.* 202200650, Wiley-VCH GmbH (2023). DOI: 10.1002/lpor.202200650
73. H. Tian, R. Zhu, R. Li, S. Xing, T. R. Schibli, and K. Minoshima, 'Broadband, high-power optical frequency combs covering visible to near-infrared spectral range,' *Optics Letters* **49**, pp. 538-541 (2024) <https://doi.org/10.1364/OL.514182>
74. T.N. Nguyen, T. R. Schibli, 'FPGA-based residual amplitude modulation suppression and control for compact atomic clocks,' accepted for publication in *Review of Scientific Instruments*, AIP Publishing, (2024).
75. P. Koviri, H. Komori, H. Tian, M. Ishizeki, T. Kato, A. Asahara, R. Shimizu, T.R. Schibli, and Kaoru Minoshima, 'Single-photon level ultrafast time-resolved measurement using two-color dual-comb-based asynchronous linear optical sampling,' accepted for publication in *Applied Physics Express (APEX)*, IOP Science (2024).

## Talks and Presentations

### Invited talks, seminars, colloquia, and guest lectures

1. U. Morgner\*, R. Ell, G. Metzler, T. R. Schibli, F. X. Kaertner, J. G. Fujimoto, E. P. Ippen, 'Nonlinear optics with phase-controlled pulses in the sub-two cycle regime, Paper QFC, Quantum Electronics and Laser Science Conference (QUELS 2001), Baltimore, USA (2001).
2. F. X. Kaertner\*, T. R. Schibli, O. Kuzucu, J. Kim, L. Matos, J. G. Fujimoto and E. P. Ippen, 'Towards Single-Cycle Optical Pulses,' Paper MJ2, OSA Annual Meeting, Tucson Arizona, USA (2003).
3. T. R. Schibli, 'Active Control of Ultrafast Lasers,' Seminar at the National Metrology Institute of Japan (NMIJ/AIST), Tsukuba, Japan, April (2003).
4. T. R. Schibli, 'Active Control of Ultrafast Lasers, Part I,' seminar at the University of Tokyo, Hongo campus, group of Prof. T. Kobayashi, Tokyo Japan, July (2003).
5. T. R. Schibli, 'Active Control of Ultrafast Lasers, Part II,' seminar at the University of Tokyo, Hongo campus, group of Prof. T. Kobayashi, Tokyo Japan, July (2003).
6. Ingmar Hartl\*, L. Dong, M. E. Fermann, T. R. Schibli, A. Onae, F. L. Hong, H. Inaba, K. Minoshima, H. Matsumoto, 'Fiber Based Frequency Comb Lasers and Their Applications,' Paper WE4, Advanced Solid-State Photonics (ASSP), Vienna, Austria (2005).
7. T. R. Schibli\*, K. Minoshima, F.-L. Hong, H. Inaba, Y. Bitou, A. Onae, H. Matsumoto, 'A femtosecond comb-based widely tunable optical frequency reference for spectroscopy,' Paper 5.2.4., 14th International Laser Physics Workshop (LPHYS 2005), Kyoto, Japan, July 4-8, (2005).
8. T. R. Schibli, 'An introduction to optical synthesis,' Seminar Series on Optical Quantum Coherence, National Metrology Institute of Japan (NMIJ/AIST), Tsukuba, Japan, Oct. (2005).
9. Y. Sakakibara\*, K. Kintaka, T. Itatani, S. Matsuzaki, T. R. Schibli, K. Minoshima, S. Namiki, E. Itoga, M. Tokumoto, K. Ishida and H. Kataura, 'Nonlinear optical devices based on carbon nanotubes,' invited paper OThQ1, Optical Fiber Communication Conference (OFC), Anaheim, California, USA (2006).
10. T. R. Schibli, 'Cw optical frequency and wavelength synthesis and applications in precision metrology,' Optics and Quantum Electronics Seminar Series, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA, Nov. (2006).
11. T. R. Schibli, 'Spectroscopy at the ultimate resolution - precision test using cold atoms and molecules,' Gordon Conference on Electronic Spectroscopy and Dynamics, Les Diablerets, Switzerland, Sept. 10-15 (2006).
12. T. R. Schibli, 'Femtosecond enhancement cavities,' 37th Winter Colloquium on The Physics of Quantum Electronics (PQE), Snowbird, Utah (2007).
13. I. Hartl\*, A. Marcinkevicius, M. E. Fermann, T. R. Schibli, D. D. Hudson, D. C. Yost, and J. Ye, 'Xe Plasma Generated by a Cavity Enhanced Yb-Similariton Laser Based Fiber Frequency Comb,' Paper ThB3 in Nonlinear Optics: Materials, Fundamentals and Applications, OSA Technical Digest, Optical Society of America (2007).

14. T. R. Schibli\*, and J. Ye, 'Femtosecond enhancement cavities,' Paper 1.1.4., 16th International Laser Physics Workshop (LPHYS 2007), Leon, Mexico, Aug. 20-24 (2007).
15. T. R. Schibli, 'Nuclear clocks: Measuring time with atomic cores,' Physics colloquium, University of Hannover, Hannover, Germany, June 4th (2008).
16. D. Yost\*, T. Schibli, and J. Ye, 'EUV optical frequency combs,' Paper WEoB.2, Europhoton conference, Paris, France (2008).
17. T. R. Schibli, 'The ultrafast revolution: How ultrashort optical pulses revolutionized optical metrology,' Series of four lectures at the Inter-Continental Advanced Materials for Photonics Summer/Winter School (iCamp), Sydney-Brisbane, Australia (2010).
18. T. R. Schibli, 'Graphene: Cutting-edge research on an everyday material,' Lecture as part of the Science Discovery series on Nanotechnology at the University of Colorado (2011).
19. T. R. Schibli, 'Ultrafast Graphene Optoelectronics,' CNL/NNIN Workshop on Graphene, October 7 (2011).
20. T. R. Schibli, 'Graphene electro-optic devices for mode-locking and laser stabilization,' OFM+ADI joint seminar at NIST Boulder, January 10 (2012).
21. T. R. Schibli, 'Graphene devices for ultrafast laser science,' Condensed Matter Seminar Series, University of Colorado Boulder, March (2013).
22. T. R. Schibli, 'Optical and electronic properties of graphene,' National Nanoinfrastructure Network (NNIN) seminar at the Colorado Nanofabrication Laboratory (CNL), July (2013).
23. T. R. Schibli, 'Ultrafast optics with Graphene,' Ultrafast Optics Conference, Davos Congress Centre, Switzerland, March 2-8 (2013).
24. T. R. Schibli, 'Graphene devices for ultra-low noise optical frequency combs,' The 3rd Advanced Lasers and Photon Sources Conference (ALPS'14), Yokohama, Japan (2014).
25. T. R. Schibli, 'Frequency combs at the fundamental limit,' Seminar Talk at the University of Electrocommunication, Chofu, Tokyo, Japan, April 25, 2014.
26. C.C. Lee\*, T. R. Schibli, 'Frequency Combs at the Fundamental Limit using Graphene Modulators,' Advanced Solid State Lasers, Shanghai, China, November 16-21 (2014).
27. T. R. Schibli, 'Chasing away the noise in short-pulse lasers,' Physics Colloquium at the University of Colorado at Boulder, Oct. 8, (2014).
28. C.-C. Lee, D. Hou, Z. Yang, T. R. Schibli\*, 'Ultra-low Phase Noise Frequency Combs,' Paper FTu2E.1, Frontiers in Optics (FIO) (2015).
29. Thomas R. Schibli, 'An Ultra-low Noise Monolithic Mode-Locked Laser,' ERATO seminar, University of Electro-Communication (UEC), Chofu, Japan, July 26 (2016).
30. Thomas R. Schibli, 'Ultra-low noise combs in the palm of your hand,' Abstract A29.00003, APS March Meeting, March 13-17, New Orleans, Louisiana (2017).
31. Mamoru Endo and Thomas R. Schibli\*, 'Ultra-low-noise Monolithic Mode-locked Solid-state Lasers,' Advanced Solid State Lasers, Paper ATu5A.3, Boston, USA (2018).

32. Mamoru Endo\*, Tyko D. Shoji, Thomas R. Schibli, 'Ultra-low phase noise microwave generation and high-sensitivity phase noise characterization by femtosecond optical sampling,' paper 18p-231A-1, 79th Autumn meeting of the Japanese Society of Applied Physics (JS-AP), Sep. 18 - 21, Nagoya, Japan (2018). (Invited Young Scientist Presentation Award Speech)
33. Mamoru Endo, Manoj Kalubovilage, Thomas R. Schibli\*, 'Physics and applications of monolithic mode-locked lasers with ultra-low intrinsic noise,' presented at the Advanced Lasers and Photon Sources Conference (ALPS'19), Yokohama, Japan (2019).
34. T. R. Schibli, 'Ultra-low noise mode-locked lasers,' seminar talk at Furukawa Electric, Soga, Chiba, Japan, April 26 (2019).
35. T. R. Schibli, 'A brief introduction to Optical Frequency Combs,' seminar talk at the University of Tokushima, Laboratory for Advanced Photonics, Tokushima, Japan, July 18 (2019).
36. T. R. Schibli, 'Making microwaves with light at the quantum limit and beyond,' Physics Colloquium at the University of Colorado at Boulder, Nov. 6, (2019).
37. T. R. Schibli, 'Making microwaves with light at the quantum limit and beyond,' Paper HP-1-26-1, 22nd Photonics North conference (2020).
38. T. R. Schibli, 'Photonic microwave generation and characterization at the quantum limit and beyond,' Seminar talk at the Quantum Science Research Center, The University of Electro-Communications, Chofu, Japan, Oct. 14th (2022).
39. N. V. Nardelli\*, T. M. Fortier, M. Pomponio, E. Baumann, C. Nelson, T. R. Schibli, A. Hati, 'Precision optical and microwave synthesis of atomic clock frequencies with optical frequency combs,' SPIE Photonics West (2022).
40. T. R. Schibli, 'Photonic microwave generation and characterization with optical frequency combs,' Presented at the Advanced Lasers and Photon Sources Conference (ALPS'23), Yokohama, Japan (2023).
41. T. N. Nguyen, M. Endo, M. Kalubovilage, T. R. Schibli\*, 'Microwave Photonics with Frequency Combs,' Paper SF2F.1 Presented at CLEO 7-12 May (2023).
42. N. V. Nardelli\*, H. Leopardi, T.R. Schibli, T. M. Fortier, 'Metrology at the  $10^{-18}$  level with an Er/Yb:glass Laser frequency comb,' SPIE Photonics West (2023).
43. N. V. Nardelli\*, H. Leopardi, T. R. Schibli, T. M. Fortier, 'An Er/Yb:glass Frequency Comb for Precision Optical and Microwave Synthesis,' IEEE EFTF/IFCS, Toyama, Japan, 5/16 - 5/19 (2023).
44. T.R. Schibli, 'Photonic microwave generation & characterization beyond the standard quantum limit,' seminar talk at the Okinawa Institute of Technology (OIST), 1/16 (2024).

\*presenter, if more than one author listed.

**Domestic Conferences in Europe, USA, Japan** (*not always peer reviewed*).

45. T. R. Schibli, U. Morgner und F. X. Kärtner, 'Kontrolle von gütegeschalteter Modenkopplung durch aktive Rückkopplung,' Paper Q 12.9, Frühjahrstagung Bonn 2000, Deutsche Physikalische Gesellschaft, Germany (2000).
46. F. X. Kärtner, U. Morgner, T. R. Schibli, P. Wagenblast und T. Tschudi, 'Doppelt-Gechirpte Spiegel mit einer Oktave Bandbreite,' Paper Q 19.4, Frühjahrstagung Bonn 2000, Deutsche Physikalische Gesellschaft, Germany (2000).
47. T. Kremp, T. R. Schibli, U. Morgner, F. X. Kärtner, W. Freude und A. Sharma, 'Schneller Eigenmode-Löser für inhomogene Resonatoren', Paper Q 19.2, Frühjahrstagung Berlin 2001, Deutsche Physikalische Gesellschaft, Germany (2001).
48. U. Morgner, R. Ell, Ch. Jiauscheck, P. Wagenblast, T. R. Schibli, F. X. Kärtner, H. A. Haus, E. P. Ippen, J. G. Fujimoto, V. Scheuer, G. Angelow und T. Tschudi, 'Erzeugung und Anwendung von Laserimpulsen im Ein- bis Zwei-Zyklen-Bereich', Paper Q 8.2, Frühjahrstagung Berlin 2001, Deutsche Physikalische Gesellschaft, Germany (2001).
49. T. R. Schibli, O. Kuzucu, J. Kim, E. P. Ippen, J. G. Fujimoto, F. X. Kaertner, 'Attosecond active synchronization of modelocked lasers using balanced cross-correlation,' The Japan Society of Applied Physics (JSAP), Fall meeting, Fukuoka, Kyushu, Japan (2003).
50. T. R. Schibli, I. Hartl, M. Fermann, K. Minoshima, A. Onae, F.-L. Hong, H. Matsumoto, G. Imeshev, G. C. Cho, J. W. Nicholson, M.F. Yan, 'Low noise carrier envelope phase locking in an all-fiber optical frequency comb,' The Japan Society of Applied Physics (JSAP), Spring meeting, Hajioji, Japan (2004).
51. K. Minoshima, Y. Iino, T. R. Schibli, K. Kumagai, H. Matsumoto, 'Femtosecond comb distance meter: Development of a prototype system,' The Japan Society of Applied Physics (JSAP) Fall meeting, Sendai, Japan (2004).
52. T. R. Schibli, K. Minoshima, F.-L. Hong, H. Inaba, Y. Bitou, A. Onae, H. Matsumoto, 'The optical equivalent to a microwave frequency synthesizer,' The Japan Society of Applied Physics (JSAP), Spring meeting, Saitama, Japan (2005).
53. Y. Daimon, H. Inaba, K. Minoshima, T. R. Schibli, F.-L. Hong, A. Onae, M. Onishi, T. Okuno, M. Hirano, M. Nakazawa, H. Matsumoto, 'Development of a practical optical comb system using a mode-locked fiber laser,' Paper 10a-B11, The Japan Society of Applied Physics (JSAP), Fall meeting, Tokushima, Japan (2005).
54. T. R. Schibli, K. Minoshima, H. Kataura, N. Minami, S. Kazaoui, K. Miyashita, M. Tokumoto, Y. Sakakibara, '77fs from an Er/Yb:glass laser mode-locked by a carbon nanotube saturable absorber mirror,' Paper 11a-B5, The Japan Society of Applied Physics (JSAP), Fall meeting, Tokushima, Japan (2005).
55. J. M Miller, C.-C. Lee, T. R. Schibli, 'A Systematic Study of Techniques to Directly Measure the Saturable Absorption of Graphene,' Abstract ID: BAPS.2010.4CF.E1.1, Annual Meeting of the Four Corners Section of the American Physical Society, Volume 55, Number 9, Ogden, Utah, USA (2010).
56. N. Keschl, C.-C. Lee, W. Xie, T. Schibli, 'The optical properties of using graphene as a saturable absorber,' Presentation C4.00003 at the Annual Meeting of the Four Corners Section of the American Physical Society, Socorro, New Mexico, USA (2012).

57. C.-C. Lee, T. Nagamori, T. Schibli, M. Yoshimura, 'Nondegradative Dielectric Coating of Graphene using Thermal Evaporation of SiO,' Abstract V1.00328, APS March Meeting 2013, Volume 58, Number 1 (2013).
58. Yoshiaki Nakajima, Thomas R. Schibli, Kaoru Minoshima, 'Development of optical frequency comb interferometer based on BOC and Optical Heterodyne Technique,' The 63rd JSAP Annual Spring Meeting, Okayama, Japan, March 19-22 (2016).
59. Y. Hayashi, C.-C. Lee, K. L. Silverman, A. Feldman, T. Harvey, R. P. Mirin, T. R. Schibli, 'III-V Hybrid Modulator for Modelocking and Stabilization of an Optical Frequency Comb,' The 63rd JSAP Annual Spring Meeting, Okayama, Japan, March 19-22 (2016).
60. Hirotaka Ishii, Bo Xu, Yuxuan Ma, Isao Matsushima, Yoshiaki Nakajima, Thomas Schibli, Zhiqiang Zhang, Kaoru Minoshima, 'Low noise, high output power from a high repetition rate Yb fiber comb,' paper 20a-B301-2, The 65th JSAP Spring Meeting, Japanese Society of Applied Physics, March 17-20, Waseda University, Japan (2018).
61. Mamoru Endo, Tyko D. Shoji and Thomas R. Schibli, 'High-Sensitivity Microwave Phase Noise Characterization with Dual-Output Mach-Zehnder Modulators and a femtosecond pulse train,' Paper 20p-F202-2, The 65th Spring Meeting of the Japanese Society of Applied physics, Nishi-waseda Campus, Waseda University, Japan (2018). (Won the Best Presentation Award.)
62. Mamoru Endo, Thomas R. Schibli, 'Residual frequency noise reduction for Pound-Drever-Hall cavity stabilization with an electro-optical modulator,' paper 19p-438-7, The 79th Autumn JSAP Meeting, Japanese Society of Applied Physics, Sept. 18 - 21, Nagoya Congress Center, Japan (2018).
63. K. Prasad, H. Komori, M. Ishizeki, H. Tian, T. R. Schibli, T. Kato, A. Asahara, R. Shimizu1, and K. Minoshima, 'Single-photon-level Ultrafast Cross-correlation Detection with Photon Counting Based on Two-color Asynchronous Optical Sampling,' presented at the 1st UEC-SAARC Symposium on Emerging Technologies, Chofu, Japan (2022).
64. H. Komori, P. Koviri, M. Ishizeki, H. Tian, T.R. Schibli, T. Kato, A. Asahara, R. Shimizu, K. Minoshima, 'High-speed and high-sensitivity asynchronous optical sampling method using dual-wavelength synchronous optical combs with high repetition rate,' Paper 16p-A502-9 presented at the 70th Spring Meeting of the Japanese Society of Applied Physics (2023).
65. T. N. Nguyen, T. R. Schibli, 'Temperature-shift suppression scheme for two-photon two-color rubidium vapor clocks,' DAMOP 2023: The 54th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, Spokane, Washington, USA, 6/5 - 6/9 (2023).
66. A. Plocki, T.N. Nguyen, T.R. Schibli, 'Two-color Rubidium clock with AC Stark Shift Suppression,' Paper N02.00005, APS Four Corners Section 2023 Meeting (2003). This presentation won best student presentation award.

#### **Peer-reviewed International Conference-Papers**

67. T. R. Schibli, E. R. Thoen, E. M. Koontz, F. X. Kärtner, E. P. Ippen, L. A. Kolodziej-ski, 'Suppression of modelocked Q-switching and multiple pulse break-up by two-photon absorption,' Ultrafast Optics 1999, Paper P8, Ascona, Switzerland (1999).

68. U. Morgner, F. X. Kärtner, T. Schibli, P. Wagenblast, J. G. Fujimoto, E. P. Ippen, V. Scheuer, G. Angelow, T. Tschudi, M. J. Lederer, A. Boiko, and B. Luther-Davies, 'Ultrabroadband Double-Chirped Mirror Pairs covering one octave of bandwidth,' International Conference on Lasers and Electro-Optics (CLEO 2000), Paper CThE5, SanFranzisco, USA (2000).
69. T. R. Schibli, U. Morgner, and F. X. Kärtner, 'Control of Q-switched mode locking by active feedback,' International Conference on Lasers and Electro-Optics (CLEO 2000), Paper CThD6, SanFranzisco, USA (2000).
70. U. Morgner, R. Ell, T. R. Schibli, P. Wagenblast, F. X. Kärtner, 'Double-chirped mirror pairs covering one octave of bandwidth,' Paper CMB2, international conference on lasers and electro-optics Europe (CLEO-Europe 2000), IEEE, Nizza, France (2000).
71. T. R. Schibli, T. Kremp, U. Morgner, and F. X. Kärtner, '250 mW from a 1 cm Cr<sup>4+</sup>:YAG microchip laser,' Paper CWH6, international conference on lasers and electro-optics Europe (CLEO-Europe 2000), IEEE, Nizza, France (2000).
72. T. R. Schibli, T. Kremp, U. Morgner, W. Seitz, F. X. Kärtner, R. Butendeich, J. Schwarz, H. Schweizer, F. Scholz, J. Hetzler, and M. Wegener, 'Cr<sup>4+</sup>:YAG Mikrochip Laser,' Paper Q 33.1, Seventh European Conference on Atomic and Molecular Physics (ECAMP VII), Berlin, Germany (2001).
73. T. R. Schibli, T. Kremp, U. Morgner, F. X. Kärtner, R. Butendeich, J. Schwarz, H. Schweizer, F. Scholz, J. Hetzler, and M. Wegener, 'Mode-locking of Cr<sup>4+</sup>:YAG micro-chip lasers,' International Conference on Lasers and Electro-Optics (CLEO 2001), Paper CThP, Baltimore, USA (2001).
74. T. R. Schibli, T. Kremp, U. Morgner, F. X. Kärtner, R. Butendeich, J. Schwarz, H. Schweizer, F. Scholz, J. Hetzler, and M. Wegener, 'CW and Q-switched mode-locked Cr<sup>4+</sup>:YAG micro-chip lasers,' Advanced Solid-State Lasers 2001, Seattle WA, USA (2001).
75. W. Seitz, T. R. Schibli, U. Morgner, F. X. Kärtner, C. H. Lange, W. Richter, B. Braun, 'All optical passive synchronization of two independent laser oscillators,' Advanced Solid-State Lasers (ASSL 2002), Paper WD5, Quebec City, Canada (2002).
76. T. R. Schibli, K. E. Robinson, U. Morgner, F. X. Kärtner, 'Suppression of Q-switching instabilities in passively mode-locked high repetition-rate and high-power lasers,' Advanced Solid-State Lasers (ASSL 2002), Paper WD6, Quebec City, Canada (2002).
77. W. Seitz, U. Morgner, T. R. Schibli, F. X. Kärtner, C. H. Lange, W. Richter, B. Braun, 'All optical passive synchronization of two independent laser oscillators,' Paper CThZ1, International Conference on Lasers and Electro-Optics (CLEO 2002), Long Beach, California, USA (2002).
78. W. Seitz, R. Ell, U. Morgner, T. R. Schibli, F. X. Kärtner, C. H. Lange, W. Richter, B. Braun, 'Intracavity fabry-perot-modulator: Characterization and modeling,' Paper CWA9, International Conference on Lasers and Electro-Optics (CLEO 2002), Long Beach, California, USA (2002).
79. A. M. Kowalevicz Jr., T. R. Schibli, R. P. Prasankumar, F. X. Kaertner, J. G. Fujimoto, 'Ultra-low-threshold, low cost, Kerr lens modelocked Ti:Al<sub>2</sub>O<sub>3</sub> laser,' Paper CME5, International Conference on Lasers and Electro-Optics (CLEO 2002), Long Beach, California, USA (2002).

80. W. Seitz, R. Ell, U. Morgner, T. R. Schibli, F. X. Kärtner, C. H. Lange, W. Richter, B. Braun, 'Optical modulator for passive synchronization and active modelocking of lasers,' Paper ME6, The Thirteenth International Conference on Ultrafast Phenomena, Vancouver, Canada (2002).
81. T. R. Schibli, L. M. Matos, F. J. Grawert, J. G. Fujimoto, F. X. Kärtner, 'Continuum generation from a prism-less Ti:Sapphire laser,' Paper TuC5, The Thirteenth International Conference on Ultrafast Phenomena, Vancouver, Canada (2002).
82. I. Hartl, A. Kowalewicz, P. Hsiung, T. H. Ko, T. Schibli, F. Kärtner, J. G. Fujimoto, T. A. Birks, W. J. Wadsworth, U. Bunting, D. Kopf, 'Ultrahigh resolution optical coherence tomography using novel femtosecond laser sources,' Paper TuB4, The Thirteenth International Conference on Ultrafast Phenomena, Vancouver, Canada (2002).
83. R. Ell, W. Seitz, U. Morgner, T. R. Schibli, F. X. Kärtner, 'Detection of carrier-envelope phase shift in picosecond lasers,' Paper WD7, The Thirteenth International Conference on Ultrafast Phenomena, Vancouver, Canada (2002).
84. W. Seitz, T. R. Schibli, U. Morgner, F. X. Kärtner, Ch. Lange, W. Richter, and B. Braun, 'All-Optical Active Modelocking of a ps-Nd:YVO4-laser,' Advanced Solid-State Photonics 2003, San Antonio, Texas, Feb. 2-5 (2003).
85. T. R. Schibli, J. Kim, O. Kuzucu, J. T. Gopinath, S. N. Tandon, G. S. Petrich, L. A. Kolodziejski, J. G. Fujimoto, E. P. Ippen, F. X. Kaertner, 'Attosecond active synchronization of passively mode-locked lasers using balanced cross-correlation,' post deadline paper, Advanced Solid-State Photonics 2003, San Antonio, Texas, Feb. 2-5 (2003).
86. T. R. Schibli, J. Kim, L. Matos, A. W. Killi, J. Gopinath, G. Petrich, S. Tandon, L. A. Kolodziejski and F. X. Kaertner, 'Sub-femtosecond active synchronization of passively mode-locked lasers using balanced cross-correlation,' Conference on Lasers and Electro-Optics (CLEO 2003), Baltimore, MD, June 1-6 (2003).
87. L. Matos, O. Kuzucu, T. R. Schibli, J. G. Fujimoto, E. P. Ippen and F. X. Kaertner, 'Direct Frequency Comb Generation from an Octave Spanning Prismless Ti:sapphire Laser,' Post deadline paper, Conference on Lasers and Electro-Optics (CLEO 2003), Baltimore, MD, June 1-6 (2003).
88. F.X. Kärtner, L. Matos, J. Kim, O. Kuzucu, T. R. Schibli, J. G. Fujimoto, E. P. Ippen, 'An octave spanning prismless Ti:Sapphire laser as direct frequency comb generator,' Paper TuZ3, LEOS 2003.
89. F. X. Kaertner, T. R. Schibli, O. Kuzucu, J. Kim, L. Matos, J. G. Fujimoto and E. P. Ippen, 'Octave-Spanning Lasers and Single-Cycle Pulse Synthesis, Paper MC2.3, Photonics Time and Frequency Measurement and Control, IEEE LEOS Summer Topical Meeting (2003).
90. T. R. Schibli, J. Kim, O. Kuzucu, J. Gopinath, S. N. Tandon, G. S. Petrich, L. A. Kolodziejski, J. G. Fujimoto, E. P. Ippen and F. X. Kaertner, 'Attosecond active synchronization of passively mode-locked lasers using balanced cross-correlation,' The 10th international Workshop on Femtosecond Technology, FST 2003, July 16-17, Makuhari Messe, Chiba, Japan (2003).
91. I. Hartl, G. Imeshev, G.C. Cho, M. E. Fermann, T. R. Schibli, K. Minoshima, A. Onae, F.-L. Hong, H. Matsumoto, J. W. Nicholson, M.F. Yan, 'Carrier envelope phase locking of an in-line, low-noise Er fiber system,' Post deadline paper PD6, Advanced Solid-State Photonics (ASSP), Santa Fe, New Mexico (2004).



92. L. Matos, O. Kuzucu, T. R. Schibli, J.-W. Kim, Erich P. Ippen, D. Kleppner, F. X. Kaertner, 'Direct frequency comb generation from a prism-less Ti:sapphire laser,' Paper CMO1, Conference on Lasers and Electro Optics (CLEO), San Francisco, USA (2004).
93. I. Hartl, T. R. Schibli, G. Imeshev, G. C. Cho, M. E. Fermann, K. Minoshima, A. Onae, F.-L. Hong, H. Matsumoto, J. W. Nicholson, M. F. Yan, 'Carrier envelope phase locking of an in-line, low-noise Er fiber system,' Paper CMO4, Conference on Lasers and Electro Optics (CLEO), San Francisco, USA (2004).
94. K. Minoshima, T. R. Schibli, H. Matsumoto, 'Study on cyclic errors in an optical distance measurement using a frequency comb,' Paper CTuH6, Conference on Lasers and Electro Optics (CLEO), San Francisco, USA (2004).
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