

Aleksandra Foltynowicz

EDUCATION/DEGREES

- Docent** (2018) Faculty of Science and Technology, Umeå University, Sweden
- Postdoctoral** JILA, University of Colorado at Boulder, CO, USA
Advisor: Jun Ye
Cavity-enhanced optical frequency comb spectroscopy
- PhD** (2009) Faculty of Science and Technology, Umeå University, Sweden
Advisor: Ove Axner
“Fiber-laser-based noise-immune cavity-enhanced optical heterodyne molecular spectrometry”
available at <http://umu.diva-portal.org/smash/record.jsf?pid=diva2:214195>
- MSc** (2005) Department of Physics, Adam Mickiewicz University, Poznań, Poland
Advisors: Ove Axner, Ryszard Naskręcki

EMPLOYMENT

- Since 05.2022 **Professor**, Department of Physics, Umeå University, Sweden
- 2018 - 2022 **Associate professor**, Department of Physics, Umeå University, Sweden
- 2012 - 2017 **Assistant professor**, Department of Physics, Umeå University, Sweden
- 2010 - 2012 **Postdoctoral research associate**, JILA, University of Colorado at Boulder, CO, USA
- 2004 - 2009 **Graduate student**, Department of Physics, Umeå University, Sweden

RESEARCH GRANTS

- 2022 - 2026 Knut and Alice Wallenberg Foundation Academy Fellow prolongation
- 2021 - 2026 Swedish Research Council Consolidator Grant
- 2017 - 2020 Swedish Research Council Project Grant
- 2016 - 2021 Knut and Alice Wallenberg Foundation Academy Fellow
- 2015 - 2016 Carl-Trygger Foundation equipment grant
- 2013 - 2016 Swedish Foundation for Strategic Research Ingvar Carlsson Award 5
- 2013 - 2016 Swedish Research Council Junior Researcher Project Grant
- 2014 - 2015 Kempestiftelserna postdoctoral stipend
- 2013 - 2014 Carl-Trygger Foundation equipment grant
- 2013 Stiftelsen Lars Hiertas Minne equipment grant

SCHOLARSHIPS

- 2012 Swedish Research Council homing fellowship
- 2010 - 2011 Swedish Research Council postdoctoral fellowship
- 2010 The Wenner-Gren Foundations postdoctoral fellowship (declined)
- 2003 - 2004 European Physical Society university student fellowship

AWARDS

- 2019 Coblentz Award at ISMS2019 <http://www.coblentz.org/awards/the-coblentz-award>
- 2016 Peter Werle Early Career Scientist Award at FLAIR2016
<https://flair2016.sciencesconf.org/resource/page/id/11.html>
- 2015 Kungliga Skytteanska Samfundets teknisk-naturvetenskapliga priset
- 2013 - 2016 Ingvar Carlsson Award 5 (Swedish Foundation for Strategic Research)

SUPERVISION OF STUDENTS AND POSTDOCS

- PhD Students Adrian Hjältén, Clayton Forssén (co-supervisor), Chuang Lu, Alexandra C. Johansson, Thomas Hausmaninger (co-supervisor), Amir Khodabakhsh
- Postdocs Matthias Germann, Vinicius Silva de Oliveira, Francisco Senna Vieira, Ibrahim Sadiek, Grzegorz Sobon, Lucile Rutkowski, Venkata Ramaiah Badarla, Chadi Abd Alrahman, Hsuan-Chen Chen

EDITORIAL ASSIGNMENTS

- Co-editor of **Applied Physics B**, since Sept 2021
- Co-guest editor of special issue of **Journal of Molecular Spectroscopy** dedicated to 'Frequency combs', 2018

PLENARY AND INVITED TALKS

1. *Comb-based Fourier transform spectroscopy*
The 3rd QUADMARTS workshop, Rennes, France, Nov 2021
2. *High-resolution optical frequency comb Fourier transform spectroscopy*
European Optical Society Annual meeting (EOSAM) 2021, Ultrafast Optical Technologies and Applications, Rome, Italy, Sept 2021 (hybrid/online)
3. *Mid-infrared comb-based Fourier transform spectroscopy*
High-brightness Sources and Light-driven Interactions Congress: Mid-infrared Coherent Sources, Nov 2020 (online)
4. *Optical frequency comb Fourier transform spectroscopy (plenary)*
74th International Symposium on Molecular Spectroscopy, Champaign-Urbana, IL, USA, Jun 2019
5. *Cavity-enhanced comb-based Fourier transform spectroscopy*
13th International User Meeting on Cavity Enhanced Spectroscopy, Madison, WI, USA, Jun 2019
6. *Precision Fourier transform spectroscopy using optical frequency combs*
Conference on Lasers and Electro-Optics: Optical Metrology, San Jose, CA, USA, May 2019
7. *Precision Fourier transform spectroscopy using optical frequency combs (plenary, within 'Spectroscopy for bright future')*
25th Colloquium on High Resolution Molecular Spectroscopy, Helsinki, Finland, Sept 2017
8. *Optical frequency comb spectroscopy*
Optics and Photonics in Sweden, Linköping, Sweden, Nov 2016
9. *Cavity-enhanced optical frequency combs spectroscopy in the near- and mid-infrared*
Laser Applications to Chemical, Security and Environmental Analysis (LACSEA), Heidelberg, Germany, Jul 2016

10. *High-resolution optical frequency comb spectroscopy*
23rd International Conference on Spectral Line Shapes, Toruń, Poland, Jun 2016
11. *Broadband molecular detection with cavity-enhanced optical frequency comb spectroscopy*
Light, Energy and the Environment Congress: Optics and Photonics for Energy & the Environment (E2), Canberra, Australia, Dec 2014
12. *Optical frequency comb spectroscopy*
Swedish Physical Society section for AMO Physics meeting, Nordic Physics Days, Lund, Sweden, Jun 2013
13. *Frequency comb spectroscopy and applications (plenary)*
Field Laser Applications in Industry and Research, Murnau, Germany, Sept 2011
14. *Cavity-enhanced optical frequency comb spectroscopy*
Cavity Enhanced Spectroscopy, Kingston, ON, Canada, Jun 2011

PEER-REVIEWED PUBLICATIONS

1. C. Lu, J. Morville, L. Rutkowski, I. Silander, and **A. Foltynowicz**
Cavity-enhanced frequency comb Vernier spectroscopy (invited review)
Photonics **9**, 222 (2022)
2. I. E. Gordon, L. S. Rothman, R. J. Hargraves, ..., **A. Foltynowicz**, ..., I. Sadiek, ...
The HITRAN2020 molecular spectroscopic database
JQSRT **277**, 107949 (2022)
3. C. Lu, F. Senna Vieira, A. Głuszek, I. Silander, G. Sobon, and **A. Foltynowicz**
Robust, fast and sensitive near-infrared continuous-filtering Vernier spectrometer
Opt. Express **29**, 30155-30167 (2021)
4. K. Krzempek, D. Tomaszewska, **A. Foltynowicz**, and G. Soboń
Fiber-based optical frequency comb at 3.3 μm for broadband spectroscopy of hydrocarbons (invited)
Chinese Opt. Lett. **19**, 081406 (2021)
5. A. Hjältén, M. Germann, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, G. Soboń, and **A. Foltynowicz**
Optical frequency comb Fourier transform spectroscopy of $^{14}\text{N}_2^{16}\text{O}$ at 7.8 μm
J. Quant. Spectrosc. Radiat. Transfer **271**, 107734 (2021)
6. O. Szewczyk, P. Pala, K. Tarnowski, J. Olszewski, F. Senna Vieira, C. Lu, **A. Foltynowicz**, P. Mergo, J. Sotor, G. Soboń, and T. Martynkien
Dual-wavelength pumped highly birefringent microstructured silica fiber for widely tunable soliton self-frequency shift
IEEE J. Lightwave Technol. **39**, 3260-3268 (2021)
7. **A. Foltynowicz**, L. Rutkowski, I. Silander, A. C. Johansson, V. Silva de Oliveira, O. Axner, G. Soboń, T. Martynkien, P. Mergo, and K. K. Lehmann
Sub-Doppler double-resonance spectroscopy of methane using a frequency comb probe
Phys. Rev. Lett. **126**, 063001 (2021)
8. **A. Foltynowicz**, L. Rutkowski, I. Silander, A. C. Johansson, V. Silva de Oliveira, O. Axner, G. Soboń, T. Martynkien, P. Mergo, and K. K. Lehmann
Measurement and assignment of double-resonance transitions to the 8900-9100 cm^{-1} levels of methane
Phys. Rev. A **103**, 022810 (2021)

9. I. Sadiiek, A. Hjältén, F. Senna Vieira, C. Lu, M. Stuhr, and **A. Foltynowicz**
Line positions and intensities of the ν_4 band of methyl iodide using mid-infrared optical frequency comb Fourier transform spectroscopy
J. Quant. Spectr. Radiat. Transf. **255**, 197263 (2020)
10. A. Głuszek, F. Senna Vieira, A. Hudzikowski, A. Wąż, J. Sotor, **A. Foltynowicz**, and G. Soboń
Compact mode-locked Er-doped fiber laser for broadband cavity-enhanced spectroscopy
Appl. Phys B **126**, 137 (2020)
11. K. Krzempek, D. Tomaszewska, A. Gluszek, T. Martynkien, P. Mergo, J. Sotor, **A. Foltynowicz**, and G. Soboń
Stabilized all-fiber source for generation of tunable broadband f_{CEO} -free mid-IR frequency comb in the 7-9 μm range
Opt. Express **27**, 37435-45 (2019)
12. C. Lu, F. Senna Vieira, F. M. Schmidt, and **A. Foltynowicz**
Time-resolved continuous-filtering Vernier spectroscopy of H_2O and OH radical in a flame
Opt. Express **27**, 29521-33 (2019)
13. I. Sadiiek, T. Mikkonen, M. Vainio, J. Toivonen, and **A. Foltynowicz**
Optical frequency comb photoacoustic spectroscopy
Phys. Chem. Chem. Phys. **20**, 27849-55 (2018)
14. A. C. Johansson, L. Rutkowski, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, and **A. Foltynowicz**
Broadband calibration-free cavity-enhanced complex refractive index spectroscopy using a frequency comb
Opt. Express **26**, 20633-48 (2018)
15. A. C. Johansson, J. Westberg, G. Wysocki, and **A. Foltynowicz**
Optical frequency comb Faraday rotation spectroscopy
Appl. Phys. B **124**, 79 (2018)
16. L. Rutkowski, **A. Foltynowicz**, F. M. Schmidt, A. C. Johansson, A. Khodabakhsh, A. A. Kyuberis, N. F. Zobov, O. L. Polyansky, S. N. Yurchenko, and J. Tennyson
An experimental water line list at 1950 K in the 6250-6670 cm^{-1} region
J. Quant. Spectr. Radiat. Transf. **205**, 213-219 (2018)
17. L. Rutkowski, P. Masłowski, A. C. Johansson, A. Khodabakhsh, and **A. Foltynowicz**
Optical frequency comb Fourier transform spectroscopy with sub-nominal resolution and precision beyond the Voigt profile
J. Quant. Spectr. Radiat. Transf. **204**, 63-73 (2018)
18. L. Rutkowski, A. C. Johansson, G. Zhao, T. Hausmaninger, A. Khodabakhsh, O. Axner, and **A. Foltynowicz**
Sensitive and broadband measurement of dispersion in a cavity using a Fourier transform spectrometer with kHz resolution
Opt. Express **25**, 21711-18 (2017)
19. A. Khodabakhsh, L. Rutkowski, J. Morville, and **A. Foltynowicz**
Mid-infrared continuous-filtering Vernier spectroscopy using a doubly resonant optical parametric oscillator
Appl. Phys. B **123**, 210 (2017)
20. G. Soboń, T. Martynkien, P. Mergo, L. Rutkowski, and **A. Foltynowicz**
High-power frequency comb source tunable from 2.7 to 4.2 μm based on difference frequency generation pumped by an Yb-doped fiber laser (editor's choice)
Opt. Lett. **42**, 1748-51 (2017)

21. A. C. Johansson, L. Rutkowski, A. Khodabakhsh, and **A. Foltynowicz**
Signal line shapes of Fourier transform cavity-enhanced frequency modulation spectroscopy with optical frequency combs
J. Opt. Soc. Am. B **34**, 358-365 (2017)
22. L. Rutkowski, A. C. Johansson, D. Valiev, A. Khodabakhsh, A. Tkacz, F. M. Schmidt, and **A. Foltynowicz**
Detection of OH in an atmospheric flame at 1.5 μm using optical frequency comb spectroscopy
Phot. Lett. Pol. **8**, 110-112 (2016)
23. A. Khodabakhsh, V. Ramaiah-Badarla, L. Rutkowski, A. C. Johansson, K. F. Lee, J. Jiang, C. Mohr, M. E. Fermann, and **A. Foltynowicz**
Fourier transform and Vernier spectroscopy using an optical frequency comb at 3-5.4 μm
Opt. Lett. **41**, 2541-44 (2016)
24. P. Masłowski, K. F. Lee, A. C. Johansson, A. Khodabakhsh, G. Kowzan, L. Rutkowski, A. A. Mills, C. Mohr, J. Jiang, M. E. Fermann, and **A. Foltynowicz**
Surpassing the path-limited resolution of a Fourier transform spectrometer with frequency combs
Phys. Rev. A **93**, 021802(R) (2016)
25. A. Khodabakhsh, A. C. Johansson, and **A. Foltynowicz**
Noise-immune cavity-enhanced optical frequency comb spectroscopy: a sensitive technique for high-resolution broadband molecular detection
Appl. Phys. B **119**, 87-95 (2015)
26. P. Ehlers, A. C. Johansson, I. Silander, **A. Foltynowicz**, and O. Axner
Use of etalon-immune-distances to reduce the influence of background signals in frequency modulation spectroscopy and noise-immune cavity-enhanced optical heterodyne molecular spectroscopy
J. Opt. Soc. Am B **31**, 2938-45 (2014)
27. A. Khodabakhsh, C. Abd Alrahman, and **A. Foltynowicz**
Noise-immune cavity-enhanced optical frequency comb spectroscopy
Opt. Lett. **39**, 5034-38 (2014)
28. C. Abd Alrahman, A. Khodabakhsh, F. M. Schmidt, Z. Qu, and **A. Foltynowicz**
Cavity-enhanced optical frequency comb spectroscopy of high-temperature H_2O in a flame
Opt. Express **22**, 13889-95 (2014).
29. P. Ehlers, J. Wang, I. Silander, **A. Foltynowicz**, and O. Axner
Fiber-laser-based NICE-OHMS incorporating an optical circulator
Opt. Lett. **39**, 279-282 (2014)
30. I. Silander, M. Zelan, O. Axner, F. Arrhen, L. Pendrill, and **A. Foltynowicz**
Optical measurement of the gas number density in a Fabry-Perot cavity
Meas. Sci. Instr. **24**, 105207 (2013)
31. **A. Foltynowicz**, P. Masłowski, A. J. Fleisher, B. J. Bjork, and J. Ye
Cavity-enhanced optical frequency comb spectroscopy in the mid-infrared – application to trace detection of hydrogen peroxide
Appl. Phys. B **110**, 163–175 (2013)
32. M. Golkowski, C. Golkowski, J. Leszczynski, R. Plimpton, P. Masłowski, **A. Foltynowicz**, J. Ye, and B. McCollister
Hydrogen peroxide enhanced nonthermal plasma effluent for biomedical applications
IEEE Trans. Plasma Sci. **40**, 1984-91 (2012)

33. **A. Foltynowicz**, T. Ban, P. Maslowski, F. Adler, and J. Ye
Quantum-noise-limited optical frequency comb spectroscopy (editor's choice and selected for a Viewpoint in Physics)
Phys. Rev. Lett. **107**, 233002 (2011)
34. **A. Foltynowicz**, I. Silander, and O. Axner
Reduction of background signals in fiber-based NICE-OHMS
J. Opt. Soc. Am. B **28**, 2797-2805 (2011)
35. **A. Foltynowicz**, P. Maslowski, T. Ban, F. Adler, K. C. Cossel, T. C. Briles, and J. Ye
Optical frequency comb spectroscopy
Faraday Disc. **150**, 23-31 (2011)
36. F. Adler, P. Maslowski, **A. Foltynowicz**, K. C. Cossel, T. C. Briles, I. Hartl, and J. Ye
Mid-infrared Fourier transform spectroscopy with a broadband frequency comb
Opt. Express **18**, 21861-21872 (2010)
37. **A. Foltynowicz**, J. Wang, P. Ehlers, and O. Axner
Distributed-feedback-laser-based NICE-OHMS in the pressure-broadened regime
Opt. Express **18**, 18580-18591 (2010)
38. F. M. Schmidt, W. Ma, **A. Foltynowicz**, and O. Axner
Highly sensitive dispersion spectroscopy by probing the free spectral range of an optical cavity using dual-frequency modulation
Appl. Phys. B **101**, 497-509 (2010)
39. **A. Foltynowicz**, W. Ma, F. M. Schmidt, and O. Axner
Wavelength modulated noise-immune cavity-enhanced optical heterodyne molecular spectroscopy signal line shapes in the Doppler limit
J. Opt. Soc. Am. B **26**, 1384-1394 (2009)
40. **A. Foltynowicz**, W. Ma, and O. Axner
Characterization of fiber-laser-based sub-Doppler NICE-OHMS for trace gas detection
Opt. Express **16**, 14689-14702 (2008)
41. **A. Foltynowicz**, F. M. Schmidt, W. Ma, and O. Axner
Noise-immune cavity-enhanced optical heterodyne molecular spectroscopy: Current status and future potential
Appl. Phys. B **92**, 313-326 (2008)
42. O. Axner, W. Ma, and **A. Foltynowicz**
Sub-Doppler dispersion and noise-immune cavity-enhanced optical heterodyne molecular spectroscopy revised
J. Opt. Soc. Am. B **25**, 1166-1177 (2008)
43. **A. Foltynowicz**, W. Ma, F. M. Schmidt, and O. Axner
Doppler-broadened noise-immune cavity-enhanced optical heterodyne molecular spectroscopy signals from optically saturated transitions under low pressure conditions
J. Opt. Soc. Am. B **25**, 1156-1165 (2008)
44. W. Ma, **A. Foltynowicz**, and O. Axner
Theoretical description of Doppler-broadened noise-immune cavity-enhanced optical heterodyne molecular spectroscopy under optically saturated conditions
J. Opt. Soc. Am. B **25**, 1144-1155 (2008)
45. F. M. Schmidt, **A. Foltynowicz**, W. Ma, T. Lock, and O. Axner
Doppler-broadened fiber-laser-based NICE-OHMS - Improved detectability
Opt. Express **15**, 10822-10831 (2007)

46. F. M. Schmidt, **A. Foltynowicz**, W. Ma, and O. Axner
Fiber-laser-based noise-immune cavity-enhanced optical heterodyne molecular spectrometry for Doppler-broadened detection of C₂H₂ in the parts per trillion range
J. Opt. Soc. Am. B **24**, 1392-1405 (2007)
47. **A. Foltynowicz**, F. M. Schmidt, J. Gustafsson, and O. Axner
Wavelength modulation absorption spectrometry from optically pumped collision broadened atoms and molecules
J. Quant. Spectrosc. Radiat. Transfer **108**, 220-238 (2007)
48. O. Axner, F. M. Schmidt, **A. Foltynowicz**, J. Gustafsson, N. Omenetto, and J. D. Winefordner
Absorption spectrometry by narrowband light in optically saturated and optically pumped collision and Doppler broadened gaseous media under arbitrary optical thickness conditions (cover)
Appl. Spectrosc. **60**, 1217-1240 (2006)
49. F. M. Schmidt, **A. Foltynowicz**, J. Gustafsson, and O. Axner
Wavelength modulation absorption spectrometry from optically saturated collision-broadened transitions
J. Quant. Spectrosc. Radiat. Transfer **94**, 225-254 (2005)

BOOK CHAPTERS

1. *NICE-OHMS – Frequency modulation cavity-enhanced spectroscopy – Principles and performance.*
O. Axner, P. Ehlers, A. Foltynowicz, I. Silander, and J. Wang
Cavity-Enhanced Spectroscopy and Sensing, eds H.P. Loock, G. Gagliardi, Springer 2013
2. *Cavity-enhanced direct frequency comb spectroscopy.*
P. Maslowski, K. C. Cossel, A. Foltynowicz, and J. Ye
Cavity-Enhanced Spectroscopy and Sensing, eds H.P. Loock, G. Gagliardi, Springer 2013

POPULAR SCIENCE LECTURES AND ARTICLES

1. *Detektion av gravitationsvågor med LIGO-Virgo*
in Kosmos, Swedish Physical Society årsbok, Dec 2021
2. *Detection of molecules with optical frequency combs*
in THULE 2016, Kungliga Skytteanska samfundets årsbok

CONFERENCE CONTRIBUTIONS

1. *Cavity-enhanced sub-Doppler optical-optical double-resonance spectroscopy of methane using a frequency comb.*
V. Silva de Oliveira, I. Silander, L. Rutkowski, G. Soboń, O. Axner, K. K. Lehmann, and **A. Foltynowicz**
European Optical Society Annual meeting (EOSAM) 2021, Ultrafast Optical Technologies and Applications, Rome, Italy, Sept 2021 (hybrid/online)
2. *High-precision line positions of N₂O and CH₄ at 8 μm from optical frequency comb Fourier transform spectroscopy*
M. Germann, A. Hjältén, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, G. Soboń, and **A. Foltynowicz** (oral)
27th Colloquium on High Resolution Molecular Spectroscopy, Aug 2021 (online)
3. *High-resolution measurements of rovibrational spectra of methyl iodide in the 3.3 μm range using frequency comb Fourier transform spectroscopy*

- A. Hjältén, I. Sadiék, F. Senna Vieira, C. Lu, M. Stuhr, and **A. Foltynowicz** (poster)
27th Colloquium on High Resolution Molecular Spectroscopy, Aug 2021 (online)
4. *Cavity-enhanced sub-Doppler optical-optical double-resonance spectroscopy of methane using a frequency comb probe*
V. Silva de Oliveira, I. Silander, L. Rutkowski, O. Axner, G. Soboń, K. K. Lehmann, and **A. Foltynowicz** (poster)
 5. *27th Colloquium on High Resolution Molecular Spectroscopy, Aug 2021 (online) Sub-Doppler optical-optical double-resonance spectroscopy of methane using a frequency comb probe*
V. Silva de Oliveira, I. Silander, L. Rutkowski, A. C. Johansson, G. Soboń, O. Axner, K. K. Lehmann, and **A. Foltynowicz** (oral)
Optical Sensors and Sensing Congress: Fourier Transform Spectroscopy, Jul 2021 (online)
 6. *Fourier transform spectroscopy using difference frequency generation comb sources at 3.3 μm and 7.8 μm*
A. Hjältén, M. Germann, I. Sadiék, C. Lu, F. Senna Vieira, M. Stuhr, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, M. Stuhr, G. Soboń, and **A. Foltynowicz** (oral)
Optical Sensors and Sensing Congress: Fourier Transform Spectroscopy, Jul 2021 (online)
 7. *Sub-Doppler double-resonance spectroscopy of methane using a frequency comb probe*
V. Silva de Oliveira, I. Silander, A. C. Johansson, O. Axner, **A. Foltynowicz**, L. Rutkowski, G. Soboń, and K. K. Lehmann (oral)
International Symposium on Molecular Spectroscopy, Jun 2021 (online)
 8. *High-resolution comb-based Fourier transform spectroscopy in the 3.3 μm and 7.8 μm range*
A. Hjältén, M. Germann, C. Lu, F. Senna Vieira, **A. Foltynowicz**, I. Sadiék, M. Stuhr, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, and G. Soboń (oral)
International Symposium on Molecular Spectroscopy, Jun 2021 (online)
 9. *Frequency comb Fourier transform spectroscopy at 8 μm using a compact difference frequency generation source*
M. Germann, A. Hjältén, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, G. Soboń, and **A. Foltynowicz** (oral)
CLEO/EU-EQEC, Munich, Germany, Jun 2021 (online)
 10. *High-resolution measurements of halogenated volatile organic compounds using frequency comb Fourier transform spectroscopy*
A. Hjältén, I. Sadiék, C. Lu, F. Senna Vieira, M. Stuhr, M. Germann, and **A. Foltynowicz** (oral)
CLEO/EU-EQEC, Munich, Germany, Jun 2021 (online)
 11. *Double-resonance spectroscopy of methane using a comb probe*
V. Silva de Oliveira, I. Silander, L. Rutkowski, A. C. Johansson, G. Soboń, O. Axner, K. K. Lehmann, and **A. Foltynowicz** (oral)
CLEO/EU-EQEC, Munich, Germany, Jun 2021 (online)
 12. *Robust and high-speed cavity-enhanced Vernier spectrometer*
C. Lu, F. Senna Vieira, A. Głuszek, I. Silander, G. Soboń, and **A. Foltynowicz** (oral)
CLEO/EU-EQEC, Munich, Germany, Jun 2021 (online)
 13. *Precision measurements of $^{14}\text{N}_2^{16}\text{O}$ using a comb-based Fourier transform spectrometer at 7.8 μm*
A. Hjältén, M. Germann, K. Krzempek, A. Hudzikowski, A. Głuszek, D. Tomaszewska, G. Soboń, and **A. Foltynowicz** (oral SM1C.4)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2021 (online)

14. *Optical-optical double-resonance spectroscopy of methane using a cavity-enhanced comb probe*
V. Silva de Oliveira, I. Silander, L. Rutkowski, G. Soboń, O. Axner, K. K. Lehmann, and **A. Foltynowicz** (oral SM1C.3)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2021 (online)
15. *Compact 6.5 – 9 μm frequency comb and its application to Fourier transform spectroscopy*
K. Krzempek, D. Tomaszewska, A. Głuszek, A. Hudzikowski, T. Martynkien, P. Mergo, J. Sotor, **A. Foltynowicz**, Grzegorz Soboń (oral EM1C.2)
Optics and Photonics for Sensing the Environment, Jun 2020 (online)
16. *Continuous-filtering Vernier spectrometer with improved design and performance*
F. Senna Vieira, C. Lu, I. Silander, A. Głuszek, G. Soboń, and **A. Foltynowicz** (oral LTu3C.5)
Laser Applications to Chemical, Security and Environmental Analysis, Jun 2020 (online)
17. *Mid-infrared comb-based Fourier transform spectroscopy of halogenated volatile organic compounds*
I. Sadiiek, A. Hjältén, M. Stuhr, C. Lu, F. Senna Vieira, and A. Foltynowicz (oral SM1M.8)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2020
18. *Sub-Doppler double-resonance spectroscopy of methane using a frequency comb probe*
A. Foltynowicz, L. Rutkowski, I. Silander, A. C. Johansson, V. Silva de Oliveira, O. Axner, G. Soboń, T. Martynkien, P. Mergo, and K. K. Lehmann (oral STu4N.1)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2020
19. *Towards a transferable standard for nitrous oxide isotopomer ratio*
I. Sadiiek, A. Hjältén, M. Stuhr, G. Friedrichs, and A. Foltynowicz (oral STu4N.4)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2020
20. *Robust, fast and sensitive near-infrared continuous-filtering Vernier spectrometer*
F. Senna Vieira, C. Lu, I. Silander, A. Głuszek, G. Soboń², and A. Foltynowicz (oral SM1M.5)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2020
21. *Measurement of high-resolution spectra of HVOCs using comb-based Fourier transform spectroscopy.*
I. Sadiiek, A. Hjältén, and A. Foltynowicz (oral)
26th Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, Aug 2019
22. *Cavity-enhanced complex refractive index spectroscopy using an optical frequency comb.*
A. C. Johansson, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, A. Foltynowicz, L. Rutkowski (poster)
26th Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, Aug 2019
23. *Optical frequency comb photoacoustic spectroscopy.*
I. Sadiiek, A. Hjältén, A. Foltynowicz, T. Mikkonen, J. Toivonen, M. Vainio (poster)
26th Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, Aug 2019
24. *Sub-Doppler double-resonance spectroscopy of methane using a frequency comb probe.*
A. Foltynowicz, I. Silander, A. C. Johansson, O. Axner, K. K. Lehmann, L. Rutkowski, G. Soboń, T. Martynkiem, P. Mergo (poster)
26th Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, Aug 2019
25. *Time-resolved continuous-filtering Vernier spectroscopy in a flame.*
C. Lu, F. Senna Vieira, F. M. Schmidt, and A. Foltynowicz (oral CH-13.1)
CLEO/EU-EQEC, Munich, Germany, Jun 2019
26. *Optical frequency comb photoacoustic spectroscopy.*
I. Sadiiek, T. Mikkonen, M. Vainio, J. Toivonen, and A. Foltynowicz (oral CH-3.4)

CLEO/EU-EQEC, Munich, Germany, Jun 2019

27. *Precise comb-based Fourier transform spectroscopy for line parameter retrieval.*
A. C. Johansson, L. Rutkowski, P. Maslowski, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, and A. Foltynowicz (oral ED-4.3)
CLEO/EU-EQEC, Munich, Germany, Jun 2019
28. *Highly birefringent microstructured silica fibers for broadband soliton self-frequency shift.*
T. Martynkien, K. Stefańska, F. Senna Vieira, C. Lu, A. Foltynowicz, P. Mergo, J. Sotor, G. Soboń (poster)
CLEO/EU-EQEC, Munich, Germany, Jun 2019
29. *Comb-based Fourier transform spectroscopy as a platform for measurements of high-resolution spectra of HVOCs.*
I. Sadiék, A. Hjältén, and A. Foltynowicz (oral)
13th International Used Meeting on Cavity Enhanced Spectroscopy, Madison, WI, USA, Jun 2019
30. *Optical frequency comb photoacoustic spectroscopy.*
I. Sadiék, T. Mikkonen, M. Vainio, J. Toivonen, and A. Foltynowicz (poster)
13th International Used Meeting on Cavity Enhanced Spectroscopy, Madison, WI, USA, Jun 2019
31. *Continuous-filtering Vernier spectroscopy in a flame.*
F. Senna Vieira, C. Lu, F. M. Schmidt, and A. Foltynowicz (poster)
13th International Used Meeting on Cavity Enhanced Spectroscopy, Madison, WI, USA, Jun 2019
32. *Optical frequency comb photoacoustic spectroscopy.*
I. Sadiék, T. Mikkonen, M. Vainio, J. Toivonen, and A. Foltynowicz (oral SW3L.5)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2019
33. *Near-infrared continuous-filtering Vernier spectroscopy in a flame.*
C. Lu, F. Senna Vieira, F. M. Schmidt, and A. Foltynowicz (oral SM2N.5)
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2019
34. *Broadband calibration-free cavity-enhanced complex refractive index spectroscopy using an optical frequency comb.*
A. C. Johansson, L. Rutkowski, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, and A. Foltynowicz (oral)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
35. *CO₂ line parameter retrieval beyond the Voigt profile using comb-based Fourier transform spectroscopy.*
A. C. Johansson, A. Filipsson, L. Rutkowski, P. Maslowski, and A. Foltynowicz (poster)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
36. *Optical frequency comb Faraday rotation spectroscopy.*
A. C. Johansson, J. Westberg, G. Wysocki, and A. Foltynowicz (poster)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
37. *Optical frequency comb photoacoustic spectroscopy.*
I. Sadiék, T. Mikkonen, T. Tomberg, F. Senna Vieira, J. Karhu, M. Vainio, J. Toivonen and A. Foltynowicz (poster)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
38. *Near-infrared continuous-filtering Vernier spectroscopy in a flame.*
C. Lu, F. Senna Vieira, A. C. Johansson, F. M. Schmidt, and A. Foltynowicz (poster)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
39. *An experimental water line list at 1950 K in the 1.5-1.6 μm region.*

- L. Rutkowski, A. Foltynowicz, F. M. Schmidt, A. C. Johansson, A. Khodabakhsh, A. A. Kyuberis, N. F. Zobov, O. L. Polyansky, S. N. Yurchenko, and J. Tennyson (poster)
Field Laser Applications in Industry and Research, Assisi, Italy, Sept 2018
40. *Broadband calibration-free complex refractive index spectroscopy in a cavity using a comb-based Fourier transform spectrometer*
A. C. Johansson, L. Rutkowski, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, and A. Foltynowicz
International Symposium on Molecular Spectroscopy, Champaign-Urbana, IL, Jun 2018
41. *CO₂ line parameter retrieval beyond the Voigt profile using comb-based Fourier transform spectroscopy*
A. C. Johansson, A. Filipsson, L. Rutkowski, P. Maslowski, and A. Foltynowicz
International Symposium on Molecular Spectroscopy, Champaign-Urbana, IL, Jun 2018
42. *Broadband complex refractive index spectroscopy via measurement of cavity modes (STu3P.4)*
A. C. Johansson, L. Rutkowski, A. Filipsson, T. Hausmaninger, G. Zhao, O. Axner, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2018
43. *CO₂ line parameter retrieval beyond the Voigt profile using comb-based Fourier transform spectroscopy (STu3P.6)*
A. C. Johansson, A. Filipsson, L. Rutkowski, P. Maslowski, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2018
44. *Optical frequency comb Faraday rotation spectroscopy (JW2A.165)*
A. C. Johansson, J. Westberg, G. Wysocki, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2018
45. *Broadband molecular spectroscopy via probing of cavity modes using a frequency-comb-based Fourier transform spectrometer*
A. C. Johansson, L. Rutkowski, G. Zhao, T. Hausmaninger, A. Khodabakhsh, A. Filipsson, O. Axner, and A. Foltynowicz
25th Colloquium on High Resolution Molecular Spectroscopy, Helsinki, Finland, Sept 2017
46. *Line parameter retrieval beyond the Voigt profile using comb-based Fourier transform spectroscopy*
A. Filipsson, A. C. Johansson, L. Rutkowski, P. Maslowski, A. Khodabakhsh, and A. Foltynowicz
25th Colloquium on High Resolution Molecular Spectroscopy, Helsinki, Finland, Sept 2017
47. *Measurement of H₂O and OH Spectra in an Atmospheric Flame using Optical Frequency Comb Spectroscopy*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, D. M. Valiev, F. M. Schmidt, L. Lodi, O. L. Polyansky, S. Yurchenko, J. Tennyson, and A. Foltynowicz
25th Colloquium on High Resolution Molecular Spectroscopy, Helsinki, Finland, Sept 2017
48. *Broadband precision spectroscopy and multispecies detection using optical frequency combs*
A. Khodabakhsh, L. Rutkowski, A. C. Johansson, G. Soboń, A. Filipsson, C. Lu, and A. Foltynowicz
OPTO:2017, Warsaw, Poland, Jul 2017
49. *Broadband and high resolution direct measurement of cavity resonances*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, and A. Foltynowicz
Conference on Lasers and Electro-Optics – European Quantum Electronics Conference, Munich, Germany, Jun 2017

50. *Cavity-enhanced continuous-filtering Vernier spectroscopy at 3.3 μm using a femtosecond optical parametric oscillator*
A. Khodabakhsh, L. Rutkowski, J. Morville, A. C. Johansson, G. Sobon, and A. Foltynowicz
Conference on Lasers and Electro-Optics – European Quantum Electronics Conference, Munich, Germany, Jun 2017
51. *High-power broadband source tunable from 2.8 to 4 μm based on difference frequency generation*
G. Soboń, T. Martynkien, P. Mergo, M. Marangoni, and A. Foltynowicz
Conference on Lasers and Electro-Optics – European Quantum Electronics Conference, Munich, Germany, Jun 2017
52. *Detection of OH and H₂O in an atmospheric flame by near-infrared optical frequency comb spectroscopy*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, D. Valiev, L. Lodi, S. Yurchenko, O. L. Polyansky, J. Tennyson, F. M. Schmidt, and A. Foltynowicz
Conference on Lasers and Electro-Optics – European Quantum Electronics Conference, Munich, Germany, Jun 2017
53. *Faraday rotation spectroscopy using an optical frequency comb*
A. C. Johansson, J. Westberg, A. Khodabakhsh, L. Rutkowski, G. Wysocki, and A. Foltynowicz
Conference on Lasers and Electro-Optics – European Quantum Electronics Conference, Munich, Germany, Jun 2017
54. *Direct broadband measurement of cavity modes using a mechanical Fourier transform spectrometer with kHz resolution*
L. Rutkowski, A. C. Johansson, G. Zhao, T. Hausmaninger, A. Khodabakhsh, and A. Foltynowicz
Cavity Enhanced Spectroscopy, Egmont aan Zee, the Netherlands, Jun 2017
55. *Mid-infrared cavity-enhanced continuous-filtering Vernier spectroscopy using a femtosecond optical parametric oscillator*
A. Khodabakhsh, L. Rutkowski, J. Morville, G. Sobon, C. Lu and A. Foltynowicz
Cavity Enhanced Spectroscopy, Egmont aan Zee, the Netherlands, Jun 2017
56. *Line parameter retrieval beyond the Voigt profile using comb-based Fourier transform spectroscopy*
A. C. Johansson, L. Rutkowski, P. Masłowski, A. Filipsson, A. Khodabakhsh, and A. Foltynowicz
Cavity Enhanced Spectroscopy, Egmont aan Zee, the Netherlands, Jun 2017
57. *Detection of OH in an atmospheric flame using near-infrared cavity-enhanced optical frequency comb spectroscopy*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, D. Valiev, F. M. Schmidt, and A. Foltynowicz
Cavity Enhanced Spectroscopy, Egmont aan Zee, the Netherlands, Jun 2017
58. *Mechanical Fourier transform spectrometer with kHz resolution (SW4J.6)*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2017
59. *Continuous-filtering Vernier spectroscopy at 3.3 μm using a femtosecond optical parametric oscillator (SW1L.5)*
A. Khodabakhsh, L. Rutkowski, J. Morville, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2017
60. *Near-infrared Fourier transform cavity-enhanced optical frequency comb spectroscopy*

A. Khodabakhsh, L. Rutkowski, P. Maslowski, F. M. Schmidt, and A. Foltynowicz
Light, Energy and the Environment Congress: Fourier Transform Spectroscopy (FTS),
Leipzig, Germany, Nov 2016

61. *Fourier transform and Vernier spectroscopy with a mid-Infrared optical frequency comb*
A. Khodabakhsh, V. Ramaiah-Badarla, L. Rutkowski, A. C. Johansson, K. F. Lee, J. Jiang,
C. Mohr, M. E. Fermann, and A. Foltynowicz
Light, Energy and the Environment Congress: Fourier Transform Spectroscopy (FTS),
Leipzig, Germany, Nov 2016
62. *Fourier-transform-based noise-immune cavity-enhanced optical frequency comb spectroscopy*
A. C. Johansson, A. Khodabakhsh, L. Rutkowski, and A. Foltynowicz
Light, Energy and the Environment Congress: Fourier Transform Spectroscopy (FTS),
Leipzig, Germany, Nov 2016
63. *Detection of H₂O and OH in a flame by optical frequency comb spectroscopy*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, D. M. Valiev, L. Lodi, O. L. Polyansky,
S. Yurchenko, J. Tennyson, F. M. Schmidt, and A. Foltynowicz
Optics and Photonics in Sweden, Linköping, Sweden, Nov 2016
64. *Fourier Transform spectroscopy and Vernier spectroscopy using a mid-infrared optical frequency comb*
A. Khodabakhsh, V. Ramaiah-Badarla, L. Rutkowski, A. C. Johansson, K. F. Lee, J. Jiang,
C. Mohr, M. E. Fermann, and A. Foltynowicz
Optics and Photonics in Sweden, Linköping, Sweden, Nov 2016
65. *Noise-immune cavity-enhanced optical frequency comb spectroscopy*
A. C. Johansson, A. Khodabakhsh, L. Rutkowski, and A. Foltynowicz
Optics and Photonics in Sweden, Linköping, Sweden, Nov 2016
66. *Optical frequency comb Fourier transform spectroscopy with resolution beyond the path difference limit*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, P. Maslowski, G. Kowzan, K. F. Lee, A.
Mills, C. Mohr, J. Jiang, M. E. Fermann, and A. Foltynowicz
Field Laser Applications in Industry and Research, Aix-les-Bains, France, Sept 2016
67. *Fourier-transform-based cavity-enhanced optical frequency comb spectroscopy*
A. C. Johansson, L. Rutkowski, A. Khodabakhsh, and A. Foltynowicz
Field Laser Applications in Industry and Research, Aix-les-Bains, France, Sept 2016
68. *Measurement of H₂O and OH in a flame by optical frequency comb spectroscopy*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, D. M. Valiev, L. Lodi, Z. Qu, R.
Ghorbani, O. L. Polyansky, J. Tennyson, F. M. Schmidt, and A. Foltynowicz
Field Laser Applications in Industry and Research, Aix-les-Bains, France, Sept 2016
69. *Fourier transform spectroscopy and Vernier spectroscopy using an optical frequency comb in the 3-5.4 μm range*
A. Khodabakhsh, V. Ramaiah-Badarla, L. Rutkowski, A. C. Johansson, K. F. Lee, J. Jiang,
C. Mohr, M. E. Fermann, and A. Foltynowicz
Field Laser Applications in Industry and Research, Aix-les-Bains, France, Sept 2016
70. *Noise-immune cavity-enhanced optical frequency comb spectroscopy*
A. C. Johansson, L. Rutkowski, A. Khodabakhsh, and A. Foltynowicz
23rd International Conference on Spectral Line Shapes, Toruń, Poland, Jun 2016
71. *Optical frequency comb spectroscopy of H₂O and OH in a flame*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, D. M. Valiev, L. Lodi, Z. Qu, R.
Ghorbani, O. L. Polyansky, J. Tennyson, F. M. Schmidt, and A. Foltynowicz
23rd International Conference on Spectral Line Shapes, Toruń, Poland, Jun 2016

72. *Optical frequency comb spectroscopy at 3.2-5.4 μm*
A. Khodabakhsh, V. Ramaiah-Badarla, A. C. Johansson, L. Rutkowski, and A. Foltynowicz
23rd International Conference on Spectral Line Shapes, Toruń, Poland, Jun 2016
73. *Optical frequency comb spectroscopy at 3.3 and 5.2 μm by a Tm: fiber-laser-pumped optical parametric oscillator (JF2K.6)*
A. Khodabakhsh, V. Ramaiah-Badarla, L. Rutkowski, A. C. Johansson, K. F. Lee, J. Jiang, C. Mohr, M. E. Fermann, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, Jun 2016
74. *Optical frequency comb Fourier transform spectroscopy with resolution beyond the path difference limit (SW4H.1)*
L. Rutkowski, A. C. Johansson, A. Khodabakhsh, P. Maslowski, G. Kowzan, K. F. Lee, A. Mills, C. Mohr, J. Jiang, M. E. Fermann, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, Jun 2016
75. *Measurement of H₂O and OH in a flame by optical frequency comb spectroscopy (SW4H.8)*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, D. Valiev, L. Lodi, Z. Qu, R. Ghorbani, O. Polyanski, Y. Jin, J. Tennyson, F. M. Schmidt and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, Jun 2016
76. *Fourier transform spectroscopy with resolution beyond the optical path limit*
P. Maslowski, G. Kowzan, K. F. Lee, M. E. Fermann, A. Foltynowicz, A. C. Johansson, A. Khodabakhsh, and L. Rutkowski
High Resolution Molecular Spectroscopy, 24th Colloquium, Dijon, France, Aug 2015
77. *Optical frequency comb Fourier transform spectroscopy with resolution exceeding the limit set by the optical path difference*
A. Foltynowicz, L. Rutkowski, A. C. Johansson, A. Khodabakhsh, P. Maslowski, G. Kowzan, K. Lee, and M. E. Fermann
International Symposium on Molecular Spectroscopy, Champaign-Urbana, IL, June 2015
78. *Noise-immune cavity-enhanced optical frequency comb spectroscopy*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, and A. Foltynowicz
International Symposium on Molecular Spectroscopy, Champaign-Urbana, IL, June 2015
79. *Optical frequency comb Fourier transform spectroscopy with resolution beyond the optical path limit*
A. Foltynowicz, L. Rutkowski, A. C. Johansson, A. Khodabakhsh, P. Maslowski, G. Kowzan, K. Lee, and M. E. Fermann
Cavity Enhanced Spectroscopy, Boulder, CO, USA, Jun 2015
80. *Cavity-enhanced optical frequency comb spectroscopy of high-temperature water in a flame*
A. Khodabakhsh, L. Rutkowski, A. C. Johansson, Y. Jin, Z. Qu, R. Ghorbani, F. M. Schmidt, and A. Foltynowicz
Cavity Enhanced Spectroscopy, Boulder, CO, USA, Jun 2015
81. *Noise-immune cavity-enhanced optical frequency comb spectroscopy*
L. Rutkowski, A. Khodabakhsh, A. C. Johansson, and A. Foltynowicz
Cavity Enhanced Spectroscopy, Boulder, CO, USA, Jun 2015
82. *Cavity-enhanced optical frequency comb spectroscopy of high-temperature water in a flame (STh4O.2)*
A. Khodabakhsh, Z. Qu, C. Abd Alrahman, A. C. Johansson, L. Rutkowski, F. M. Schmidt, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, CA, USA, May 2015
83. *Fourier-transform-based noise-immune cavity-enhanced optical frequency comb spectroscopy (SM1O.6)*

- A. Khodabakhsh, A. C. Johansson, L. Rutkowski, and A. Foltynowicz
Conference on Lasers and Electro-Optics, San Jose, Ca, USA, May 2015
84. *Fourier-transform cavity-enhanced optical frequency comb spectroscopy*
A. Foltynowicz, A. Khodabakhsh, and A. C. Johansson
2nd Stakeholder Workshop on Traceability of Spectral Reference Line Data, Braunschweig, Germany, Oct 2014
 85. *Noise-immune cavity-enhanced optical frequency comb spectroscopy*
A. Khodabakhsh, C. Abd Alrahman, and A. Foltynowicz
Field Laser Applications in Industry and Research, Florence, Italy, May 2014
 86. *Cavity-enhanced optical frequency comb spectroscopy of H₂O and CO₂ in a flame*
C. Abd Alrahman, A. Khodabakhsh, F. M. Schmidt, Z. Qu, and A. Foltynowicz
Field Laser Applications in Industry and Research, Florence, Italy, May 2014
 87. *Optical measurement of the gas number density in a Fabry–Perot cavity*
I. Silander, M. Zelan, O. Axner, F. Arrhén, L. Pendrill, and A. Foltynowicz
Field Laser Applications in Industry and Research, Florence, Italy, May 2014
 88. *Fourier-transform cavity-enhanced optical frequency comb spectroscopy*
A. Foltynowicz, C. Abd Alrahman, A. Khodabakhsh
Cavity Enhanced Spectroscopy, Naples, Italy, Jun 2013
 89. *Cavity-enhanced direct frequency comb spectroscopy in the mid-infrared*
A. J. Fleisher, B. J. Bjork, K. C. Cossel, A. Foltynowicz, P. Maslowski, and J. Ye
Gordon Research Conference on Atomic and Molecular Interactions, Easton, MA, USA, Jul 2012
 90. *Developments in cavity-enhanced direct frequency comb spectroscopy*
B. J. Bjork, A. Foltynowicz, A. J. Fleisher, P. Maslowski, and J. Ye
43rd Annual DAMOP Meeting, Anaheim, CA, USA, Jun 2012
 91. *Mid-infrared frequency comb spectrometer based on an optical parametric oscillator*
F. Adler, P. Maslowski, A. Foltynowicz, K. C. Cossel, S. A. Diddams, and J. Ye
IEEE Photonics Society Summer Topical Meetings, Montreal, QC, Canada, Jul 2011
 92. *Direct frequency comb spectroscopy of molecules in the mid-infrared*
P. Maslowski, A. Foltynowicz, F. Adler, K. C. Cossel, T. Ban, T. C. Briles, and J. Ye
Frontiers in Spectroscopy: Faraday Discussion 150, Basel, Switzerland, April 2011
 93. *High-resolution mid-infrared frequency comb Fourier transform spectrometer*
F. Adler, P. Maslowski, A. Foltynowicz, K. C. Cossel, T. C. Briles, and J. Ye
Frontiers in Optics, Rochester, NY, USA, Oct 2010
 94. *Broadband direct frequency comb spectroscopy in the mid-IR*
P. Maslowski, A. Foltynowicz, F. Adler, K. C. Cossel, T. C. Briles, and J. Ye
21st International Conference on High Resolution Spectroscopy, Poznan, Poland, Sept 2010
 95. *Applications of cavity-enhanced direct frequency comb spectroscopy*
A. Foltynowicz, P. Maslowski, F. Adler, K. C. Cossel, T. C. Briles, and J. Ye
21st International Conference on High Resolution Spectroscopy, Poznan, Poland, Sept 2010
 96. *Fiber-laser-based NICE-OHMS for trace gas detection*
A. Foltynowicz, W. Ma, and O. Axner
Ohio State University International Symposium on Molecular Spectroscopy, Columbus, OH, USA, Jun 2009
 97. *Fiber-laser-based NICE-OHMS for ultra-sensitive trace species detection*
A. Foltynowicz, F. M. Schmidt, W. Ma, and O. Axner
Laser Applications to Chemical Security, and Environmental Analysis, St. Petersburg, FL, USA, Mar 2008

98. *Fiber-laser-based NICE-OHMS and trace gas detection*
A. Foltynowicz, F. M. Schmidt, W. Ma, and O. Axner
Stable Isotope Ratio Infrared Spectrometry, Florence, Italy, Sept 2007
99. *Fiber-laser-based NICE-OHMS and trace gas detection*
A. Foltynowicz, F. M. Schmidt, W. Ma, and O. Axner
Field Laser Applications in Industry and Research, Florence, Italy, Sept 2007
100. *A scrutiny of NICE-OHMS for trace species detection*
A. Foltynowicz, F. M. Schmidt, W. Ma, and O. Axner
Tunable Diode Laser Spectroscopy, Reims, France, Jul 2007
101. *Fiber-laser-based NICE-OHMS for ultra-sensitive trace species detection*
F. M. Schmidt, A. Foltynowicz, W. Ma, and O. Axner
Tunable Diode Laser Spectroscopy, Reims, France, Jul 2007