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adiunkt naukowy

Nicolaus Copernicus University in Toruń

Faculty of Physics, Astronomy and Informatics

postdoctoral associate

Stony Brook University

Department of Chemistry

Education

- 2020.04.22 PhD in physics with honors, Nicolaus Copernicus University in Toruń, supervisor: Piotr Masłowski. Dissertation: *Bringing high resolution and accuracy to broadband spectroscopy with optical frequency combs*.
- 2014.06.24 M.Sc. in technical physics, Nicolaus Copernicus University in Toruń, supervisor: Piotr Masłowski. Dissertation: *Broadband cavity-enhanced direct frequency comb spectroscopy*.
- 2013.02.25 B.Sc. in theoretical physics, Nicolaus Copernicus University in Toruń, supervisor: Jacek Jurkowski. Dissertation: *Implementation of quantum entanglement detection algorithms*.

Professional experience

- 2021.08–present Adiunkt¹ at Nicolaus Copernicus University in Toruń, Institute of Physics.
- 2022.11–2022.12 Postdoctoral associate at Stony Brook University, Department of Chemistry.
- 2021.05–2022.10 Visiting scholar at Stony Brook University, Department of Chemistry (outgoing phase of Marie Skłodowska-Curie Actions Individual Fellowship).
- 2021.01–2021.04 Postdoctoral associate at Stony Brook University, Department of Chemistry.
- 2020.06–2020.12 Independent contractor at Stony Brook University, Department of Chemistry².
- 2020.04–2021.07 Research assistant at Nicolaus Copernicus University in Toruń, Institute of Physics (unpaid leave).
- 2014.07–2014.09 Internship at IMRA America, Inc., Ann Arbor, MI.
- 2011.08 Internship at Theoretical Molecular Biophysics group, Institute of Physics NCU.

Publications

Journal articles

1. **G. Kowzan**, T. K. Allison. “Controlling Rotationally Resolved Two-Dimensional Infrared Spectra with Polarization”. **J. Phys. Chem. Lett.** p. 11650–11654, 2022. DOI: 10.1021/acs.jpcllett.2c03331
2. **G. Kowzan**, T. K. Allison. “Theory of Rotationally Resolved Two-Dimensional Infrared Spectroscopy Including Polarization Dependence and Rotational Coherence Dynamics”. **Phys. Rev. A** 106, p. 042819, 2022. DOI: 10.1103/PhysRevA.106.042819
3. **G. Kowzan** *rotsim2d: Simulate 2D Rovibrational Spectra of Gas-Phase Molecular Samples* ver. 0.9.1 June 2022 DOI: 10.5281/zenodo.6654257
4. D. Lisak, D. Charczun, A. Nishiyama, T. Voumard, T. Wildi, **G. Kowzan**, V. Brasch, T. Herr, A. J. Fleisher, J. T. Hodges, R. Ciuryło, A. Cygan, P. Masłowski. “Dual-Comb Cavity Ring-down Spectroscopy”. **Sci. Rep.** 12, p. 2377, 2022. DOI: 10.1038/s41598-022-05926-0
5. D. Charczun, A. Nishiyama, **G. Kowzan**, A. Cygan, T. Voumard, T. Wildi, T. Herr, V. Brasch, D. Lisak, P. Masłowski. “Dual-Comb Cavity-Mode Width and Shift Spectroscopy”. **Measurement** 188, p. 110519, 2022. DOI: 10.1016/j.measurement.2021.110519

¹Position roughly equivalent to an assistant professor in the US academic system.

²Remote work due to COVID-19 travel restrictions.

6. M. C. Silfies, **G. Kowzan**, N. Lewis, T. K. Allison. “Broadband Cavity-Enhanced Ultrafast Spectroscopy”. **Phys. Chem. Chem. Phys.** 23, p. 9743–9752, 2021. DOI: 10.1039/D1CP00631B
7. K. Bielska, A. Cygan, M. Konefał, **G. Kowzan**, M. Zaborowski, D. Charczun, S. Wójtewicz, P. Wcisło, P. Masłowski, R. Ciuryło, D. Lisak. “Frequency-Based Dispersion Lamb-dip Spectroscopy in a High Finesse Optical Cavity”. **Opt. Express** 29, p. 39449, 2021. DOI: 10.1364/oe.443661
8. **G. Kowzan**, H. Cybulski, P. Wcisło, M. Słowiński, A. Viel, P. Masłowski, F. Thibault. “Subpercent Agreement between *Ab Initio* and Experimental Collision-Induced Line Shapes of Carbon Monoxide Perturbed by Argon”. **Phys. Rev. A** 102, p. 012821, 2020. DOI: 10.1103/physreva.102.012821
9. **G. Kowzan**, P. Wcisło, M. Słowiński, P. Masłowski, A. Viel, F. Thibault. “Fully Quantum Calculations of the Line-Shape Parameters for the Hartmann-Tran Profile: A CO-Ar Case Study”. **J. Quant. Spectrosc. Radiat. Transf.** 243, p. 106803, 2020. DOI: 10.1016/j.jqsrt.2019.106803
10. A. Nishiyama, **G. Kowzan**, D. Charczun, R. S. Trawiński, P. Masłowski. “Optical Frequency Comb-Based Cavity-Enhanced Fourier-transform Spectroscopy: Application to Collisional Line-Shape Study”. **Chin. J. Chem. Phys.** 33, p. 23, 2020. DOI: 10.1063/1674-0068/cjcp1911192
11. M. Silfies, **G. Kowzan**, Y. Chen, N. Lewis, R. Hou, R. Baehre, T. Gross, T. K. Allison. “Widely Tunable Cavity-Enhanced Frequency Combs”. **Opt. Lett.** 45, p. 2123–2126, 2020. DOI: 10.1364/OL.389412
12. N. Stolarczyk, F. Thibault, H. Cybulski, H. Józwiak, **G. Kowzan**, B. Vispoel, I. Gordon, L. Rothman, R. Gamache, P. Wcisło. “Evaluation of Different Parameterizations of Temperature Dependences of the Line-Shape Parameters Based on *Ab Initio* Calculations: Case Study for the HITRAN Database”. **J. Quant. Spectrosc. Radiat. Transf.** 240, p. 106676, 2020. DOI: 10.1016/j.jqsrt.2019.106676
13. M. Zaborowski, M. Słowiński, K. Stankiewicz, F. Thibault, A. Cygan, H. Józwiak, **G. Kowzan**, P. Masłowski, A. Nishiyama, N. Stolarczyk, S. Wójtewicz, R. Ciuryło, D. Lisak, P. Wcisło. “Ultra-High Finesse Cavity-Enhanced Spectroscopy for Accurate Tests of Quantum Electrodynamics for Molecules”. **Opt. Lett.** 45, p. 1603–1606, 2020. DOI: 10.1364/ol.389268
14. Y. Chen, M. C. Silfies, **G. Kowzan**, J. M. Bautista, T. K. Allison. “Tunable Visible Frequency Combs from a Yb-Fiber-Laser-Pumped Optical Parametric Oscillator”. **Appl. Phys. B Lasers Opt.** 125, p. 81, 2019. DOI: 10.1007/s00340-019-7191-2
15. A. Cygan, P. Wcisło, S. Wójtewicz, **G. Kowzan**, M. Zaborowski, D. Charczun, K. Bielska, R. S. Trawiński, R. Ciuryło, P. Masłowski, D. Lisak. “High-Accuracy and Wide Dynamic Range Frequency-Based Dispersion Spectroscopy in an Optical Cavity”. **Opt. Express** 27, p. 21810–21821, 2019. DOI: 10.1364/OE.27.021810
16. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski. “Broadband Optical Cavity Mode Measurements at Hz-Level Precision with a Comb-Based VIPA Spectrometer”. **Sci. Rep.** 9, p. 8206, 2019. DOI: 10.1038/s41598-019-44711-4
17. M. Witkowski, **G. Kowzan**, R. Munoz-Rodriguez, R. Ciuryło, P. S. Żuchowski, P. Masłowski, M. Zawada. “Absolute Frequency and Isotope Shift Measurements of Mercury 1S_0 - 3P_1 Transition”. **Opt. Express** 27, p. 11069, 2019. DOI: 10.1364/oe.27.011069
18. D. Charczun, **G. Kowzan**, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski. “Broadband and High Resolution Measurements of Cavity Loss and Dispersion”. **Photonics Lett. Pol.** 10, p. 48, 2018. DOI: 10.4302/plp.v10i2.820
19. P. Wcisło, F. Thibault, M. Zaborowski, S. Wójtewicz, A. Cygan, **G. Kowzan**, P. Masłowski, J. Komasa, M. Puchalski, K. Pachucki, R. Ciuryło, D. Lisak. “Accurate Deuterium Spectroscopy for Fundamental Studies”. **J. Quant. Spectrosc. Radiat. Transf.** 213, p. 41–51, 2018. DOI: 10.1016/j.jqsrt.2018.04.011
20. K. F. Lee, **G. Kowzan**, C.-C. Lee, C. Mohr, J. Jiang, P. G. Schunemann, T. R. Schibli, P. Masłowski, M. E. Fermann. “Frequency Combs for Cavity Cascades: OPO Combs and Graphene-Coupled Cavities”. **J. Phys. B: At. Mol. Opt. Phys.** 50, p. 014003, 2017. DOI: 10.1088/1361-6455/50/1/014003
21. **G. Kowzan**, K. Stec, M. Zaborowski, S. Wójtewicz, A. Cygan, D. Lisak, P. Masłowski, R. S. Trawiński. “Line Positions, Pressure Broadening and Shift Coefficients for the Second Overtone Transitions of Carbon Monoxide in Argon”. **J. Quant. Spectrosc. Radiat. Transf.** 191, p. 46–54, 2017. DOI: 10.1016/j.jqsrt.2016.12.035

22. A. Cygan, S. Wójtewicz, **G. Kowzan**, M. Zaborowski, P. Wcisło, J. Nawrocki, P. Krehlik, Ł. Śliwczyński, M. Lipiński, P. Masłowski, R. Ciuryło, D. Lisak. “Absolute Molecular Transition Frequencies Measured by Three Cavity-Enhanced Spectroscopy Techniques”. **J. Chem. Phys.** 144, p. 214202, 2016. DOI: 10.1063/1.4952651
23. **G. Kowzan**, K. F. Lee, M. Paradowska, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, M. E. Fermann, R. S. Trawiński, P. Masłowski. “Self-Referenced, Accurate and Sensitive Optical Frequency Comb Spectroscopy with a Virtually Imaged Phased Array Spectrometer”. **Opt. Lett.** 41, p. 974, 2016. DOI: 10.1364/OL.41.000974
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, A. Foltynowicz. “Surpassing the Path-Limited Resolution of Fourier-Transform Spectrometry with Frequency Combs”. **Phys. Rev. A** 93, p. 021802, 2016. DOI: 10.1103/PhysRevA.93.021802
25. **G. Kowzan**, M. Paradowska, M. Zaborowski, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, T. Robaczewski, D. Lisak, R. S. Trawiński, P. Masłowski. “Broadband CO₂ Measurements with VIPA Spectrometer in the Near-Infrared”. **Photonics Lett. Pol.** 7, p. 78, 2015. DOI: 10.4302/plp.2015.3.08

Conference papers

1. A. Marconi *et al.* “ANDES, the High Resolution Spectrograph for the ELT: Science Case, Baseline Design and Path to Construction” *Ground-Based Airborne Instrum. Astron. IX*, p. 720–735 Vol. 12184 Aug. 2022 DOI: 10.1117/12.2628689
2. D. Charczun, D. Lisak, A. Nishiyama, T. Voumard, T. Wildi, **G. Kowzan**, V. Brasch, T. Herr, A. J. Fleisher, J. T. Hodges, R. Ciuryło, A. Cygan, P. Masłowski “Electro-Optical Dual-Comb Cavity Ring-Down, Mode Width and Mode Dispersion Spectroscopy” *Conf. Lasers Electro-Opt. 2022 Pap. SM3F1*, p. SM3F.1 May 2022 DOI: 10.1364/CLEO_SI.2022.SM3F.1
3. D. Charczun, A. Nishiyama, **G. Kowzan**, A. Cygan, T. Voumard, T. Wildi, T. Herr, E. Obrzud, V. Brasch, D. Lisak, P. Masłowski “Dual-Comb Cavity-Enhanced Absorption and Dispersion Spectroscopy from Cavity Mode Widths and Mode Shifts Measurement” *2021 Conf. Lasers Electro-Opt. Eur. Eur. Quantum Electron. Conf. 2021 Pap. Ed33*, p. ed_3_3 June 2021
4. D. Charczun, **G. Kowzan**, A. Nishiyama, P. Staniszewski, A. Cygan, D. Lisak, R. S. Trawiński, P. Masłowski “Cavity-Enhanced Direct Optical Frequency Comb Spectroscopy with Tooth-Width Limited Resolution” *Conf. Lasers Electro-Opt.* p. JTh2A.111 2019 DOI: 10.1364/cleo_at.2019.jth2a.111
5. D. Charczun, **G. Kowzan**, A. Nishiyama, P. Staniszewski, A. Cygan, D. Lisak, R. S. Trawiński, P. Masłowski “Comb-Based Fourier-Transform Spectrometry for Broadband Measurements of Absorption and Dispersion” *2019 Conf. Lasers Electro-Opt. Eur. Eur. Quantum Electron. Conf. CLEOEurope-EQEC*, p. nil June 2019 DOI: 10.1109/cleoe-eqec.2019.8871551
6. D. Charczun, **G. Kowzan**, A. Nishiyama, M. Debus, P. Huke, D. Tomaszewska, G. Soboń, A. Cygan, D. Lisak, R. S. Trawiński, P. Masłowski “Fourier-Transform Frequency Comb Cavity Mode Spectroscopy at Hz Level for Trace Gas Measurements” *Adv. Photonics*, p. SeTu4E.7 2018
7. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski “Broadband Cavity-Enhanced Molecular Absorption and Dispersion Spectroscopy with a Frequency Comb-Based VIPA Spectrometer” *Adv. Photonics*, p. SeTu3H.4 2018
8. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski “Optical Cavity Mode Measurements at Hz-Level Precision with a Comb-Based VIPA Spectrometer” *CLEO Sci. Innov.* p. STu3N.8 2018
9. N. Lang, A. Puth, **G. Kowzan**, S. Hamann, J. Röpcke, P. Masłowski, J.-P. H. van Helden “Spectroscopic Investigations of Plasma Nitrocarburizing Processes with a Mid-Infrared Frequency Comb” *High-Bright. Sources Light-Driven Interact.* p. MW4C.3 2018 DOI: 10.1364/mics.2018.mw4c.3
10. N. Lang, A. D. F. Puth, S.-J. Klose, **G. Kowzan**, S. Hamann, J. Röpcke, P. Masłowski, J.-P. H. van Helden “Direct Mid-Infrared Frequency Comb Spectroscopy of Nitrocarburizing Plasma Processes” *Light Energy Environ. 2018 E2 FTS HISE Sol. SSL*, p. FM2B.6 2018 DOI: 10.1364/fts.2018.fm2b.6
11. A. Nishiyama, **G. Kowzan**, D. Charczun, V. Silva de Oliveira, A. Ruehl, I. Hartl, K. Minoshima, R. S. Trawiński, P. Masłowski “Application of Cavity-Enhanced Comb-Based Fourier-Transform Spectroscopy to Line Shape Study of Carbon Monoxide in Argon” *CLEO Sci. Innov.* p. STu3P.5 2018

12. A. Nishiyama, **G. Kowzan**, D. Charczun, V. Silva de Oliveira, A. Ruehl, I. Hartl, K. Minoshima, R. S. Trawiński, P. Masłowski “Line Shape Measurements of CO Using Frequency Comb Based Cavity-Enhanced Absorption Spectroscopy” *Adv. Photonics*, p. SeTu3H.3 2018
13. M. Debus, P. Huke, A. Reiners, **G. Kowzan**, P. Masłowski “Data Analysis Methods for Laser Frequency Comb Line Position Measurements with a Fourier Transform Spectrograph” *SPIE Astron. Telesc. Instrum.* p. 107061O July 2018 DOI: 10.1117/12.2312557
14. P. Huke, S. Schäfer, A. Reiners, M. Riva, F. Pepe, P. Masłowski, **G. Kowzan**, U. Seemann, R. McCracken, D. T. Reid, B. Chazelas “ELT-HIRES the High Resolution Spectrograph for the ELT: Fabry-Pérot for Use as Calibration Sources” *Ground-Based Airborne Instrum. Astron. VII*, p. 107029L July 2018 DOI: 10.1117/12.2313394
15. **G. Kowzan**, K. F. Lee, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, M. E. Fermann, R. S. Trawiński, P. Masłowski. “VIPA Spectrometer Calibration and Comb-Cavity Locking Schemes Comparison for Sensitive and Accurate Frequency Comb Spectroscopy”. *J. Phys. Conf. Ser.* 810, p. 012035, 2017. DOI: 10.1088/1742-6596/810/1/012035
16. D. Lisak, A. Cygan, S. Wójtewicz, P. Wcisło, M. Zaborowski, **G. Kowzan**, P. Masłowski, R. Ciuryło. “Spectral Line-Shape Study by Cavity-Enhanced Complex Refractive Index Spectroscopy”. *J. Phys. Conf. Ser.* 810, p. 012007, 2017. DOI: 10.1088/1742-6596/810/1/012007
17. P. Masłowski, **G. Kowzan**, D. Charczun, D. Lisak, R. Trawiński, L. Rutkowski, A. Johansson, A. Khodabakhsh, A. Foltynowicz, K. Lee, M. Fermann “Optical Frequency Comb Spectroscopy for Gas Metrology and Trace Gas Detection” *CLEO Sci. Innov.* p. SW4J.5 2017
18. M. Zaborowski, P. Wcisło, F. Thibault, S. Wójtewicz, A. Cygan, **G. Kowzan**, Piotr Masłowski, D. Lisak, R. Ciuryło. “Ultra Accurate Measurements and Ab Initio Calculations of Collisional Effects in Pure D₂”. *J. Phys. Conf. Ser.* 810, p. 012042, 2017. DOI: 10.1088/1742-6596/810/1/012042
19. J. M. Charsley, R. A. McCracken, D. T. Reid, **G. Kowzan**, P. Masłowski, A. Reiners, P. Huke “Comparison of Astrophysical Laser Frequency Combs with Respect to the Requirements of HIRES” *SPIE Opt. Metrol.* p. 103290Y June 2017 DOI: 10.1117/12.2271846
20. P. Huke, L. Origlia, M. Riva, J. Charsley, R. McCracken, D. Reid, **G. Kowzan**, P. Masłowski, K. Disseau, S. Schäfer, C. Broeg, M. Sarajlic, F. Dolon, H. Korhonen, A. Reiners, I. Boisse, S. Perruchot, S. Ottogalli, F. Pepe, E. Oliva “Phase A: Calibration Concepts for HIRES” *SPIE Opt. Metrol.* p. 103292M June 2017 DOI: 10.1117/12.2271782
21. **G. Kowzan**, K. F. Lee, M. Paradowska, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, M. E. Fermann, R. S. Trawiński, P. Masłowski “VIPA Spectrometer for Accurate and Sensitive Self-Referenced Frequency Comb Spectroscopy” *CLEO Sci. Innov.* p. SW4H.7 2016
22. L. Rutkowski, A. C. Johansson, A. Khodabakhsh, P. Masłowski, **G. Kowzan**, K. F. Lee, A. A. Mills, C. Mohr, J. Jiang, M. E. Fermann, A. Foltynowicz “Optical Frequency Comb Fourier Transform Spectroscopy with Resolution beyond the Path Difference Limit” *CLEO Sci. Innov.* p. SW4H.1 2016
23. K. F. Lee, **G. Kowzan**, C.-C. Lee, C. Mohr, J. Jiang, T. R. Schibli, P. Masłowski, M. E. Fermann “Broadband Cavity Enhancement with Graphene Modulator” *2015 Eur. Conf. Lasers Electro-Opt. - Eur. Quantum Electron. Conf.* p. CH_9_1 2015 European Conference on Lasers and Electro-Optics - European Quantum Electronics Conference 2015
24. K. F. Lee, **G. Kowzan**, C.-C. Lee, C. Mohr, J. Jiang, T. R. Schibli, P. Masłowski, M. E. Fermann “Broadband, Comb-Resolved, High-Finesse Enhancement Cavity Spectrometer with Graphene Modulator” *CLEO Sci. Innov.* p. SW1G.6 2015

Awards and distinctions

2019.08	Conference travel grant from Polish National Agency for Academic Exchange (NAWA) programme PROM.
2018.07	Distinction for a poster of a young researcher at 50 th EGAS conference, Kraków, Poland.
2016.04–2016.05	Rennes Métropole travel grant for foreign researchers.
2015.08	Amat-Mills Award for a young spectroscopist at <i>The 24th Colloquium on High Resolution Molecular Spectroscopy</i> , Dijon, France.
2015.07	Award for best poster presentation of a young researcher at <i>IV Polska Konferencja Optyczna (IV</i>

- 2013.07 *Polish Optics Conference*), Legnica, Poland.
 Distinction for a poster of a young researcher at *III Polska Konferencja Optyczna (III Polish Optics Conference)*, Sandomierz, Poland.

Scholarships

- 2019.09–2020.05 Doctoral student scholarship within National Science Center *Opus* research project.
 2017.10–2018.10 National Science Center *Etiuda* doctoral scholarship.
 2015.10–2018.06 Nicolaus Copernicus University scholarships for best PhD students.
 2015.10–2018.09 Nicolaus Copernicus University scholarships for PhD students for scientific achievements.
 2015.01–2015.05 Doctoral student scholarship within Foundation for Polish Science *Team* research grant.
 2013.03–2014.06 Masters' student scholarship within Foundation for Polish Science *HOMING Plus* research grant.

Research grants (principal investigator)

- 2021.05–2023.10 Marie-Skłodowska Curie Actions Individual Fellowship-Global Fellowship.
 2018.06–2019.02 Faculty grant for young researchers. Project budget: \$1000 (4000 zł).
 2017.02–2020.02 National Science Center, *Preludium 11*. Project budget: \$26 000 (98 900 zł).
 Project name: *Accurate and precise calculation of spectral line shapes of carbon monoxide perturbed by argon and their verification with the instrumental-line-shape-free method*.
 2016.06–2017.02 Faculty grant for young researchers. Project budget: \$1200 (4500 zł).

Invited talks

1. **G. Kowzan** “Controlling Rotationally-Resolved Two-Dimensional Infrared Spectra with Polarization” *JILA Sci. Semin.* Boulder, Colorado, Aug. 2022
2. **G. Kowzan** “Cavity-Enhanced Ultrafast Spectroscopy” *Colloq. Cent. Theor. Phys. Pol. Acad. Sci.* Warsaw, Poland, Mar. 2021
3. **G. Kowzan** “Rotationally-Resolved Two-Dimensional Infrared Spectroscopy” *NIST Fiber Source Appl. Group Semin.* Boulder, Colorado, Feb. 2021
4. **G. Kowzan** “Broadband, Accurate and Sensitive Molecular Spectroscopy with Frequency Combs” *Semin. Mol. Phys. Dep. Inst. Phys. Rennes* Rennes, France, May 2016
5. **G. Kowzan** “Szerokopasmowa Spektroskopia Absorpcyjna We Wnęce z Wykorzystaniem Optycznego Grzebienia Częstotliwości” *Semin. Sci. Circ. Phys. Stud. Inst. Phys. NCU* Toruń, Poland, Mar. 2015

Contributed talks and posters

Beyond the following talks, I also presented **21 posters**.

1. **G. Kowzan**, M. C. Silfies, N. Lewis, T. K. Allison “Polarization Control of Rotationally-Resolved 2DIR Spectroscopy” *Int. Symp. Mol. Spectrosc.* Urbana, Illinois (virtual), June 2021
2. **G. Kowzan**, M. C. Silfies, N. Lewis, T. K. Allison “Rotationally-Resolved Cavity-Enhanced 2DIR Spectroscopy” *APS March Meet. 2021* Virtual, USA, Mar. 2021
3. **G. Kowzan** “How to Take a Photo of a Forest—Molecular Spectroscopy with a Frequency Comb” *6th Semin. Star Form. Astrochem. Tor.* Toruń, Poland, Jan. 2020
4. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski “Broadband Hz-level Spectroscopy with an Optical Frequency Comb” *26th Colloq. High-Resolut. Mol. Spectrosc.* Dijon, France, Aug. 2019
5. **G. Kowzan** “Selected Applications of Acousto-Optic Modulators in High-Precision Spectroscopy” *14th Sch. Acousto-Opt. Appl.* Toruń, Poland, June 2019
6. **G. Kowzan**, Y. Chen, M. C. Silfies, J. M. Bautista, T. K. Allison “Widely Tunable Cavity-Enhanced Ultrafast Spectroscopy” *10th Int. Meet. At. Mol. Phys. Chem.* Madrid, Spain, June 2019
7. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski “Broadband Complex Gas Spectroscopy with Sub-kHz Level Resolution Comb Spectrometer” *25th Int. Conf. High Resolut. Mol. Spectrosc.* Bilbao, Spain, Sept. 2018

8. **G. Kowzan**, D. Charczun, A. Cygan, R. S. Trawiński, D. Lisak, P. Masłowski “Optical Cavity Mode Measurements at Hz-Level Precision with a Comb-Based VIPA Spectrometer” *CLEO Laser Sci. Photonic Appl.* San Jose, CA, US, May 2018
9. D. Charczun, **G. Kowzan**, A. Cygan, K. Kropidłowska, J. Zawitowska, R. S. Trawiński, D. Lisak, P. Masłowski “Spektrometria Fourierowska Dla Spektroskopii Szerokości Modów Wnęki Optycznej” *IV Pol. Konf. Optyczna* Gniezno, Poland, July 2017
10. **G. Kowzan**, K. F. Lee, M. Paradowska, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, M. E. Fermann, R. S. Trawiński, P. Masłowski “Accurate and Sensitive Molecular Spectroscopy with a Virtually Imaged Phased Array Spectrometer and an Optical Frequency Comb” *24th Int. Conf. High Resolut. Mol. Spectrosc.* Prague, Czech Republic, Sept. 2016
11. **G. Kowzan**, K. F. Lee, M. Paradowska, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, M. E. Fermann, R. S. Trawiński, P. Masłowski “Self-Referenced, Accurate and Sensitive Frequency Comb Spectroscopy with a VIPA Spectrometer” *Winter Coll. Opt. Opt. Freq. Combs—from Multispecies Gas Sens. High Precis. Interrog. At. Mol. Targets* Trieste, Italy, Feb. 2016
12. **G. Kowzan**, M. Paradowska, M. Borkowski, P. Ablewski, S. Wójtewicz, K. Stec, D. Lisak, R. S. Trawiński, P. Masłowski “Cavity-Enhanced Frequency Comb Spectroscopy with Virtually-Imaged Phase Array Spectrometer” *OPTO2015 OPTO-Meet. Young Res.* Wrocław, Poland, May 2015

Research stays

2018.10–2019.03	Stony Brook University, New York, United States, in Thomas Allison group.
2017.11	University of Rennes 1, Rennes, France, with Franck Thibault.
2017.09	Leibniz Institute for Plasma Science and Technology, Greifswald, Germany, in Jean-Pierre van Helden group.
2016.07	Institute of Physics, Zagreb, Croatia, in Ticijana Ban group.
2016.04–05	University of Rennes 1, Rennes, France, with Franck Thibault.
2014.07–09	IMRA America, Ann Arbor, MI, United States, in Martin Fermann group.
2013.11	University of Umea, Sweden, in Aleksandra Foltynowicz group.
2013.09	University of Rostock, Rostock, in Wolfram Miekisch group.

Courses taught

Fundamentals of electronics – laboratory, Computer course T – LaTeX, Computer course – Python, Computer course – Python 2, Fundamentals of programming 1.

Supervising and mentoring

I supervised the work of undergraduate students: Michał Słowiński, Przemysław Staniszewski, Magdalena Paradowska, Joanna Zawitowska, Piotr Gładysz, Max Buskirk, and graduate students: Dominik Charczun, Alexander Kramer, Wangshu Wen, Yuanchi Qing.

Professional service

- Reviewer for *Journal of Quantitative Spectroscopy and Radiative Transfer*, *Optics Letters*,
- Organizing committee member for *23rd International Conference on Spectral Line Shapes*,
- Organizing committee member for I, II Kopernikańskie Sympozjum Studentów Nauk Przyrodniczych (*Copernican Symposium of Natural Science Students*),
- Head of the organizing committee for IX Ogólnopolska Sesja Kół Naukowych Fizyków (*IX Seminar of Polish Scientific Circles of Physics Students*),
- President of the Scientific Circle of Physics Students in Toruń (10.2009–6.2011),
- Member of The Optical Society of America (2017-2018, 2022–),
- Member of Polish Physical Society (11.2020–),
- Member of American Physical Society (11.2020–11.2021),

Outreach

- 2021 Short interview about Marie Curie Fellowship on Polish Radio “Czwórka”.
- 2015–2017 Lab tours for high school students, around 705 participants in total.
- 2016 Participation in popular science TV show “Astronarium” on European Extremely Large Telescope and the HIRES spectrograph.
- 2015.10 Short lecture for high school students “Lightning-fast spectroscopy”, part of a series of popular science events “Modern Atomic, Molecular and Optical Physics for Young People II”.