Biographical Information for Georg A. Raithel

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Professional Preparation:

7/86 - 12/87	:	Diploma of Physics (grade 0.7 = best possible grade), Univ. of Munich.
2/88 - 3/90	:	Scientific assistant and Ph.D. in Physics (grade = summa cum laude), Univ. of Munich.
4/90 - 8/95	:	Scientific assistant and Habilitation, Univ. of Munich, Germany.
9/95 - 8/97	:	Post-doctoral research, experimental atomic physics, NIST, Gaithersburg, MD.

Appointments:

9/04 -	:	Professor of Physics, University of Michigan.
9/02 - 8/04	:	Associate Professor of Physics, University of Michigan.
9/97 - 8/02	:	Assistant Professor of Physics, University of Michigan.

APS Fellow, Rackham Distinguished Faculty Achievement Award, APS DAMOP Secretary/Treasurer 2011-2014, Shanxi University Bairen Plan 2015-2018.

Two US patents (US-9,831,754 "Miniature Mechanical Shutter", US-9,970,973 B2 "Atom-based electromagnetic radiation electric-field and power sensor"), two European patents, two patent applications.

Five closely related products:

1. "Atom-based rf electric field metrology: From self-calibrated measurements to subwavelength and near-field imaging," C. L. Holloway, M. T. Simons, J. A. Gordon, P. F. Wilson, C. M. Cooke, D. A. Anderson, G. Raithel, IEEE Trans. Electromagn. Compat. **59**, 717-728 (2017).
2. "Sub-wavelength imaging and field mapping via electromagnetically induced transparency and Autler-Townes splitting in Rydberg atoms," C. L. Holloway, J. A. Gordon, A. Schwarzkopf, D. A. Anderson, S. A. Miller, N. Thaicharoen, G. Raithel, Appl. Phys. Lett. **104**, 244102 (2014).
3. "Millimeter wave detection via Autler-Townes splitting in rubidium Rydberg atoms," J. A. Gordon, C. L. Holloway, A. Schwarzkopf, D. A. Anderson, S. Miller, N. Thaicharoen, G. Raithel, Appl. Phys. Lett. **105**, 024104 (2014).
4. "Optical measurements of strong microwave fields with Rydberg atoms in a vapor cell," D. A. Anderson, S. A. Miller, G. Raithel, J. A. Gordon, M. L. Butler, C. L. Holloway, Phys. Rev. Applied **5**, 034003 (2016).
5. "Paschen-Back effects and Rydberg-state diamagnetism in vapor-cell electromagnetically induced transparency," L. Ma, D. A. Anderson, G. Raithel, Phys. Rev. A **95**, 061804 (2017).

Five less closely related products:

1. "Radio-frequency-modulated Rydberg states in a vapor cell," S. A. Miller, D. A. Anderson, G. Raithel, New J. Phys. **18**, 053017 (2017).
2. "Broadband Rydberg atom-based electric-field probe for SI-traceable, self-calibrated measurements," C. L. Holloway, J. A. Gordon, S. Jefferts, A. Schwarzkopf, D. A. Anderson, S. A. Miller, N. Thaicharoen, G. Raithel, IEEE Trans. Antennas Propag. **62**, 6169-6182 (2014).
3. "Electric field metrology for SI traceability: Systematic measurement uncertainties in electromagnetically induced transparency in atomic vapor," C. L. Holloway, M. T. Simons, J. A. Gordon, A. Dienstfrey, D. A. Anderson, G. Raithel, J. Appl. Phys. **121**, 233106 (2017).
4. "Electromagnetically Induced Transparency (EIT) and Autler-Townes (AT) splitting in the presence of band-limited white Gaussian noise," M. T. Simons, M. D. Kautz, C. L. Holloway, D. A. Anderson, G. Raithel, D. Stack, Marc C. St. John, Wansheng Su, J. Appl. Phys. **123**, 203105 (2018).
5. "Rydberg electromagnetically induced transparency in a large Hilbert space," Y. Xue, L. Hao, Y. Jiao, X. Han, S. Bai, J. Zhao, G. Raithel, Phys. Rev. A **99**, 053426 (2019).

Synergistic Activities:

Chief Scientist and co-founder of Rydberg Technologies Inc., a research and development company and manufacturer of quantum technologies for next-generation sensing, measurement, and imaging solutions.

Associate Chair for Research at the Physics Department (2009-2012), University of Michigan.

APS DAMOP Secretary/Treasurer 2011-2014.

Regular participation in the NSF REU program.

Outreach: Teaching of a course in the Michigan Math and Science Scholars (MMSS) program, which is a series of two-week summer courses for high-school students (www.math.lsa.umich.edu/mmss). Organizer, movie producer and webmaster for the Michigan Physics Olympiad (http://olympiad.physics.lsa.umich.edu/).