

List of Publications

SHORT LIST OF MOST IMPORTANT PUBLICATIONS

1. **S. Knappe**, V. Shah, P. Schwindt, L. Hollberg, J. Kitching, L.-A. Liew, J. Moreland, *A Microfabricated Atomic Clock*, Appl. Phys. Lett. **85**, 1460-1462 (2004).
2. P.D.D. Schwindt, **S. Knappe**, V. Shah, L. Hollberg, J. Kitching, L.-A. Liew, J. Moreland, *A Chip-Scale Atomic Magnetometer*, Appl. Phys. Lett. **85**, 6409-6411 (2004).
3. Y. Wang, M. Eardley, **S. Knappe**, J.M. Moreland, L. Hollberg, and J. Kitching, *Magnetic resonance in atomic vapor excited by a mechanical resonators*, Phys. Rev. Lett. **97**, 227602 (2006).
4. V. Shah, **S. Knappe**, P.D. Schwindt, L. Hollberg, and J. Kitching, *Subpicotesla atomic magnetometry with a microfabricated vapor cell*, Nature Photonics **1**, 649-652 (2007).
5. T.Theis, P. Ganssle, G. Kervern, **S. Knappe**, and J. Kitching, M.P. Ledbetter, D. Budker, A. Pines, *Parahydrogen-enhanced zero-field nuclear magnetic resonance*, Nature Physics **7**, 571-575 (2011).
6. T.H. Sander, J. Preusser, R. Mhaskar, J. Kitching, L. Trahms, and **S. Knappe**, *Magnetoencephalography with a chip-scale atomic magnetometer*, Biomed. Opt. Express **3**, 981-990 (2012).

REVIEWED SCIENTIFIC PUBLICATIONS

1. V. Gomer, F. Strauch, B. Überholz, **S. Knappe**, D. Meschede, *Single-atom dynamics revealed by photon correlations*, Phys. Rev. A, **58**, R1657-R1660 (1998).
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3. C. Affolderbach, A. Nagel, **S. Knappe**, C. Jung, D. Wiedenmann, R. Wynands, *Nonlinear spectroscopy using a vertical-cavity surface-emitting laser (VCSEL)*, Appl. Phys. B **70**, 407-413 (2000).
4. A. Nagel, C. Affolderbach, **S. Knappe**, R. Wynands, *Influence of excited state hyperfine structure on ground state coherence*, Phys. Rev. A **61**, 012504 (2000).
5. **S. Knappe**, W. Kemp, C. Affolderbach, A. Nagel, R. Wynands, *Splitting of coherent population trapping resonances by the nuclear magnetic moment*, Phys. Rev. A **61**, 012508 (2000).
6. J. Kitching, **S. Knappe**, N. Vukićević, L. Hollberg, R. Wynands, W. Weidemann, *A microwave frequency reference based on VCSEL-driven dark line resonances in Cs vapor*, IEEE Trans. Instrum. Meas. **49**, 1313-1317, (2000).
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8. M. Stähler, **S. Knappe**, C. Affolderbach, W. Kemp, R. Wynands, *Picotesla magnetometry with coherent dark states*, Europhys. Lett. **53**, 323-328 (2001).
9. J. Kitching, H. G. Robinson, L. Hollberg, **S. Knappe**, R. Wynands, *Optical pumping noise in laser-pumped, all-optical microwave frequency references*, J. Opt. Soc. Am. B **18**, 1676-1683 (2001).
10. J. Kitching, L. Hollberg, **S. Knappe**, R. Wynands, *Frequency-dependent optical pumping effects in atomic Λ -systems*, Opt. Lett. **26**, 1507-1509 (2001).
11. J. Kitching, L. Hollberg, **S. Knappe**, R. Wynands, *A compact atomic clock based on coherent population trapping*, Electron. Lett. **37**, 1449-1451 (2001).
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14. M. Stähler, R. Wynands, **S. Knappe**, J. Kitching, L. Hollberg, A. Taichenachev, V. Yudin, *Coherent population trapping resonances in thermal ^{85}Rb vapor: D1 versus D2 line excitation*, Opt. Lett. **27**, 1472-1474 (2002).
15. C. Affolderbach, M. Stähler, **S. Knappe**, R. Wynands, *An all-optical, high-sensitivity magnetic gradiometer*, Appl. Phys. B, published on-line on Nov. 15, 2002.
16. J. Kitching, **S. Knappe**, L. Hollberg, *Miniature vapor-cell atomic frequency references*, Appl. Phys. Lett. **81**, 553-555 (2002).
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55. R. Jimenez, **S. Knappe**, J. Kitching, and M. Prouty, *High-bandwidth optical magnetometer*, J. Opt. Soc. Am B **29**, 3398-3403 (2012).
56. L. Weller, K. Kleinbach, M. Zentile, **S. Knappe**, I. Hughes, and C. Adams, *An optical isolator using an atomic vapor in the hyperfine Paschen-Back regime*, Opt. Lett. **37**, 3405-3407 (2012).
57. L. Weller, K. Kleinbach, M. Zentile, **S. Knappe**, I. Hughes, and C. Adams, *Absolute absorption and dispersion of a rubidium vapour in the hyperfine Paschen-Back regime*, J. Phys. B **45**, 215005 (2012).
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64. O. Alem, T.H. Sander, R. Mhaskar, J. LeBlanc, H. Eswaran, U. Steinhoff, Y. Okada, J. Kitching, L. Trahms, and **S. Knappe**, *Fetal magnetocardiography measurements with an array of microfabricated optically-pumped magnetometers*, Phys. Med. Biol. **69**, 4797-4811 (2015).
65. A. Dellis, V. Shah, E. Donley, **S. Knappe**, J. Kitching, *Low helium permeation cells for atomic microsystems technology*, Opt. Lett. **41**, 2775-8 (2016).
66. D. Kennedy, S. Seltzer, R. Jimenez-Martinez, B. Patton, H. Ring, N. Malecek, **S. Knappe**, E. Donley, J. Kitching, V. Bajaj, and A. Pines, *An optimized microfabricated platform for the optical generation and detection of hyperpolarized ^{129}Xe* , Scientific Reports **7**, 43994 (2017).
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69. O. Alem, R. Mhaskar, R. Jimenez-Martinez, D. Sheng, J. LeBlanc, L. Trahms, T. Sander, J. Kitching, **S. Knappe**, *Magnetic field imaging with microfabricated optically-pumped magnetometers*, Optics Express **25**, 282368 (2017).
70. V. Gerginov, S. Krzyzewski, **S. Knappe**, *A Pulsed operation of a miniature scalar optically pumped magnetometer*, Journal of the Optical Society of America B **34**, 1429-1434 (2017)

OTHER SCIENTIFIC PUBLICATIONS

1. J. Kitching, N. Vukicevic, L. Hollberg, **S. Knappe**, C. Affolderbach, R. Wynands, and W. Weidemann, *Microwave Frequency Reference Based on VCSEL-Driven Dark Line Resonances in Cs Vapor*, Proc. 2000 IEEE International Frequency Control Symposium (FCS).
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