

Book Chapters and Invited Reviews

- [1] Atomic Coherence Phenomena, A. Belyanin, G.R. Welch, and M.O. Scully, in: Encyclopedia of Modern Optics, edited by Robert D. Guenther, Duncan G. Steel and Leopold Bayvel, Elsevier, Oxford, 2004, ISBN 0-12-227600-0, pp.247-255.
- [2] Book Chapter 6: Raman Injection and Inversionless Intersubband Lasers, Alexey Belyanin, Federico Capasso, Mariano Troccoli, in: Intersubband transitions: physics and devices, Ed. by R. Paiella, McGraw-Hill, 2005.
- [3] Book Chapter 5: Optical Nonlinearities in Intersubband Transitions and Quantum Cascade Lasers, C. Gmachl, O. Malis, and A. Belyanin, in: Intersubband Transitions: Physics and Devices, ed. by R. Paiella, McGraw-Hill, 2005 (in press).
- [4] Atomic and nuclear interference effects for quantum information processing, O. Kocharovskaya, A. Belyanin, I. Mariyenko and Y. Rostovtsev, in: *The Physics of Communication*, Proc. XXII Solvay Conference, ed. by I. Antoniou, V.A. Sadovnichy, and H. Walther, World Scientific, 485-495 (2003).

Refereed publications

- [1] Cooperative emission of quantized electron-hole plasma, Y.D. Jho et al., PRL, submitted.
- [2] Quantum electrodynamics of accelerated atoms in free space and in confined cavities, A. Belyanin, V. Kocharovsky, M.O. Scully, E. Fry, and F. Capasso, quant-ph/0412134, Phys. Rev. A submitted.
- [3] Coherent nonlinear optics with quantum cascade structures, A. Belyanin, D. Liu, Feng Xie, F. Capasso, and M. Troccoli, Journal of Modern Optics, 52, 2293 (2005).
- [4] M. Belkin, M. Troccoli, L. Diehl, F. Capasso, A. Belyanin, D.L. Sivco, A.L. Cho, Quasi-phase matching of intersubband second-harmonic generation by a spatially periodic bias voltage in quantum cascade lasers, Appl. Phys. Lett., submitted.
- [5] A. Gomez-Iglesias, D. Wasserman, C. Gmachl, A. Belyanin, and D.L. Sivco, Stimulated electronic Anti-Stokes Raman emission in Quantum Cascade lasers, Appl. Phys. Lett., 87, 261113 (2005).
- [6] Far-infrared few-cycle-pulse generation in quantum-well heterostructures under femtosecond laser pumping, A. Belyanin, D. Pestov, V. Kocharovsky, Vl. Kocharovsky, and M.O. Scully, Acta Physica Polonica A 107 (1), 151-157 (2005).
- [7] Raman injection laser, Mariano Troccoli, Alexey Belyanin, Federico Capasso, Ertugrul Cubukcu, Deborah L. Sivco, and Alfred Y. Cho, Nature, 433, 845 (2005).
- [8] Milliwatt second-harmonic generation in quantum-cascade lasers with modal phase-matching, Malis, O., Belyanin, A., Sivco, D.L., Chen, J., Sergent, A.M., Gmachl, C., and Cho, A.Y., Electron. Lett. 40, 1586 (2004).

- [9] Reply: Enhancing acceleration radiation from ground-state atoms via cavity quantum electrodynamics, M.O. Scully, V. Kocharovsky, A. Belyanin, E. Fry, and F. Capasso, *Phys. Rev. Lett.* 93, 129302 (2004).
- [10] Trinesha S. Mosely, Alexey Belyanin, Claire Gmachl, Deborah L. Sivco, Milton L. Peabody, and Alfred Y. Cho "Third harmonic generation in a Quantum Cascade laser with monolithically integrated resonant optical nonlinearity", *Optics Express* 12, pp. 2972 - 2976, 2004.
- [11] D. Pestov, A. Belyanin, V. Kocharovsky, Vl. Kocharovsky, and M.O. Scully, "Mid/far-infrared few-cycle-pulse emission via resonant mixing in semiconductor heterostructures", *Journal of Modern Optics*, 51, 2523-2531, 2004.
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- [13] Temperature dependence and single-mode tuning behavior of Second Harmonic Generation in Quantum Cascade Lasers, C. Gmachl, N. Owschimikow, A. Belyanin, A. M. Sergent, D. L. Sivco, M. L. Peabody, F. Capasso, A. Y. Cho, *Appl. Phys. Letters*, 84, 2751 (2004).
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- [22] Atomic and nuclear interference effects for quantum information processing, O. Kocharovskaya, A. Belyanin, and Y. Rostovtsev, *Quantum Computers and Computing*, accepted for publication (2002).
- [23] Constraints on the extremely high energy cosmic ray accelerators from classical electrodynamics, Aharonyan F.A., Belyanin A.A., Derishev E.V., Kocharovskiy V.V., Kocharovskiy VI.V., *Phys. Rev. D* 2002, 66, 023005.
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