



TeraNova Publications

IST-511415

Period 3: 1st September 2006 – 31st August 2007

- [1] *THz Near-field Measurements of Metal Structures*, A. J. L. Adam, J. M. Brok, P. C. M. Planken, M. A. Seo, D. S. Kim, Accepted for publication in *Comptes Rendues Physique*.
- [2] *Measurement and Calculation of the Near-field of a Terahertz Apertureless Scanning Optical Microscope*, A. J. L. Adam, N. C. J. van der Valk, and P. C. M. Planken, *J. Opt. Soc. Am.* **B 24**, 1080 (2007).
- [3] *Frequency-dependent Radiation Patterns Emitted by Terahertz Plasmons on Finite Length Cylindrical Metal Wires* J. A. Deibel, N. Berndsen, K. Wang, D. M. Mittleman, N. C. J. van der Valk, and P. C. M. Planken, *Opt. Express* **14**, 8772 (2006).
- [4] *Shape Resonance Omni-directional Terahertz Filters with Near-unity Transmittance*. J. Lee, M. Seo, D. Park, D. Kim, S. Jeoung, Ch. Lienau, Q-Han Park, and P. Planken, *Opt. Express*. **14**, 1253 (2006).
- [5] *Propagation of Terahertz Radiation Through Random Structures: A Novel Theoretical Approach And Experimental Validation*, J.R. Fletcher, G.P. Swift, De Chang Dai, J.A. Levitt and J.M. Chamberlain. *Journal of Applied Physics*. Vol **101** (1) 013102-11.
- [6] *Pulsed THz Signal Reconstruction*, J.R. Fletcher, G.P. Swift, DeChang Dai and J.M. Chamberlain P.C. Upadhyya. *Journal of Applied Physics*, In Press.
- [7] *Molecular Spectroscopy with TeraHertz Quantum Cascade Lasers*, H.-W. Hübers, S. G. Pavlov, H. Richter, A. D. Semenov, L. Mahler, A. Tredicucci, H. E. Beere, and D. A. Ritchie, *J. Nanoelectron. Optoelectron.* **2**, 101 (2007).
- [8] *Frequency Characterization of a Terahertz Quantum-cascade Laser*, N. Beverini, G. Carelli, A. De Michele, A. Moretti, L. Mahler, A. Tredicucci, H. E. Beere, and D. A. Ritchie, *IEEE Trans. Instrum. Meas.* **56**, 262 (2007).
- [9] *Tuneable Terahertz Quantum Cascade Lasers with an External Cavity*, J. Xu, J. M. Hensley, D. B. Fenner, R. P. Green, L. Mahler, A. Tredicucci, M. G. Allen, F. Beltram, H. E. Beere, and D. A. Ritchie, *Appl. Phys. Lett.*, in Press.
- [10] *Amplification of THz Radiation in Quantum Cascade Structures*, C. Mauro, R. P. Green, A. Tredicucci, F. Beltram, H. E. Beere, and D. A. Ritchie, *J. Appl. Phys.* In Press.
- [11] *THz Transfer Onto a Telecom Optical Carrier* S. Dhillon, C. Sirtori, J. Alton, S. Barbieri, A. de Rossi, H. Beere, and D. Ritchie, *Nature Photonics*, **1**:411, 2007.
- [12] *13 GHz Direct Modulation of THz Quantum Cascade Lasers* Barbieri, W. Maineult, S. Dhillon, C. Sirtori, J. Alton, N. Breuil, H. Beere, and D. Ritchie. Accepted for publication. *Appl. Phys. Lett* **91**, 143510 (2007).
- [13] *Thermal Properties of THz Quantum Cascade Lasers Based on Different Optical Waveguide Configuration*, M. Vitiello, G. Scamarcio, V. Spagnolo, J. Alton. S. Barbieri, C. Worrall, H. Beere, D. Ritchie, C. Sirtori, *Appl. Phys. Lett.* **89**, 021111 (2006).
- [14] *Subband Electronic Temperatures and Electron-Lattice Relaxation in THz Quantum Cascade Lasers with Different Conduction Band Offsets*, M. Vitiello, G. Scamarcio, V. Spagnolo, C. Worrall, H. Beere, D. Ritchie, C. Sirtori, J. Alton. S. Barbieri, *Appl. Phys. Lett.* **89**, 131114 (2006).
- [15] *Low Threshold THz QC Lasers With Thin Core Regions*, Y. Chassagneux, J. Palomo, R. Colombelli, S. Barbieri, Dhillon, C. Sirtori, H. Beere, J. Alton, and D. Ritchie, *Electron. Lett.* **43**, 205 (2007).
- [16] *Metallic Slit Waveguide for Dispersion-Free Low-Loss Terahertz Signal Transmission*. M. Wächter, M. Nagel, H. Kurz, *Appl. Phys. Lett.* **90**, 061111 (2007).
- [17] *Metallic Wave-Impedance Matching Layers for Broad-Band Optical Systems*, J. Kröll, J. Darmo and K. Unterrainer, *Optics Express*, **15** (2007), 67552-6560.
- [18] *Terahertz Optical Activity of Sucrose Single Crystals*, J. Kröll, J. Darmo and K. Unterrainer, *Vibrational Spectroscopy*, **43** (2007), 324-329.



- [19] *Longitudinal Spatial Hole Burning in Terahertz Quantum Cascade Lasers*, J. Kröll, J. Darmo, K. Unterrainer, S.S. Dhillon, C. Sirtori, X. Marcadet, and M. Calligaro, *Appl. Phys. Lett.* **90** (2007), 231116.
- [20] *Terahertz Quantum-cascade Laser Dynamics in Time-Domain* J. Kröll, J. Darmo, S. Dhillon, X. Marcadet, M. Calligaro, C. Sirtori, and K. Unterrainer, AIP Conference Proceedings 893,"28th International Conference on the Physics of Semiconductors", p. 1435.
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- [22] *Monolithic Integration of Low-Temperature-Grown GaAs with a Two-Dimensional Electron Gas*, Cunningham, J., Upadhya, P. C., Tiang, C. K., Lachab, M., Khanna, S., Linfield, E. H., and Davies, A. G., *Semiconductor Science and Technology* **22**, 811-813 (2007).
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- [25] *Advanced Optoelectronics in III-V Semiconductor Compounds*, M. Först, M. Nagel, M. Awad, M. Wächter, T. Dekorsy, and H. Kurz, *Phys. Stat. Sol. (b)* **244**, 2971-2987 (2007).
- [26] *Horn Antennas for Terahertz Quantum Cascade Lasers*, M.I. Amanti, M. Fischer, C. Walther, G. Scalari, and J. Faist, *Electron. Lett.* **43**, 573.
- [27] *Quantum Cascade Lasers Operating from 1.2 to 1.6 THz*, Christoph Walther, Milan Fischer, Giacomo Scalari, Romain Terazzi, Nicolas Hoyler, and Jérôme Faist, *Appl. Phys. Lett.* **91**, 131122 (2007).
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- [31] *Investigation of Aqueous Alcohol Solutions with Reflection Terahertz Time-Domain Spectroscopy*, P. Uhd Jepsen, U. Møller, and H. Merbold, *Opt. Express (Accepted, October 2007)*.
- [32] *Phase-resolved Measurements of Stimulated Emission in a Laser*, Josef Kröll, Juraj Darmo, Sukhdeep S. Dhillon, Xavier Marcadet, Michel Calligaro, Carlo Sirtori & Karl Unterrainer, *Nature* **449**, 698-702 (2007).