Invited Contributions of 2013

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Firstly I would like to introduce myself as new Associate Editor of Journal of Infrared Millimeter and Terahertz Waves (JIMTW). I will contribute by handling invited review articles and special issues in coordination with the Guest Editors and the Editor in Chief.

The year 2013 represents an extraordinary period for this Journal. For the first time JIMTW overcame the impact factor barrier of one, reaching 1.12 as a consequence of the increasing quality of the authors contributions, the efforts of the Editorial Board, the Editorial Review Board and generally speaking the entire terahertz community that supports it. An aspect that has also contributed to the improvement of the Journal's impact is that it has become a natural repository of review articles which have at its time become standard references in their particular topics. Therefore we encourage authors to contact members of the editorial board, and particularly myself (via e-mail or personally during conferences) to discuss possible reviews or topical issues for inclusion in the current or future volumes.

I take this opportunity to summarize all the invited reviews contained in volume 34 (2013). We can find thirteen invited review articles in total of which six were part of the special issue on “Quantum Cascade Lasers”, five more were part of the special issue on “Anisotropy in the Terahertz Band” and two more were part of regular issues. All of these articles are summarized below.

Special issue: Quantum Cascade Lasers

- *High Resolution Terahertz Spectroscopy with Quantum Cascade Lasers* by H.-W. Hübers, R. Eichholz, S. G. Pavlov, H. Richter from the Technische Universität Berlin (Germany) provides an overview on the use of single-mode and multi-mode QCLs for spectroscopy [1].

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- *Spectral Properties of THz Quantum-Cascade Lasers: Frequency Noise, Phase-Locking and Absolute Frequency Measurement.* This outstanding article presented by co-authors from multiple institutions presents a series of results on the coherence and stability properties of QCLs and novel methods to control such properties [2].
- *Hot Electrons in THz Quantum Cascade Lasers* by G. Scamarcio from Università degli studi di Bari, M. S. Vitiello from Scuola Normale Superiore and V. Spagnolo from CNR-IFN in Italy presents a discussion on the role of the lattice temperature and the electronic temperature on QCLs performance [3].
- *InGaAs/GaAsSb/InP terahertz quantum cascade lasers* by C. Deutsch et al. from the Technische Universität Wien (Austria) provides an overview on various III-V based QCL structures and their comparative performance [4].
- *Monolithically integrated two-dimensional arrays of surface-emitting photonic-crystal terahertz lasers* by G. Servin et al. from Université Paris (France) Sud and University of Cambridge (UK) presents an integrated array of QCLs with the capacity of producing tunable radiation in the vicinity of 2.7 THz [5].
- *Terahertz LC Microcavities: From Quantum Cascade Lasers to Ultrastrong Light-Matter Coupling* by M. Geiser et al. from ETH-Zurich (Switzerland) is an excellent review about recent research on the use of inter-sub-band transitions in the THz range confined in sub-wavelength microcavities [6].

Review articles in regular issues

- *Advances in Polarizer Technology for Terahertz Frequency Applications* by F. Yan et al. from the Chinese University of Hong Kong and the Hong Kong University of Science and Technology reviews recent progresses in the design and development of polarizers for the terahertz band [7].
- *Review of Terahertz Technology Readiness Assessment and Applications* by A. Redo-Sanchez, N. Laman, B. Schulkin and T. Tongue from Zomega Terahertz Corporation (USA) presents an overview on the current state of terahertz technology for industrial applications [8].

Special issue: Anisotropy in the Terahertz Band

- *Recent advances in birefringence studies at THz frequencies* by K. Wiesauer and C. Jördens from Research Center for Non-destructive Testing (Austria) and the Technische Universität Braunschweig (Germany) provides an overview that includes instrumental advances, analysis techniques and experiments for the extraction of birefringence of materials from time-domain spectroscopic data [9].
- *Developments in THz range ellipsometry* by M. Neshat and P. Armitage from the University of Tehran (Iran) and Johns Hopkins University (USA) presents an overview on the implementation of terahertz time-domain ellipsometry and recent experiments for the determination of complex refractive indices of a variety of materials using this technique [10].
- *Towards Dynamic, Tunable, and Nonlinear Metamaterials via Near Field Interactions: A Review* G. R. Keiser et al. from R. Averitt's group at Boston University (USA) discusses recent advances and applications of anisotropic metamaterials for various applications such as electron spin resonance [11].

- *Review of anisotropic terahertz material response* by T. Arikawa et al. from J. Kono's group at Rice University (USA) presents a review that includes a phenomenological discussion of the origin of anisotropy, followed by the presentation of a number of experiments in which aligned carbon nanotubes and other materials are studied [12].
- *Polarization-sensitive THz-TDS and its application to anisotropy sensing* by T. Nagashima, M. Tani, and M. Hangyo from the University of Osaka and University of Fukui (Japan) provides an informative review on state-of-the-art instrumental developments that are currently being used for polarimetry and ellipsometry in the terahertz band [13].

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