

2017-2018 March

• **Journal Paper**

Y. Takida, K. Nawata, S. Suzuki, M. Asada, and H. Minamide, "Terahertz-wave differential detection based on simultaneous dual-wavelength up-conversion", AIP ADVANCES vol. 7, 035020, 2017. DOI: 10.1063/1.4979405

S. Kitagawa, K. Ogino, S. Suzuki, and M. Asada, "Wide frequency tuning in resonant-tunneling-diode terahertz oscillator using forward-biased varactor diode", Japanese Journal of Applied Physics vol. 56, 040301, 2017. DOI: 10.7567/JJAP.56.040301

Y. Takida, K. Nawata, S. Suzuki, M. Asada, and H. Minamide, "Nonlinear optical detection of terahertz-wave radiation from resonant tunneling diodes", OPTICS EXPRESS, vol. 25, No. 5, pp. 5389-5395, 2017. DOI: 10.1364/OE.25.005389

K. Murano, I. Watanabe, A. Kasamatsu, S. Suzuki, M. Asada, W. Withayachumnankul, T. Tanaka, and Y. Monnai, "Low-Profile Terahertz Radar Based on Broadband Leaky-Wave Beam Steering", IEEE Trans. THz Sci. Technol. vol. 7, No. 1, pp. 60-69, Jan. 2017.
DOI: 10.1109/TTHZ.2016.2624514

S. Kitagawa, M. Mizuno, S. Saito, K. Ogino, S. Suzuki, and M. Asada, "Frequency-tunable resonant-tunneling-diode terahertz oscillators applied to absorbance measurement" Jpn. J. Appl. Phys. vol. 56, 058002, 2017. DOI: 10.7567/JJAP.56.058002

N. Oshima, K. Hashimoto, S. Suzuki, and M. Asada, "Terahertz Wireless Data Transmission With Frequency and Polarization Division Multiplexing Using Resonant-Tunneling-Diode Oscillators", IEEE Trans. THz Sci. Technol., vol. 7, no. 5, pp. 593-598, 2017.
DOI: 10.1109/TTHZ.2017.2720470

M. Asada, S. Suzuki, and T. Fukuma, "Measurements of temperature characteristics and estimation of terahertz negative differential conductance in resonant-tunneling-diode oscillators", AIP Advances, vol. 7, 115226, 2017. DOI: 10.1063/1.4979405

K. Ogino, S. Suzuki, M. Asada, "Spectral Narrowing of a Varactor-Integrated Resonant-Tunneling-Diode Terahertz Oscillator by Phase-Locked Loop", *J. Infrared Millimeter Terahz Waves*, vol. 38, pp.1477–1486, 2017. DOI: 10.1007/s10762-017-0439-1

K. Ogino, S. Suzuki, and M. Asada, "Phase Locking and Frequency Tuning of Resonant-Tunneling-Diode Terahertz Oscillators", *IEICE Trans. Electron.*, Vol. E101–C, no. 3, pp. 183-185, 2018. DOI: 10.1587/transele.E101.C.183

浅田 雅洋, 鈴木 左文, "テラヘルツ帯発振を可能にする共鳴トンネルダイオードの構造と物理", *レーザー研究*, vol. 45, no. 12, pp.741-745, 2017.

• Conference Presentation

(Invited)

S. Suzuki and M. Asada, "Terahertz Communications Using Resonant-Tunneling-Diode Oscillators" (Invited), European Conference on Antennas and Propagation, CS48, Palais des congres, Paris, March 22, 2017.

浅田雅洋、(招待講演) "Room-temperature terahertz sources using resonant tunneling diodes", 理研RAPセミナー、理化学研究所、和光、2017/3/17.

浅田雅洋、(招待講演) "共鳴トンネルダイオードを用いたテラヘルツ室温小型光源とその応用"、NICT-理研合同テラヘルツワークショップ、情報通信研究機構、東京、2017/2/28.

M. Asada and S. Suzuki, (Invited) "THz Oscillators Using Resonant Tunnelling Diodes and Their Functions for Various Applications", Workshop in European Microwave Week (EuMW), WTU-01, Nuernberg, Oct. 10, 2017.

S. Suzuki and M. Asada, (Invited) "Tuning and Phase Locking of Resonant-Tunneling-Diode THz Oscillators", International Symposium on Microwave/ Terahertz Science and Applications (MTSA), Iv-22, Okayama, Nov. 20, 2017.

M. Asada and S. Suzuki, (Invited) "Resonant-Tunneling-Diode THz Oscillators and Application to Wireless Communications", Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of THz Devices & Technologies (RJUSE TERATECH-2017), Session VII-8, Troy, NY, Oct. 4, 2017.

S. Suzuki and M. Asada, (Invited) "Resonant-tunneling-diode oscillators for terahertz communications", Shenzhen International Conferences on Advanced Science and Technology (SICAST 2017), PL-4, Shenzhen, China, Dec.4, 2017.

S. Suzuki, and M. Asada, (Invited) "Terahertz Oscillators and Receivers Using Electron Devices for Applications" International Symposium on Organic and Inorganic Electronic Materials and Related Nanotechnologies (EM-Nano), PA2-2-2, Fukui, June 20, 2017.

M. Asada and S. Suzuki, (Invited) "Resonant-tunneling-diode terahertz oscillators and applications". International Symposium toward Future of Advanced Researches in Shizuoka University, Hamamatsu, Mar. 6, 2017.

浅田雅洋, 鈴木左文, (招待講演) "共鳴トンネルダイオードによるテラヘルツ発振器", レーザー学会シンポジウム, S5-3, 京都, 2018年1月25日.

鈴木左文, 浅田雅洋, (招待講演) "電子デバイスを用いたテラヘルツ応用", 電気学会電子デバイス研究会, EDD-18-040, 日光, 2018年3月27日.

(Oral)

N. Oshima, K. Hashimoto, S. Suzuki, and M. Asada, "Terahertz Wireless Data Transmission with Frequency and Polarization Division Multiplexing Using Resonant-Tunneling-Diode Oscillators", European Conference on Antennas and Propagation F-A06, Palais des congres, Paris, March 23, 2017.

瀧田佑馬、縄田耕二、鈴木左文、浅田雅洋、南出泰亜、"共鳴トンネルダイオードから発生した THz 波の非線形波長変換検出", 応用物理学会春季学術講演会、パシフィコ横浜、2017/3/14, 14p-211-8.

Y. Takida, K. Nawata, S. Suzuki, M. Asada, and H. Minamide, "Simultaneous Nonlinear Up-Conversion of Dual-Frequency Terahertz-Wave Radiation", Nonlinear Optics (NLO) 2017, NTu2A.5, Waikoloa, HI, USA, July 18, 2017.

Y. Takida, K. Nawata, S. Suzuki, M. Asada, and H. Minamide, "Nonlinear optical detection of terahertz-wave radiation from resonant-tunneling-diode oscillators," Conference on Lasers and Electro-Optics - European Quantum Electronics Conference (CLEO/Europe-EQEC 2017), CC-3.6, Munich, June 25, 2017.

K. Ogino, S. Suzuki, and M. Asada, "Phase Locking of Resonant-Tunneling-Diode Terahertz Oscillator Using Bias-Dependent Oscillation Frequency", Congress of International Commission for Optics, Tu2G-04, Tokyo, Aug 22, 2017.

R. Izumi, S. Suzuki, and M. Asada, "1.98 THz Resonant-Tunneling-Diode Oscillator with Reduced Conduction Loss by Thick Antenna Electrode", International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), MA3.1, Cancun, Mexico, Aug. 28, 2017.

K. Murano, S. Fukuma, S. Suzuki, M. Asada, W. Withayachumnankul, T. Tanaka, and Y. Monnai, "Design of Terahertz Leaky-Wave Antenna Driven by Resonant-Tunneling Diode", International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), MA3.2, Cancun, Mexico, Aug. 28, 2017.

K. Ogino, S. Suzuki, and M. Asada, "Phase Locking of Resonant-Tunneling-Diode Terahertz Oscillators", International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), MA3.3, Cancun, Mexico, Aug. 28, 2017.

堀川大輔, 大島直人, 鈴木左文, 浅田雅洋, "ラジアルラインスロットアンテナ集積共鳴トンネルダイオード テラヘルツ発振器による円偏波通信", 電子情報通信学会ソサイエティ大会, C14-7, 東京, 2017年9月12日.

鈴木左文, 堀川大輔, 陳雲超, 小池拓哉, 浅田雅洋, "円偏波放射が可能なラジアルラインスロットアンテナ集積共鳴トンネルダイオードテラヘルツ発振器", 電子情報通信学会電子デバイス研究会, No.17, 仙台, 2017年12月19日.

胡霽雨, 若杉良貴, 鈴木左文, 浅田雅洋, "共鳴トンネルダイオードテラヘルツ発振器を用いた振幅変調連続波方式測距システム", 応用物理学会講演会, 19p-A402-14, 東京, 2018年3月19日.

(Poster)

川村成龍、佐々木 峻、鈴木左文、浅田雅洋、”広帯域ボウタイアンテナ集積共鳴トンネルダイオードテラヘルツ発振器”、応用物理学会春季学術講演会、パシフィコ横浜、2017/3/15, 15-P1-10.

荻野康太、鈴木左文、浅田雅洋、”共鳴トンネルダイオードテラヘルツ発振器の位相同期”、応用物理学会春季学術講演会、パシフィコ横浜、2017/3/15, 15-P1-11.

A. K. Dal Bosco, S. Suzuki, M. Asada and H. Minamide, "Study on nonlinear dynamics in Resonant Tunneling Diodes (RTD): unlocking dynamical diversity for THz devices applications", Optical Terahertz Science and Technology (OTST), PS1-14, London, April 3, 2017.

S. Sasaki, S. Suzuki and M. Asada, "Resonant-Tunneling-Diode Terahertz Oscillators Integrated with Broadband Bow-tie Antenna", Compound Semiconductor Week (CSW), P2.31, Berlin, May 16, 2017.

S. Fukuma, S. Suzuki and M. Asada, "Proposal and Gain Estimation of Terahertz Amplifier Using Resonant Tunneling Diodes with 90 Degree Hybrid Coupler", Compound Semiconductor Week (CSW), P2.36, Berlin, May 16, 2017.

A. K. Dal Bosco, S. Suzuki, M. Asada and H. Minamide, "High-frequency oscillations in a resonant tunneling diode with optical feedback", International Symposium on Microwave/Terahertz Science and Applications (MTSA), P-1, Okayama, Nov. 20, 2017.

D. Horikawa, N. Oshima, S. Suzuki, and M. Asada, "Wireless Data Transmission using Circularly-Polarized Wave Generated by Resonant-Tunneling-Diode Terahertz Oscillator Integrated with Radial Line Slot Antennas", International Symposium on Microwave/Terahertz Science and Applications (MTSA), P-26, Okayama, Nov. 20, 2017.

笠木浩平、鈴木左文、浅田雅洋、"ダイポールアレイアンテナ集積共鳴トンネルダイオードテラヘルツ発振器の多素子アレイ", 応用物理学会講演会, 6a-PA3-2, 福岡, 2017年9月6日.

泉 龍之介、鈴木左文、浅田雅洋、"共鳴トンネルダイオードテラヘルツ発振器のアンテナ電極厚膜化による 1.98 THz 基本波発振", 応用物理学会講演会, 6a-PA3-3, 福岡, 2017年9月6日.

陳 雲超, 鈴木左文, 浅田雅洋, "ラジアルラインスロットアンテナ集積による共鳴トネルダイオード発振器の THz 渦波発生", 応用物理学会講演会, 17p-P1-1, 東京, 2018年3月17日.