

2016-2017 March

• Journal Paper

S. Kitagawa, M. Mizuno, S. Saito, K. Ogino, S. Suzuki, and M. Asada, “Frequency-tunable resonant-tunneling-diode terahertz oscillators applied to absorbance measurement” *Japanese Journal of Applied Physics* vol. 56, 058002, 2017.  
<https://doi.org/10.7567/JJAP.56.058002>

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. <http://dx.doi.org/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).  
<https://doi.org/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. <https://doi.org/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 Science and Technology*, vol. 7, No. 1, pp.60-69, 2017. DOI:10.1109/TTHZ.2016.2624514

M. Asada and S. Suzuki, “Room-Temperature Oscillation of Resonant Tunneling Diodes close to 2 THz and Their Functions for Various Applications”, *J. Infrared Millimeter and THz Waves*, vol. 37, pp.1185–1198, 2016.  
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T. Maekawa, H. Kanaya, S. Suzuki, and M. Asada, “Oscillation up to 1.92 THz in resonant tunneling diode by reduced conduction loss”, *Applied Physics Express*, vol. 9, 024101, 2016. <http://doi.org/10.7567/APEX.9.024101>

N. Oshima, K. Hashimoto, S. Suzuki and M. Asada, "Wireless data transmission of 34 Gbit/s at a 500-GHz range using resonant-tunnelling diode terahertz oscillator", *Electronics Letters*, vol. 52, No. 22, pp.1897–1898, 2016. doi: 10.1049/el.2016.3120

S. Kitagawa, S. Suzuki and M. Asada, "Wide frequency-tunable resonant tunnelling diode terahertz oscillators using varactor diodes", *Electronics Letters*, vol. 52, No. 6, pp. 479–481, 2016. doi: 10.1049/el.2015.3921

S. Suzuki, T. Nukariya, Y. Ueda, T. Otsuka, and M. Asada, "High Current Responsivity and Wide Modulation Bandwidth Terahertz Detector Using High-Electron-Mobility Transistor for Wireless Communication", *J. Infrared Millimeter and THz Waves*, vol. 37, pp. 658–667, 2016. DOI: 10.1007/s10762-016-0260-2

• International Conference

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

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*, Paris, March 23, 2017.

M. Asada and S. Suzuki, "Room-Temperature Resonant-Tunneling-Diode Terahertz Oscillators" (Invited Key Note), *International Conference on Infrared, Millimeter and THz Waves (IRMMW-THz), T3C-1*, Copenhagen, Sept. 27, 2016.

K. Kasagi, S. Fukuma, S. Suzuki, and M. Asada, "Proposal and Fabrication of Dipole Array Antenna Structure in Resonant-Tunneling-Diode Terahertz Oscillator Array", *International Conference on Infrared, Millimeter and THz Waves (IRMMW-THz), W5P.08.40*, Copenhagen, Sept.28, 2016.

D. Horikawa, S. Suzuki, M. Asada, "Resonant-Tunneling-Diode Terahertz Oscillator

Integrated With Radial Line Slot Antennas for Circularly Polarized Wave Radiation”, International Conference on Infrared, Millimeter and THz Waves (IRMMW-THz), W5P.08.38, Copenhagen, Sept.28, 2016.

K. Murano<sup>1</sup>, I. Watanabe, A. Kasamatsu, S. Suzuki, M. Asada, W. Withayachumnankul, T. Tanaka, and Y. Monnai, “Demonstration of Short-Range Terahertz Radar Using High-Gain Leaky-Wave Antenna”, International Conference on Infrared, Millimeter and THz Waves (IRMMW-THz), H5P.17.03, Copenhagen, Sept.28, 2016.

M. Asada and S. Suzuki, “Oscillation Characteristics and Applications of Resonant-Tunneling-Diode THz Oscillators” (Invited), [International Workshop on Terahertz Nano-Science](#) (TeraNano VII), Porquerolles, Oct. 4, 2016.

S. Suzuki and M. Asada, “Terahertz oscillators and detectors using InP-based RTDs and HEMTs” (Invited), Workshop in European Microwave Conference (EuMW), WF04, Oct.7, 2016.

S. Suzuki and M. Asada, “Resonant-tunneling-diode THz oscillators and applications: structures for high frequency, high output power, and high functionality” (Invited), Workshop in European Microwave Conference (EuMW), WF07, Oct.7, 2016.

M. Asada, “Terahertz Resonant Tunneling Diodes and Applications” (Plenary Talk), Russia-Japan-USA-Europe Symposium on Fundamental and Applied Problems of Terahertz Devices and Technologies (RJUSE 2016), Tu1-1, Sendai, Nov. 1, 2016.

K. Ogino, S. Suzuki<sup>1</sup>, and M. Asada, “Frequency Stabilization of Resonant-Tunneling-Diode Terahertz Oscillator using Phase Locked Loop Circuit”, Russia-Japan-USA-Europe Symposium on Fundamental and Applied Problems of Terahertz Devices and Technologies (RJUSE 2016), P-12, Sendai, Nov. 1, 2016.

M. Asada and S. Suzuki, “Resonant-Tunneling-Diode Terahertz Oscillators and Applications” (Invited), International Electron Devices Meeting (IEDM 2016), 29.3 San Francisco, Dec.7, 2016.

T. Maekawa, H. Kanaya, S. Suzuki, and M. Asada, “Frequency Increase in Resonant-

Tunneling-Diode Terahertz Oscillator by Reduction in Conduction Loss with Thick Antenna Electrode”, Indium Phosphide and Related Materials (CSW-IPRM), WeD1-4, Toyama, June 29, 2016.

N. Oshima, K. Hashimoto, D. Horikawa, S. Suzuki, and M. Asada, “Wireless Data Transmission of 30 Gbps at a 500-GHz Range Using Resonant-Tunneling-Diode Terahertz Oscillator”, International Microwave Symposium (IMS2016), TIF2-2, San Francisco, May 26, 2016.

M. Asada and S. Suzuki, “Room-Temperature Resonant-Tunneling-Diode THz Oscillators and Their Functions for Various Applications” (invited), EMN on Terahertz, B-01, San Sebastian, May 15, 2016.

M. Asada and S. Suzuki, “Terahertz Oscillators Using Resonant Tunneling Diodes and Their Functions for Various Applications” (Invited), SPIE Terahertz physics, Devices, and Systems, 9856-20, Baltimore, April 18, 2016.