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Editorial Introduction to the Special Issue: THz Summer 2019 in Russia

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We present the second special issue of the *Journal of Infrared, Millimeter, and Terahertz Waves* "THz summer 2019 in Russia." It is a collection of articles, whose authors participated in various conferences held in Russia.

In 2011 the first special issue of *Journal of Infrared, Millimeter, and Terahertz Waves* "THz summer 2010 in Russia" was released (volume 32, issue 10, October 2011). It included articles based on the talks made at Russian THz conferences held in the previous year. Since then these publications have demonstrated high citation history. In 2018–2019, there were a number of high level conferences devoted to THz field of science and technology held in Russia. That is why we decided to revive this tradition. The present special issue consists of 11 articles embracing a wide range of works, typical for Russian laboratories working in the THz field. There are articles on the development of novel THz sources and applications of THz radiation for biology and material science. You will also find works on application of THz radiation in high-resolution spectroscopy and other topics presenting interest to members of the THz community.

Please see the full list of articles below:

1. Vladimir Vaks et al. Application of THz fast frequency sweep spectrometer for investigation of chemical composition of blood
2. Olga Kosareva et al. Tracing air-breakdown plasma characteristics from single-color filament terahertz spectra

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3. Vladimir Manuilov et al. Universal electron gun design for a CW third harmonic gyrotron with an operation frequency over 1 THz
4. Olga Smolyanskaya et al. Pulse terahertz holographic reconstruction of optical parameters for blood plasma pellets
5. Olga Cherkasova et al. THz spectroscopy of bound water in glucose: direct measurements from crystalline to dissolved state
6. Irina Zotova et al. Theoretical and Experimental Investigations of Terahertz-Range Gyrotrons with Frequency and Spectrum Control
7. Jean-Louis Coutaz et al. Sub-wavelength THz imaging of the domains in periodically-poled crystals through optical rectification
8. Maxim Nazarov et al. Enhancement of THz generation by two-color TW laser pulses in a low-pressure gas
9. Igor Y Denisyuk et al. Optical properties of photobleached DAST molecular crystals in terahertz domain
10. Yury KIstenev et al. Paraffin-embedded prostate cancer tissue grading using THz spectroscopy and machine learning
11. Makhail Fadeev et al. Terahertz emission from HgCdTe QWs under long-wavelength optical pumping