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Introduction

With the mutually integration of IRMMW-THz technologies and applications, they have been mutually promoted and developed rapidly. Terahertz science and technology is not only due to it has not been fully explored, but due to its promising applications in spectroscopy, imaging, communications and nondestructive testing and so on. The tremendous demand has dramatically accelerated the research and development on the smaller terahertz emitter with high-power, the uncooled terahertz detector with high sensitivity, the portable and robust devices and systems with high speed. In recent years, many reliable new signal sources, detectors, functional devices and systems continue to emerge. Terahertz technology already plays a crucial role in aerospace, biological medicine, safety inspection, nondestructive testing, cultural relic's protection and next generation wireless communication.

At the same time, the research and development of small power terahertz radiation source, high sensitivity uncooled THz detector, a portable high speed portable equipment and system is still the key bottlenecks in technology. We are glad to see this subject attracting an increasing amount of attention and interests. Joint effort has been made by academia and industry combined to promote both terahertz science and technology development.

In this regard, IRMMW-THz Technologies and Applications of OIT2021 was organized. The conference accepted over 35 papers from different countries and areas of the world, which are focused on the novel device, system and application of IRMMW-THz science and technology, and crossed many research disciplines including plasma, metamaterials, testing and calibration, sensors, imaging and biomedical technology.

We also invited renowned scholars to present their cutting-edge, covering fundamental science such as, "Joint terahertz (THz) communications and sensing: future applications and key technology", and "Graphene based terahertz sensing scheme for cancer biomarker measurement in liquid environment".

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