INFRARED PHYSICS & TECHNOLOGY
An International Research Journal

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DESCRIPTION

The Journal covers the entire field of infrared physics and technology: theory, experiment, application, devices and instrumentation. Infrared' is defined as covering the near, mid and far infrared (terahertz) regions from 0.75um (750nm) to 1mm (300GHz.) Submissions in the 300GHz to 100GHz region may be accepted at the editors discretion if their content is relevant to shorter wavelengths. Submissions must be primarily concerned with and directly relevant to this spectral region.

Its core topics can be summarized as the generation, propagation and detection, of infrared radiation; the associated optics, materials and devices; and its use in all fields of science, industry, engineering and medicine.

Infrared techniques occur in many different fields, notably spectroscopy and interferometry; material characterization and processing; atmospheric physics, astronomy and space research. Scientific aspects include lasers, quantum optics, quantum electronics, image processing and semiconductor physics. Some important applications are medical diagnostics and treatment, industrial inspection and environmental monitoring.

A fuller though not exhaustive list of topics would include:
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- Atmospheric transmission, turbulence and scattering
- Biomedical and Medical applications
- Cultural heritage
- Environmental applications: pollution and monitoring
- Detectors: quantum and thermal
- Image processing
- Industrial applications
- Infrared lasers including free electron lasers
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- Nondestructive testing, active and passive.
- Optical elements: lenses, polarizers, filters, mirrors, fibres, etc.
- Radiometry: techniques, calibration, standards and instrumentation.
- Remote sensing and range-finding
- Solid-state physics
- Thermal imaging: device design, testing and applications
- Synchrotron radiation in the infrared
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The Journal does include within its scope genuinely new applications of established infrared methods. In the field of medical applications such as the detection of breast cancer or diabetic pathology, submissions to IRPT should normally include advances in hardware or data collection protocols etc. Such studies are required to have adequate sized and well characterized cohorts. Clinical studies using standard equipment are generally not within the scope of the Journal. Similarly in the fields of hyperspectral imaging and near infrared (NIR) spectroscopy application of standard hardware and signal processing methods to a different agricultural product etc does not normally fall within our scope, whereas novel hardware or signal processing does.

The Journal only publishes papers which are purely based on computer modelling without support from experimental results in exceptional circumstances when there is a clear reason to do so. These might, for example, include comparative studies of designs for large pieces of equipment such as satellites, FELs etc. Papers on advances in modelling techniques, appropriately validated, are welcome.

AUDIENCE

Those involved in the theory, techniques and instrumentation of infrared physics and engineering.

IMPACT FACTOR

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