Press Release

InfraTec GmbH Infrarotsensorik und Messtechnik

Dresden, 2024-06-11

DLaTGS - The Next Detector Generation

High-performance for Spectroscopy with the PYRONEER Detectors from InfraTec

Pyroelectric detectors for analytical devices have been part of the InfraTec portfolio for over 20 years. Until today, these were based exclusively on high-quality, single-crystalline lithium tantalate ($LiTaO_3$). Now InfraTec delivers the performance boost for FTIR spectroscopy and enhances the detector portfolio with the high-performance, pyroelectrically sensitive material DLaTGS (deuterated L-alanine doped triglycine sulphate).

DLaTGS – The Gold Standard for FTIR Spectroscopy

The combination of high pyroelectric coefficient, low heat capacity and low relative permittivity meets all requirements for achieving very good signal-to-noise ratios at very high modulation frequencies. Thus, the DLaTGS detectors of the PYRONEER series offer triple detectivity (D*), making them clearly superior to $LiTaO_3$ detectors at modulation frequencies in the kHz range. They are real performance boosters and are considered the gold standard among infrared detectors in Fourier transform infrared spectrometers (FTIR). In combination with the particularly thin black precious metal layer, they are unmatched in terms of performance and offer a uniformly high detector sensitivity across the entire spectral range.

InfraTec Launches the PYRONEER Series

The high-performance detector DSV-7311 will be the first detector based on DLaTGS and the forerunner of the new “PYRONEER” product series. The single channel detector in the TO39 housing features a pyroelectric element with a diameter of 1.3 mm and a low-noise junction field effect transistor (JFET). Also, it is operated in voltage mode. Offering a specific detectivity (D*) of 3.3×10^8 Jones at 1 kHz, a fast and reliable thermal time constant and a 110° field of view (FOV), the specifications of the DSV-7311 are exceptionally good for a detector of this size.

One-stop Solution

The production process for DLaTGS detectors starts with growing the sensitive DLaTGS crystal material at the company's headquarters in Dresden. All subsequent steps such as sawing the wafers from the crystal material, thinning, applying the contact electrodes and vapor deposition of the metal black layer are also in-house processes. Thanks to its modular design, the Pyroneer series can be flexibly adapted to your application-specific requirements.

Information: 2,382 characters (incl. spaces)

About InfraTec

The InfraTec infrared sensor and measurement technology company was founded in 1991 and has its headquarters in Dresden, Germany. The privately held company employs more than 240 employees and has its own design, manufacturing and distribution capabilities.

The infrared sensor division produces custom-made components – especially pyroelectrical infrared detectors – for clients worldwide. The product range includes analogue single and multi-channel detectors as well as digital multi-channel detectors (PyrIQ). The detectors are used, for example, in gas analysis, fire and flame sensors and spectroscopy.

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With its infrared measurement business unit, InfraTec is one of the leading suppliers of commercial thermal imaging technology. In addition to the high-end camera series ImageIR® and the VarioCAM® High Definition series, InfraTec offers turnkey thermographic automation solutions e. g. for industry processes, non-destructive testing and fire detection and prevention.

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