

Low cost antimonide-based detectors for mid infrared sensing

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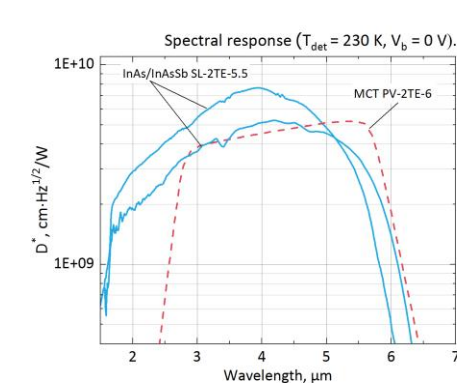
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Every object with a temperature above absolute zero emits infrared radiation. The waves that are produced can be read and processed by special devices designed for this purpose - infrared radiation detectors are their most important component. They can be used in many fields and industries such as military, industrial, environmental protection, medical and consumer electronics.

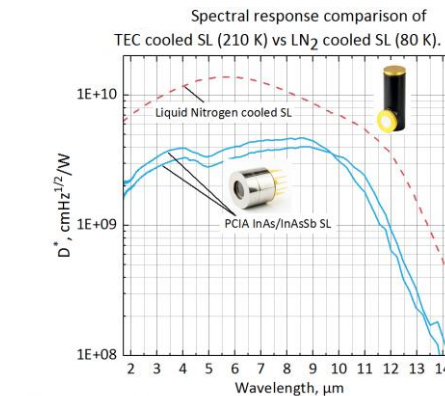
Megatrends related to modern society development such as internet-of-things, wearable electronics with lab-on-chip possibilities, need for eco-friendly components and lack of semiconductor chips are driving the development of modern mid-infrared components for 2-16 μm range to provide possibility to sense gases, liquids, solid and body vital signs.

VIGO System's vertically integrated manufacturing facility for growing, processing and packaging II-VI and III-V compounds is located in Ożarów Mazowiecki city, in a suburb of Warsaw, Poland. Ability to grow on both MOCVD and MBE systems and fully equipped optimized cleanrooms brings capabilities to complete value chain for both detectors and sources.

Recent results on antimonide-based detectors bring new flexible technology - more easy matching of detector heterostructures to the buffered GaAs substrates, flexible fabrication of devices optimized to required spectra range and temperature of operation and potentially better performance of the devices compared to state-of-the-art MCT detectors. We show the latest results for both 5 μm and above 11 μm . That opens the path for further development of ROHS compliant solutions for low cost consumer electronics as discrete components or photonic integrated circuits in near future.



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