Standard Products and New Developments

Good Quality?

InGaAs Image Sensor Hybrids for Industrial Applications

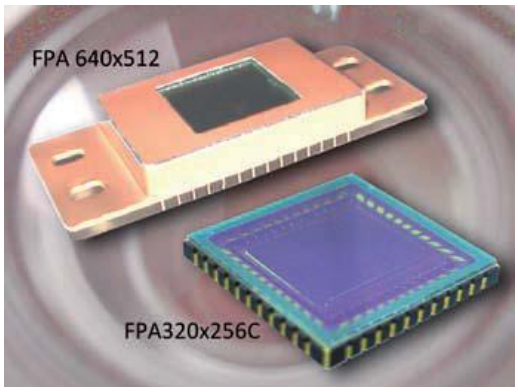
Impressions from Thuringia/Germany – taken with an InGaAs-camera
(Source: ABS GmbH, Jena)

Standard Products and New Developments

The standard InGaAs matrix arrays feature a 320 x 256 and a 640 x 512 pixel resolution for the spectral range of 900 nm to 1,700 nm. If the device is thermoelectrically cooled, it comes in a hermetic 28-pin Kovar package with one-stage thermoelectric cooler and sapphire window. For the lower resolution matrix with 320 x 256-pixels there is also an uncooled version available using a hermetic 44-pin ceramics package with sapphire window. The uncooled version forms a good entry into InGaAs-techniques for the starting user. It can be operated at ambient temperature; the device is compact and easy to integrate. The low power consumption and low mass also make it suitable for portable inspection and night vision applications.

Extension of the Spectral Range

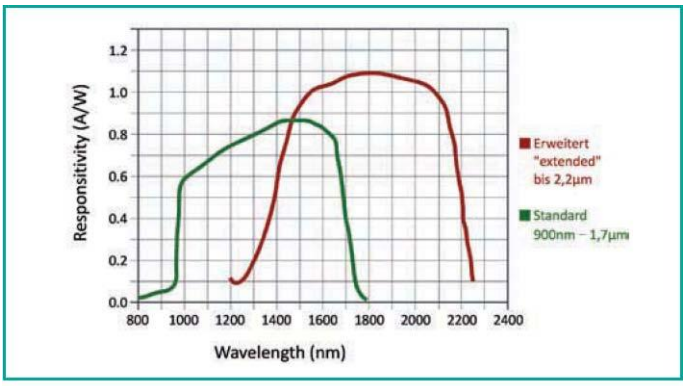
The spectrally extended sensors for the wavelength range of 1,200 nm to 2,200 nm are, for reliable infrared operation, exclusively delivered in 28-pin Kovar package with one-stage thermoelectric cooling.



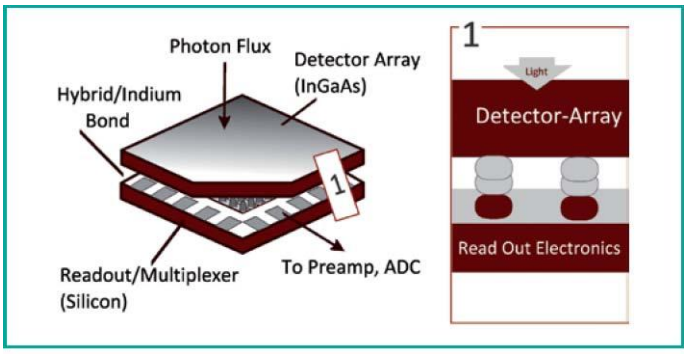
Extending the spectral sensitivity into the visible part of the spectrum (VisGaAs), below the wavelength of 900 nm, is part of a developmental program currently ongoing. Developing even higher resolution standard devices, e.g. with 1,024 x 1,024 elements, is considered as well. Technologically such a sensor would be feasible

already today, but the higher sensor price might not be attractive enough for the industrial user.

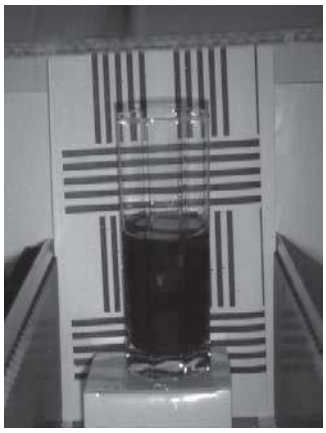
The Andanta InGaAs matrix arrays feature a very good price performance ratio. Therefore they are attractive for camera manufacturers as well as for manufacturers of spectrometers, analytic measurement devices and other scientific optoelectronic systems for industrial inspection. The system developer will get extensive help when designing-in the image sensors. The sensors are also long-term available and not threatened easily by obsolescence.



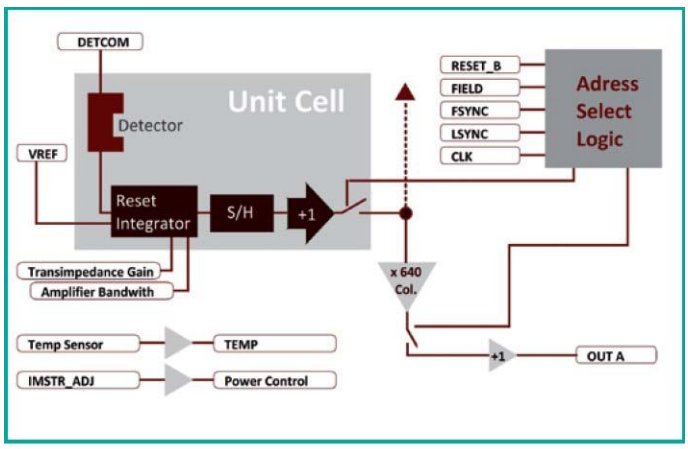
InGaAs-Spectral Response Curve, Standard (900–1,700 nm) and Extended (1,200–2,200 nm)



InGaAs Hybrid – simplified diagram



Water Absorption
at Wavelength 1,300 nm
(lab image)
(Source: ABS GmbH, Jena)



Integrated CMOS electronics – block diagram for preset Default-mode

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