

EURIPIDES Forum 2010

in Paris September 30th – October 1st

Expression of Interest:

High-end products based on electrically tunable miniaturized spectrometers for visible light

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VTT has developed a new technology for electrically tunable miniaturized spectrometers

The technology can be applied to a large number of applications in various business sectors

The technology enables accurate colour analysis and hyperspectral imaging using a tiny spectrometer operating at a low power

VTT is looking for partners to industrialize the technology in various business segments

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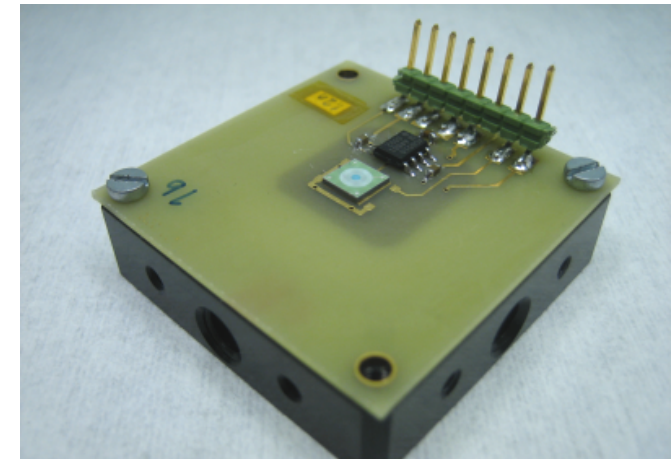
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Monolithically Integrated Spectrometer

1. First spectral response measurements performed using monochromatic light
2. The air cavity seems to change as a function of the actuation voltage
3. The operation range is in the range of 420nm – 550 nm.

Test chip



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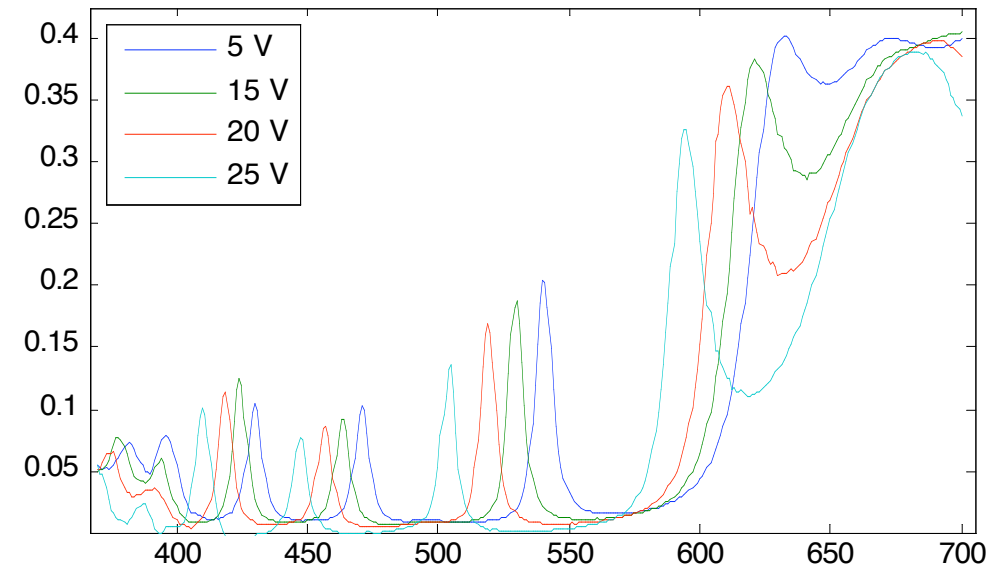
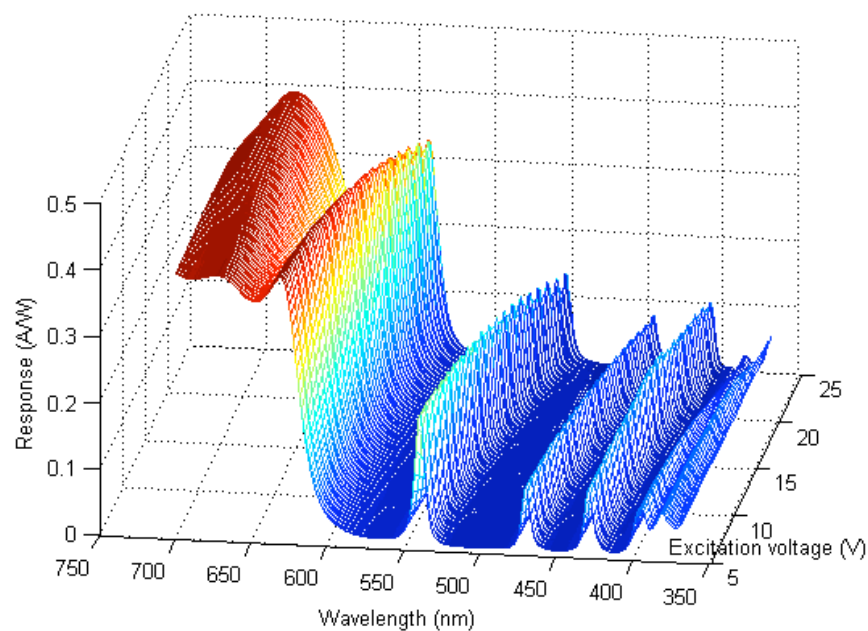
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Measured spectral response

Spectral response can be tuned by applying a tuning voltage.

Illumination bandwidth 2 nm (FWHM). Diameter of optical aperture 1 mm.



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Application examples

1. Colour measurement
 - Lighting, paints, food industry, restauration, ..
 2. Gas measurements
 3. Environmental monitoring
 - Hyperspectral imaging to monitor growth of crop
 - Remote monitoring using unmanned aerial vehicles
 4. Health and wellbeing
 - Diagnostic devices
 - Hyperspectral imaging in non-invasive measurements
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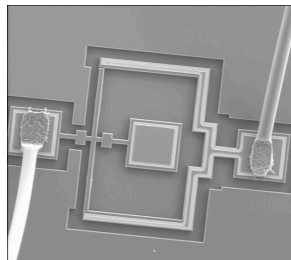
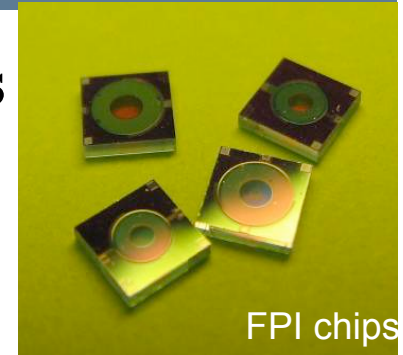
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VTT Memsfab Oy: Contract manufacturing services

- A company to be founded within VTT Group by 01/01/2011
- Present VTT MEMS production is transferred to the company
- Supporting commercialization of R&D results
- Supporting customers with moderate production volumes needs, e.g., less than 100.000 to millions of chips per year
- Technology transfer to high-volume production companies



Manufacturing in
VTT Memsfab Oy



High-volume
foundry

Product idea