

# **EURIPIDES Forum 2010**

## **in Paris** September 30<sup>th</sup> – October 1<sup>st</sup>

### **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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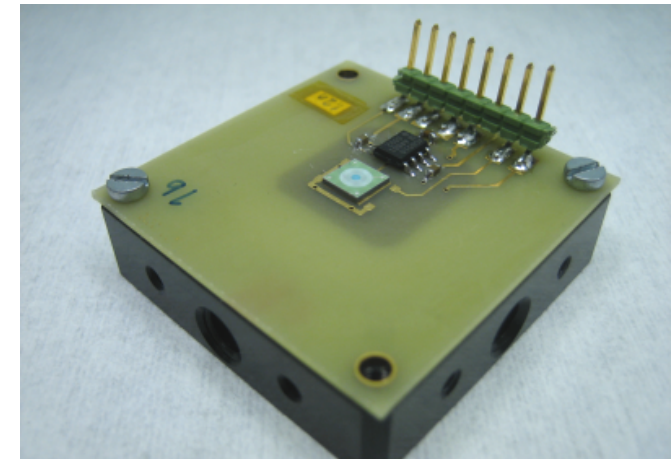
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## Monolithically Integrated Spectrometer

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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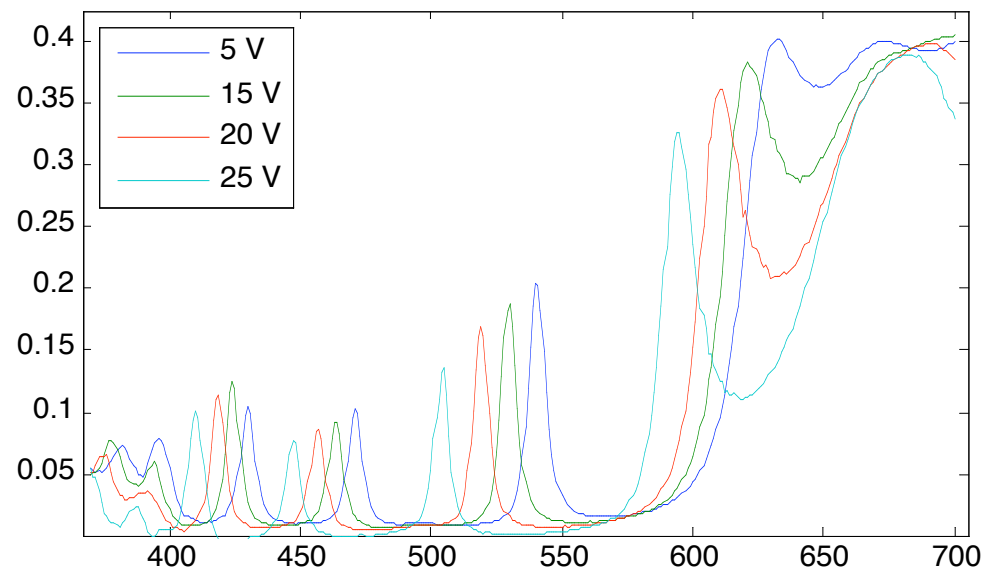
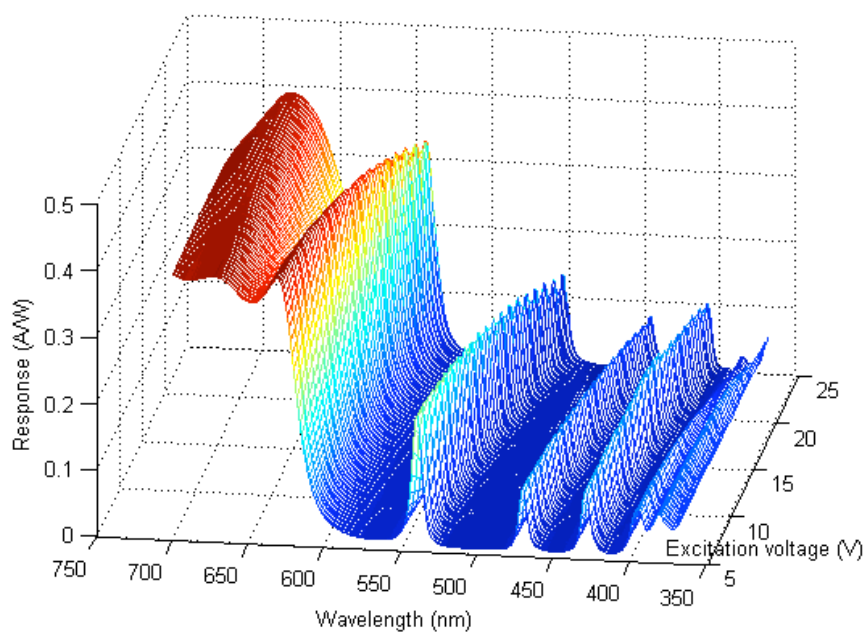
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## Measured spectral response

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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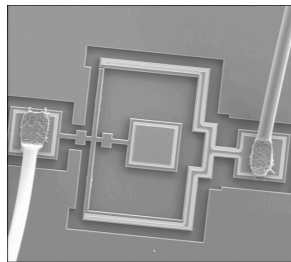
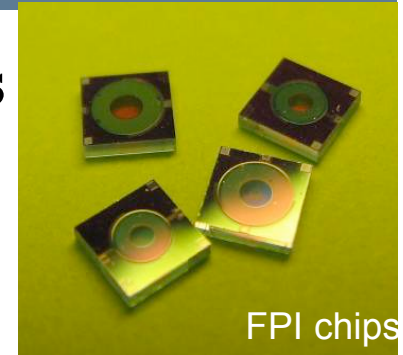
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### VTT Memsfab Oy: Contract manufacturing services

- 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