

**VTT**

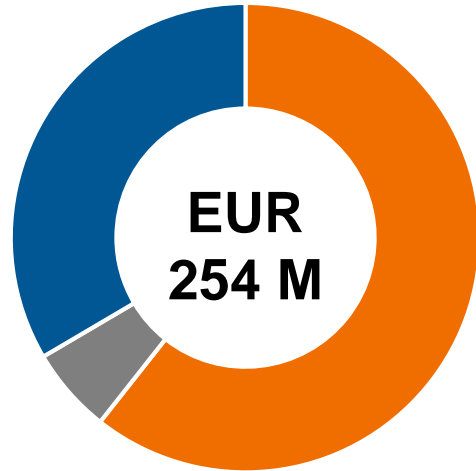
# **VTT** Photonics

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**Research Manager – Sensing Solutions**

**EPIC AGM**  
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04/04/2023 VTT – beyond the obvious

# VTT today

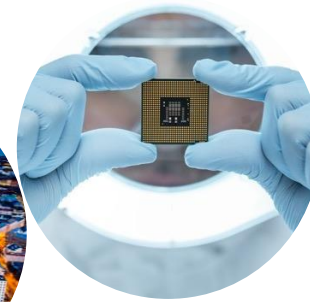


**154.2 M€** net turnover  
**14.4 M€** other operating income  
**85.1 M€** government grant



**Carbon neutral  
solutions**

**2,093**  
employees



**Digital  
technologies**

**530**  
scientific  
articles



**Sustainable products  
and materials**

**~ 430**  
patent families

**45%**  
of net turnover  
from abroad

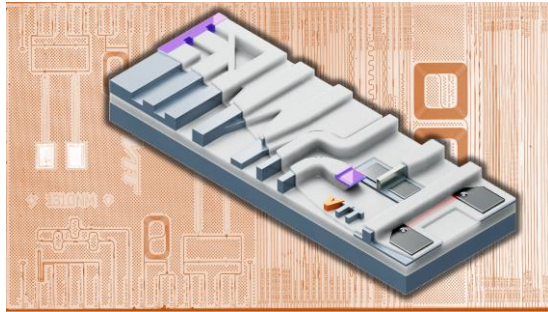
## VTT

is under the state ownership steering of the Ministry  
of Economic Affairs and Employment of Finland

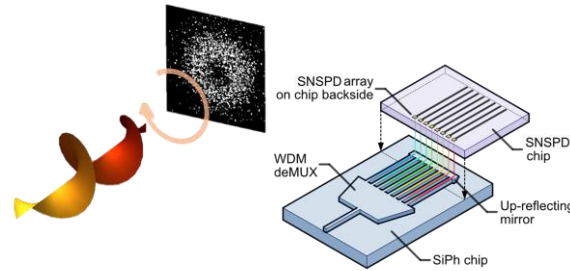
# VTT Photonics components

Around 400 employees work in photonics related research topics

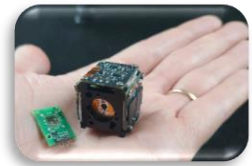
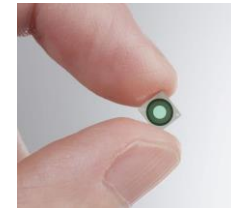
## Silicon photonics



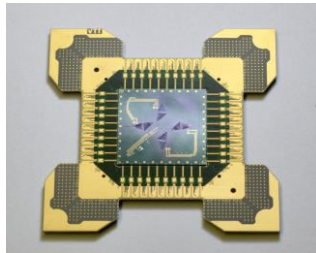
## Quantum photonics



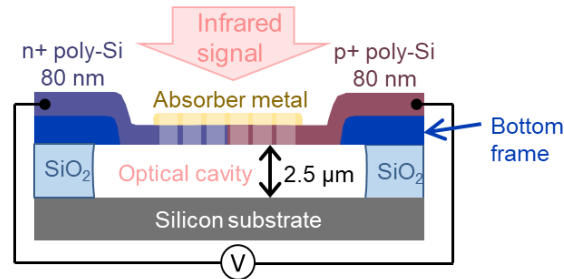
## Miniaturized hyperspectral cameras



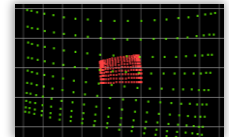
## Optical communication



## Bolometers

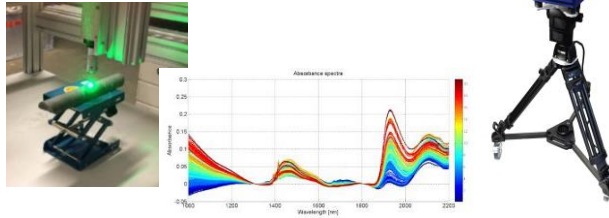


## 2-field LIDAR scanner

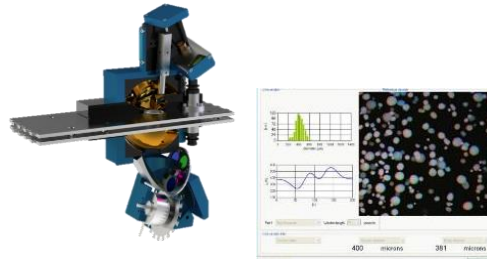


# VTT Photonics instruments

## Optical instruments & spectroscopy



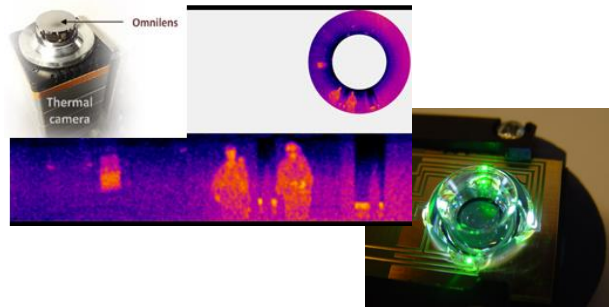
## Industrial sensors machine vision



## Handheld instruments - NIR analyzer



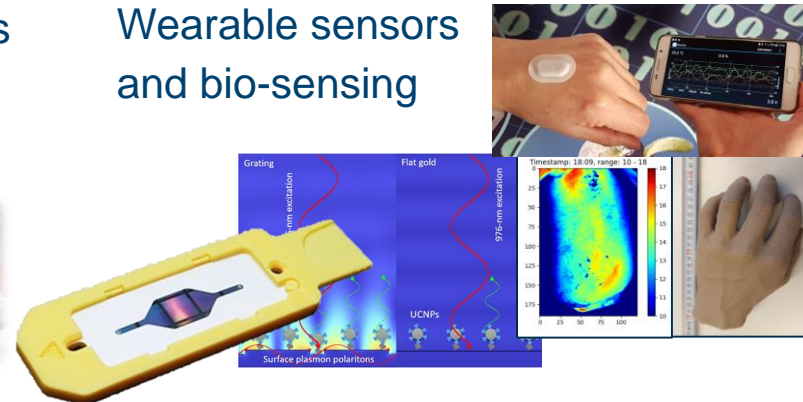
## Optics design and simulation - 360 degree Omnilens imaging



## Large-area photonics



## Wearable sensors and bio-sensing

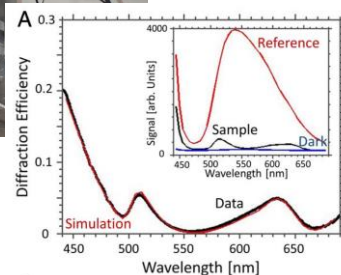
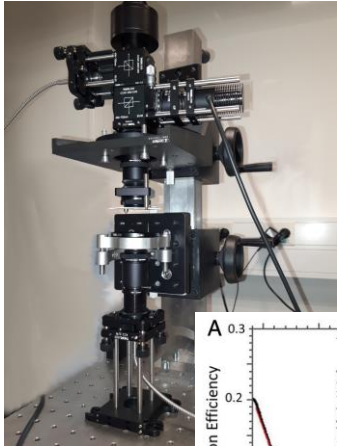


# VTT Optical design and measurements

## Measurements traceable to SI-units

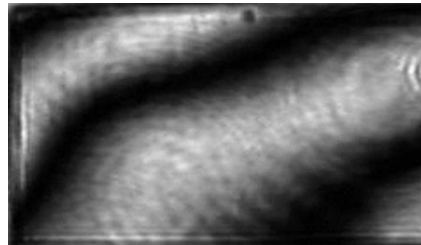
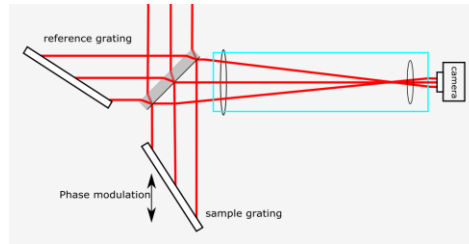
### Spectral scatterometry

pixelwise phase map for period and rotation variation



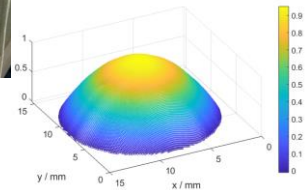
### Phase stepping interferometry

accurate imaging of grating homogeneity



### Multi-sensor optical profilometer

freeforms form & thickness measurements



# bey<sup>0</sup>nd

## the obvious

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