

# EMBERION

Broaden your Vision



# Welcome to Snowy Finland



*Snow duck at 400 - 690 nm visible wavelengths*



*Snow duck at 1485 - 1645 nm SWIR wavelengths*

# Emberion

Emberion produces visible-to-eSWIR cameras and image sensors and offer imaging solutions at affordable cost



Two sites:

**Cambridge, UK:** photosensitive layer manufacturing

**Espoo, Finland:** ROIC, electronics and SW design;  
camera assembly, testing and calibration



Established  
in 2016  
(spin-out from Nokia)



36 employees



2 locations  
(Finland & UK)



**GRAPHENE  
FLAGSHIP**

Member of the  
EU FET Graphene  
Flagship Project

# High Dynamic Range, over 120 dB

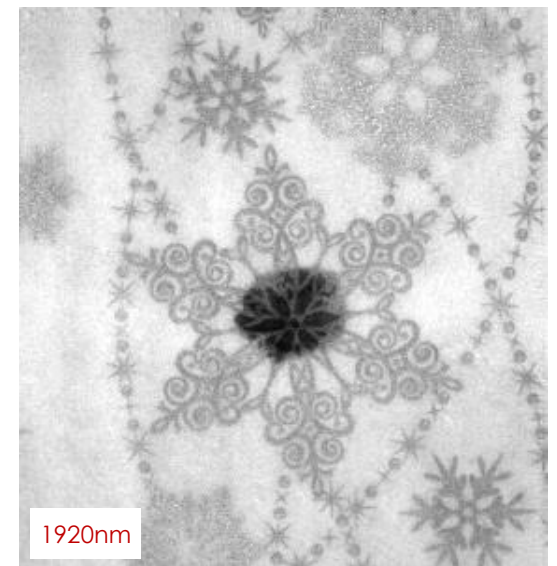
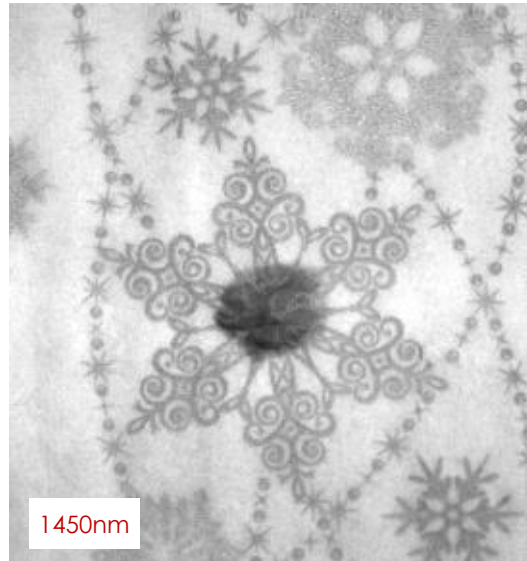
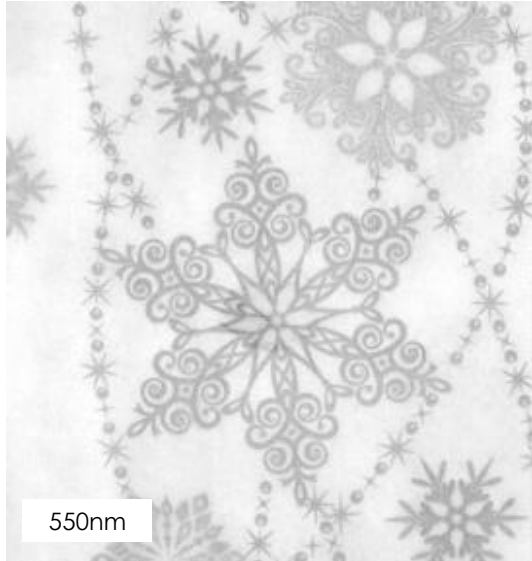


Image taken by InGaAs camera on a cloudy day. There are some prominent dissimilarities in the contrast differences, e.g. tree leaves appear much lighter IR than in VIS light.



The non-linear response characteristic and the wider spectral sensitivity range of Emberion cQD sensor offer a wider dynamic range, see the contrast differences in the clouds, balconies and car windows.

# Broad wavelength range, 400 - 2000 nm



Emberion VS20 has been used to detect water at specific wavelengths using narrowband pass filters. Water absorption peak shows highest contrast at 1920nm and decreasing contrast levels at 1450nm and at visible wavelength it is almost transparent. This process enables contrast differentiation and improve on false defect count.

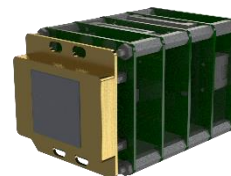
# Versatile Cameras and Camera Cores



Emberion VS20 Camera link  
Up to 86 fps



Emberion VS20 GigE  
Up to 400 fps



Emberion VS20 GigE Camera Core  
Up to 400 fps

Emberion VS20 variants	Sensor readout & control	ADC conversion	Calibration	Image processing	Interface included	Power management	Thermal control	Housing enclosure	Lens mount included
Complete Cameras	✓	✓	✓	✓	✓	✓	✓	✓	✓
Camera core	✓	✓	✓	✓	✓	✓	optional	×	optional

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