



## Detectors and Imaging Sensors

**Technology development in close co-operation with industry and academia through the whole value chain, from materials and components to systems and products.**

We develop advanced components and systems for detection and imaging of electromagnetic radiation, especially at non-visible wavelengths, including readout circuits and packaging. Some examples are:

- Uncooled infrared imaging arrays based on microbolometers (wavelength 8-12  $\mu\text{m}$ ). Silicon based micromachining technology where the active material is silicon-germanium.
- High Performance (cooled) infrared detectors and imaging arrays (wavelength 3-5  $\mu\text{m}$  or 8-12  $\mu\text{m}$ ) based on novel quantum structured materials: strained layer superlattices (T2SL – type II superlattice) or quantum dot (QD) material.
- Sensitive UV detectors based on silicon carbide.
- X-Ray detectors and imaging arrays based on silicon, gallium arsenide or scintillators.
- THz based on silicon based high speed electronics.

We offer R&D (contract research or long-term R&D projects), consulting, product development, prototyping, and small-scale production.

RISE Acreo's subsidiary IRnova is manufacturing high performance (cooled) IR imaging arrays based on technologies such as QWIP (quantum well IR photodetector) or strained layer superlattices (T2SL). They use the Electrum Laboratory, Kista, as their fabrication facility.

Examples of technologies and their application areas:

- Sensitive UV sensors to identify water and air contaminants.
- Thermal infrared technology for surveillance and security. Automotive safety (night vision in cars).
- Nanostructured materials for improved detection capabilities, especially for thermal IR (3-12  $\mu\text{m}$ ).
- X-ray detectors and imaging arrays for medical diagnostics and treatment, as well as for materials and weld testing.

Collaboration with us gives your organization access to specialized expertise, outstanding manufacturing and characterization laboratory facilities and enhanced networking opportunities. Most of the projects utilize our micro/nanoelectronics laboratory, the Electrum Laboratory located in the same building as RISE Acreo's Nanoelectronics Department.

### Contact

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