

# Infrared Photonics



**Łukasiewicz**

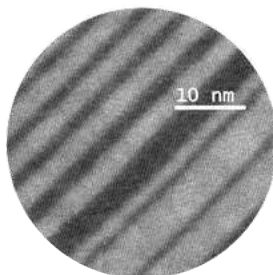
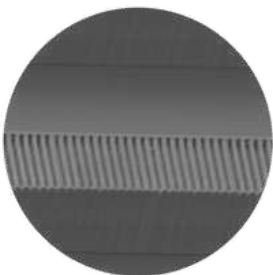
Institute of Microelectronics  
and Photonics

**INFRARED PHOTONICS DEVICES  
QUANTUM CASCADE LASER  
INFRARED DETECTORS  
PHOTONIC INTEGRATION**



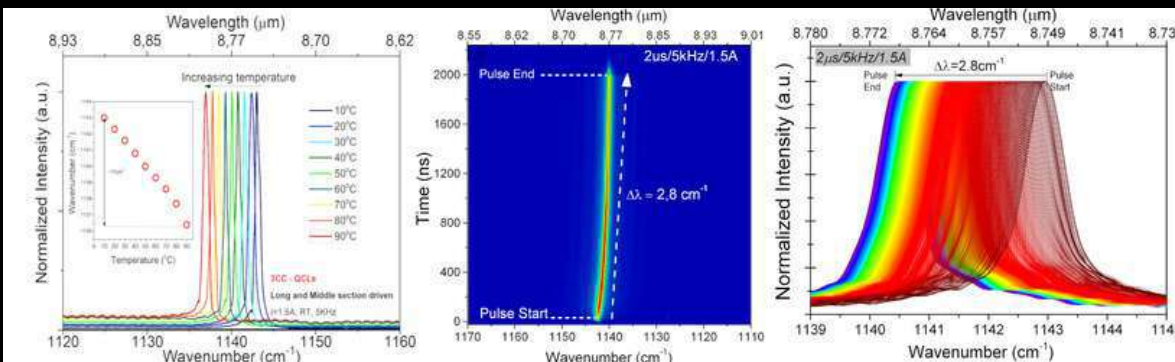
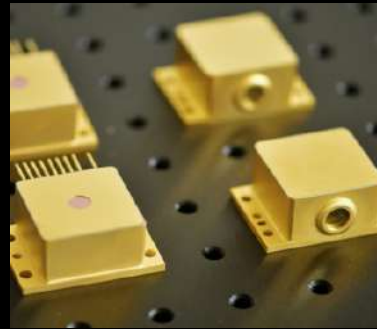
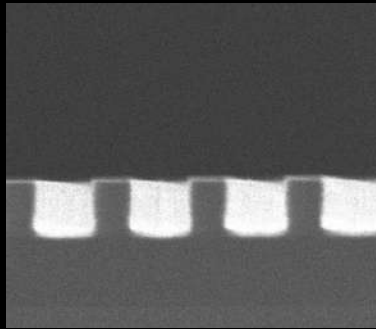
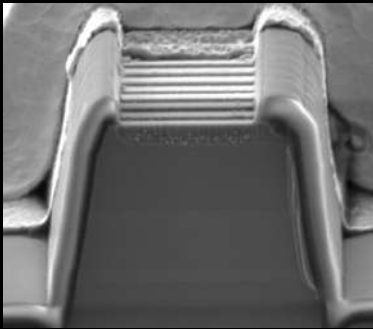
## We offer

- ✓ Molecular Beam Epitaxy (MBE) growth of semiconductor heterostructures (QWs, SLs,  $\mu$ Cavities) in GaAs, InP and GaSb material systems
- ✓ Complete fabrication of photonics devices based on III-V materials:
  - UV or laser photolithography
  - wet or dry etching
  - photolithography mask generation
  - dielectric and metallic layer deposition (PCVD, e-beam)
  - wafer grinding, cutting, scribing,
  - assembly of photonics devices
- ✓ Electrical, optical, spectral and thermal characterization of photonics devices



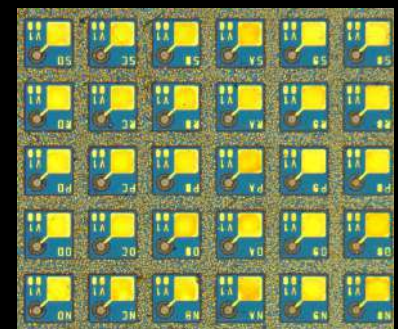
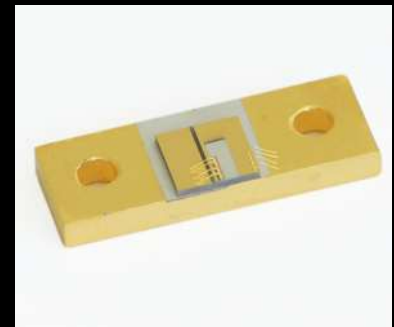
**Grow Up  
Your Business  
With Us**

# Quantum Cascade Lasers and Superlattice Detectors



## Quantum Cascade Lasers

- ✓ Ridge waveguide mid-IR QCLs
  - 4.5 – 12  $\mu\text{m}$  spectral band
  - Fabry-Pérot
  - taper resonators
  - multiemitter designs
- ✓ Single frequency QCLs
  - distributed feedback
  - coupled cavity
- ✓ Chips or mounted lasers
  - epi-up/epi-down
- ✓ HHL assembled lasers



## Superlattice Detectors

- ✓ InAs/GaSb heterostructures



[imif.lukasiewicz.gov.pl](http://imif.lukasiewicz.gov.pl)



[komercjalizacja@imif.lukasiewicz.gov.pl](mailto:komercjalizacja@imif.lukasiewicz.gov.pl)



**Lukasiewicz**

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