

# Advanced patterning for photonic devices, structures and applications

**WE ARE MULTIDISCIPLINARY SKILLED GROUP WORKING ON ADVANCED MICRO- AND NANO PHOTONIC DEVICES AND STRUCTURES FABRICATION**

## OFFER

- Full processing of devices,
- Performing individual steps of technology,
- Prototyping of new concept

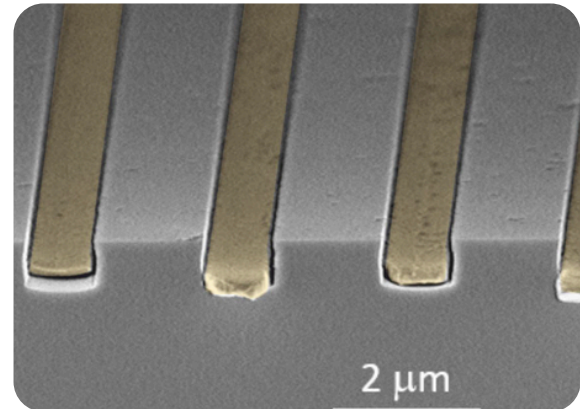
## APPLICATION:

- Light sources: VCSEL, LED
- Photonic structures: gratings, photonic crystals, lenses, CGH, mask for GaN NWs SAGs
- Photomasks, NIL stamps, polymer replicas
- Diffractive optical elements:
  - Single microlens and arrays (spherical, cylindrical, elliptical)
  - Diffraction gratings, fan-out elements
  - Computer generated holograms
  - Apodised diffractive elements

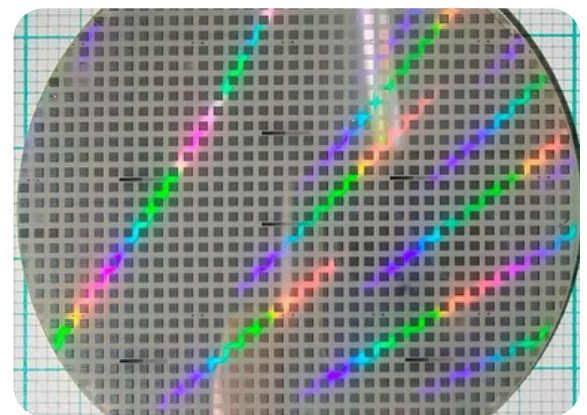


## TECHNIQUES:

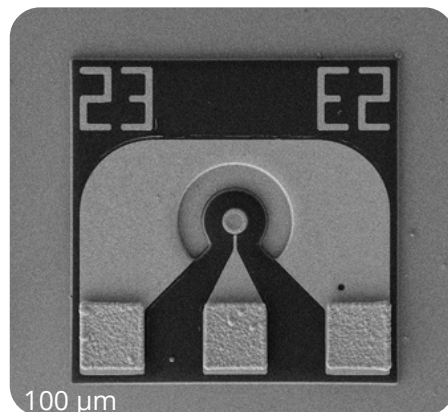
- Photolithography,
- Laser lithography,
- E-beam lithography,
- Nanoimprint,
- Plasma etching,
- PVD,
- PECVD,
- SEM



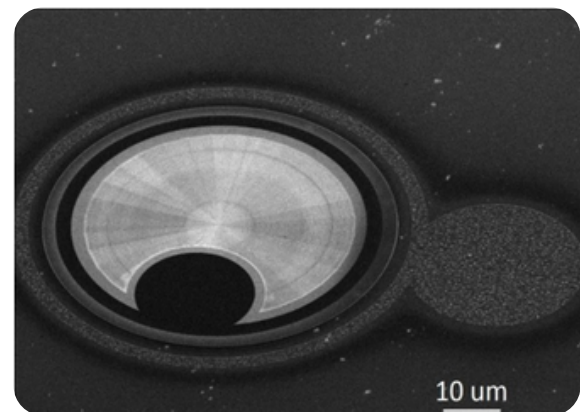
**Transparent electrodes for IR**



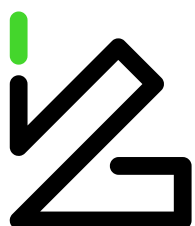
**Lights sources: LEDs**



**VCSEL**



**LEDs**

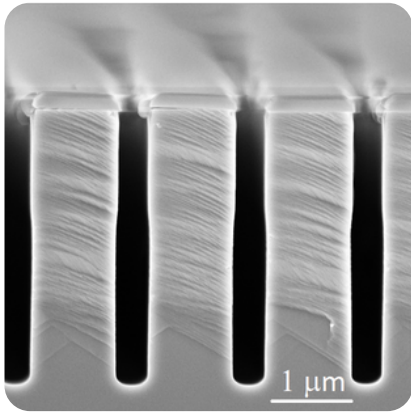


**Łukasiewicz**

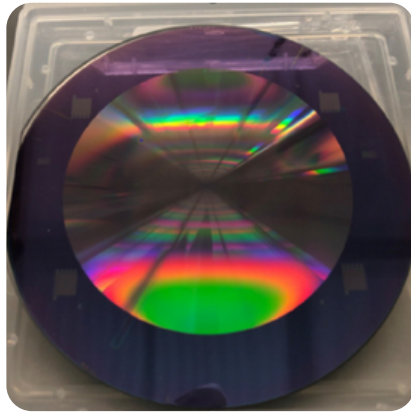
Institute of  
Microelectronics  
and Photonics

GaN technology, sensors, thin-film structures & porous materials

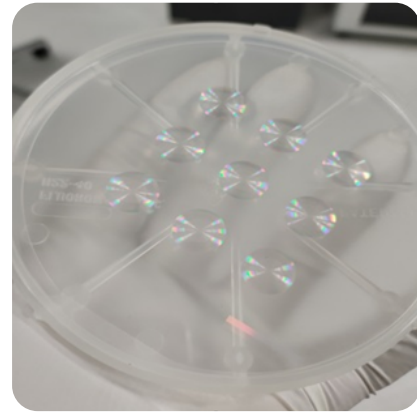
## PHOTONIC STRUCTURES



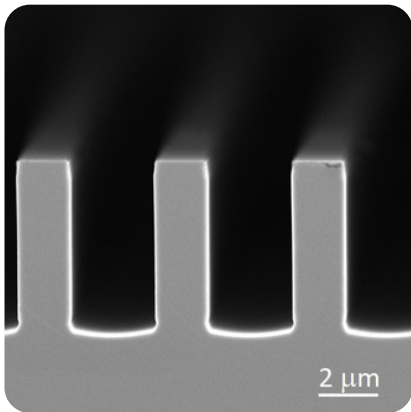
**GaAs**



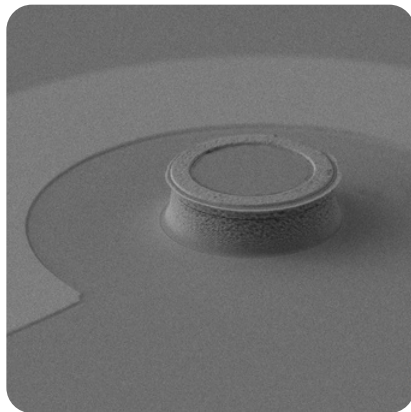
**Lenses**



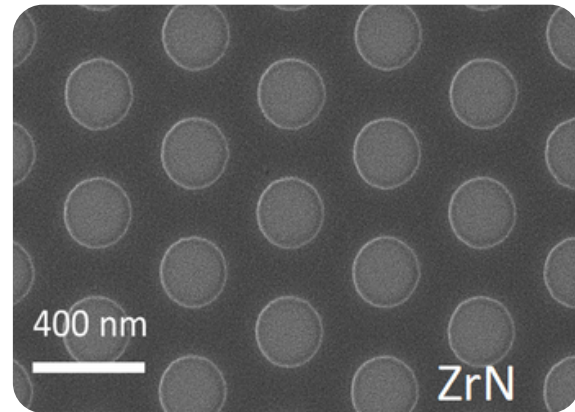
**Lenses**



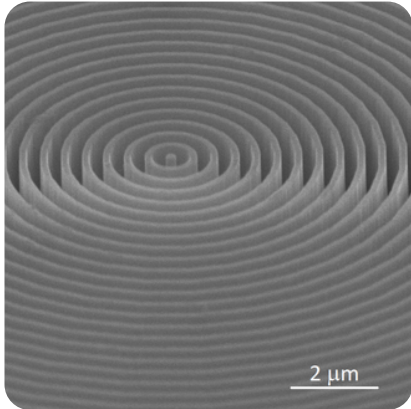
**InP**



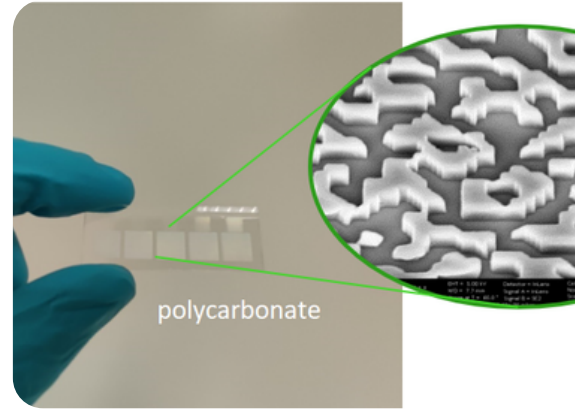
**Lights sources: VCSEL**



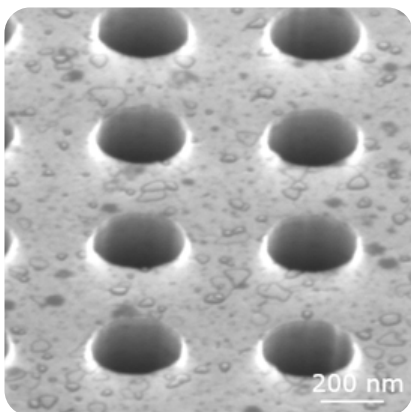
**MASK FOR GaN NWs SAGs**



**GaN**



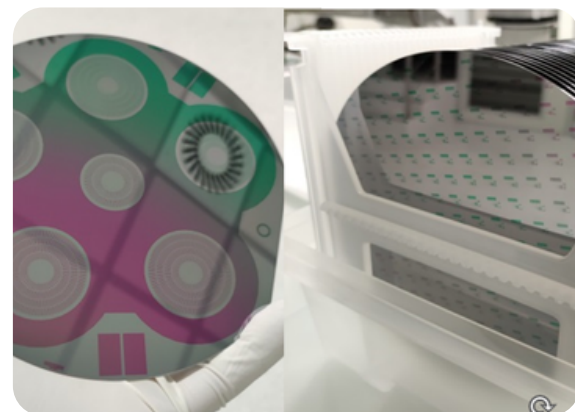
**Computer Generated Hologram**



**GaN**



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



**Fotolithography/e-beam lithography**

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GaN technology, sensors, thin-film  
structures & porous materials