NAVOLCHI

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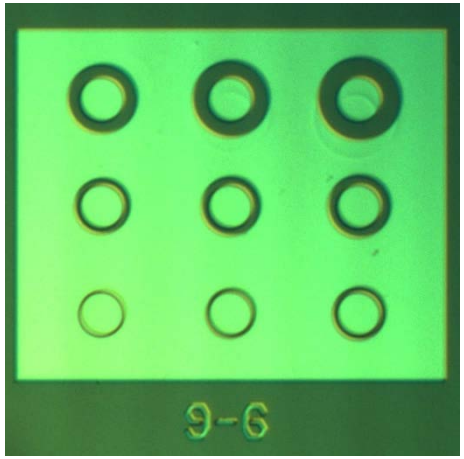
TU/e Technische Universiteit Eindhoven University of Technology

Where innovation starts

Circular TLM to measure contact resistance

- Experiment



- Layer stack

Ag (300 nm)
Ge (2, 15 nm)
InGaAs (100 nm) N>1e19 1/cm3
N-InP

- Results:

Recipe	$\rho_c\ [\Omega\ cm^2]$
Recipe 1	1.3e-7
Recipe 2	**5.9e-8**
Recipe 3	1.8e-7
Recipe 4	4.1e-7

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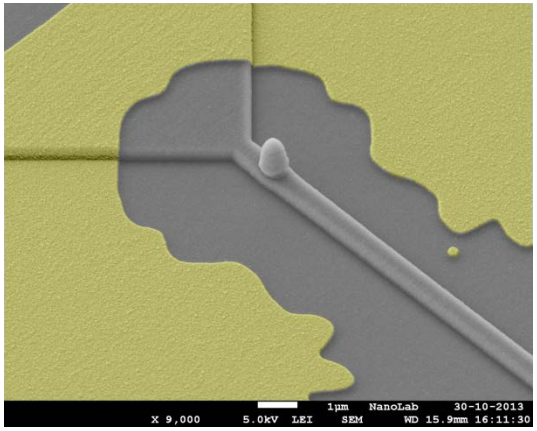
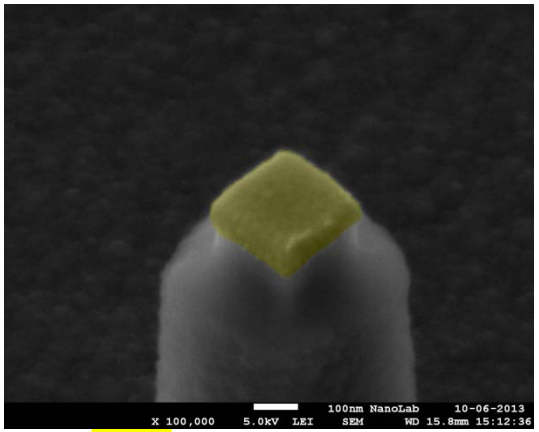
Silver contacts → Simplify fabrication

- No need for adhesion pads



- No need for critical planarization to deposit ohmic contacts

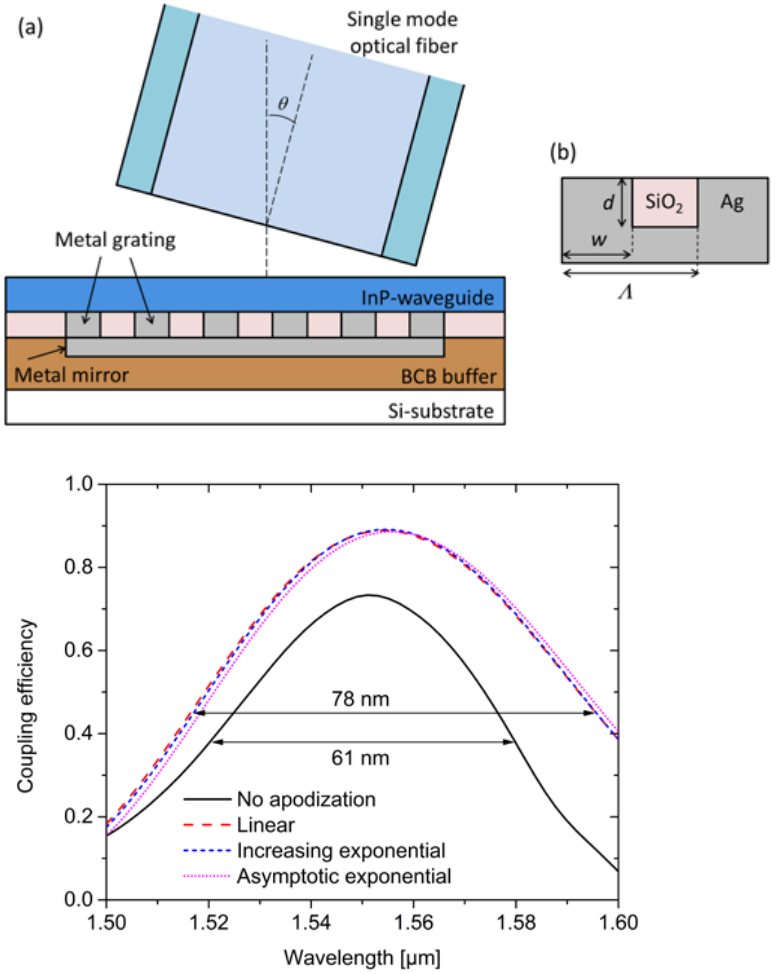


News regarding laser

- I recently got 2 new wafers (last week) for a new run
- Managed to partially solve BCB gassing issue, at the expense of a lower outcoupling efficiency of grating couplers. Real problem remains unsolved.
  - Did UGhent make experiments in this respect?
- Planning etching tests of pillars in bonded (III-V on Si) samples → Planning a new run of lasers

Metal grating coupler

- Advantages
  - High efficiency:
    73% → 89%(apodized)
  - **Independence from buffer thickness**
- US provisional patent application filed



Highly efficient metal grating coupler for membrane-based integrated photonics, V. Dolores Calzadilla, D. Heiss, M. Smit, Optics Letters 39(9), 2014.

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