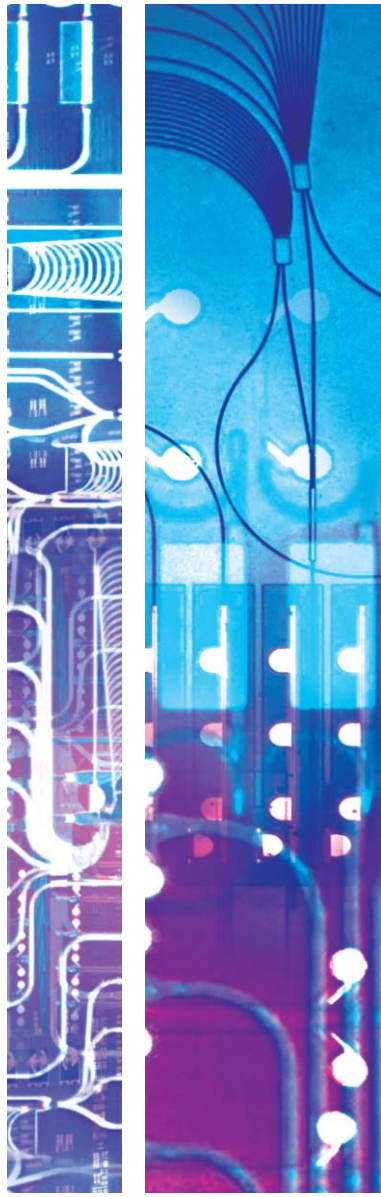
OpenPICs WP3

Agenda

Part I (start 14:00)

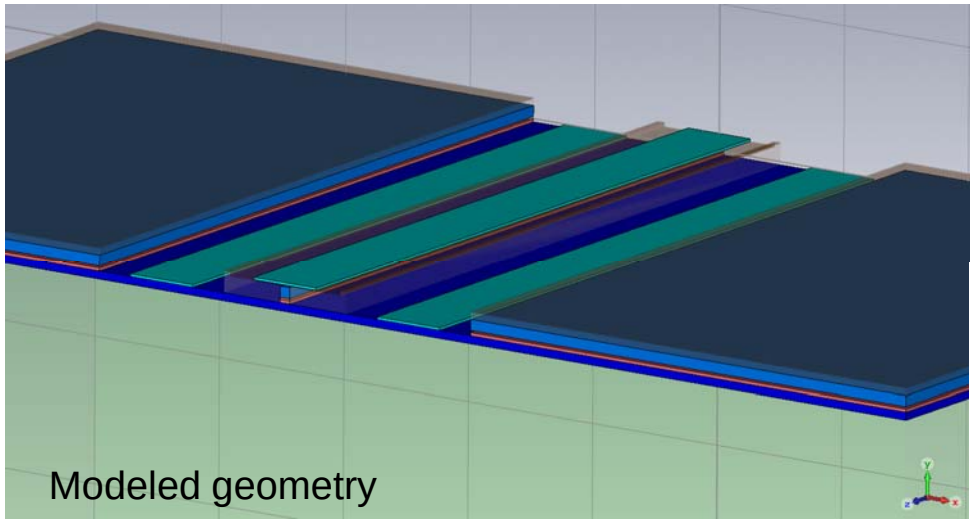
1. **Last meeting's action points**
2. **Progress and issues to be raised per partner**
   a. TU/e
   b. Smart Photonics
   c. Bright Photonics
   d. Effect Photonics
   e. Technobis
3. **Summary: Progress of WP3**

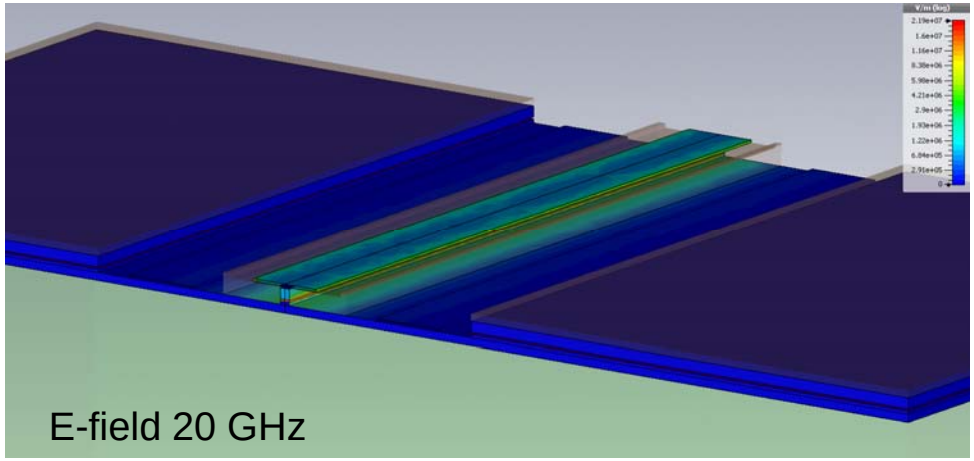


Action Points

Nr.	Description	Responsible
1.	**Modulator Development** Effects MQW stack will be used in SP20 on split batch wafers with active passive integration. TU/e will do design of modulator and requires simplified electrical model information from Effect. Semi-insulating substrate will be used.	Weiming, Saeed
2.	**Al-MQW Development** Al containing MQW material will be grown in WP4. Both Smart and Effect have mask sets for broad area lasers and etch depths tests that are useful here. We need to review those and identify their suitability for this test. Al-MQW design for modulators will follow.	Longfei, Weiming, Rui, Saeed
3.	**RF lines** Recap of RF line concept with simulation data showing 6 µm dielectric thickness is needed to achieve 80 GHz bandwidth on 3 mm length. Two layer metal with BCB as dielectric will be tested in WP4.	Weiming
4.	**Tunable Laser Development** Grating test structures are being designed by Bright for SP20 including SG DBRs. Bright is aligning its designs with TU/e project on gratings as well. Lionix role in openPICs was identified to fabricate Triplex chip and perform hybrid integration.	Ronald
5.	**MPW Schedule and its featues (unchanged from last meeting)** Schedule of MPW runs and the planned features per run is needed. Information on MPW cell area assignment for SP20 in openPICs is requested.	Rui, Roel
6.	**BB Test Cell** We are in the process of revising the BB test cell and exchanging measurement data through a shared repository. A benchmark test structure in form of an AWG will be considered.	Erik/Rui, Weiming

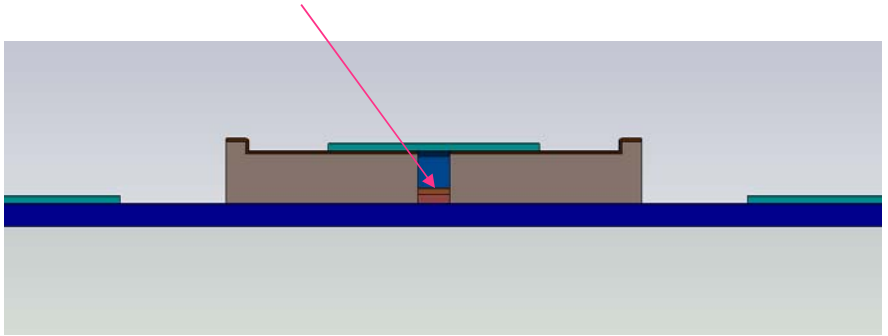
Modulator


Modeled geometry


E-field 20 GHz

Material properties:

- Conductivity/tan Delta
- Dielectric constant
- (surface impedance, drude model etc)



BB Test Cell

- Integrated source detector concept
(pick up as process uniformity control?)

Figure 6 System Source Detector (SSD).

[PARADIGM]

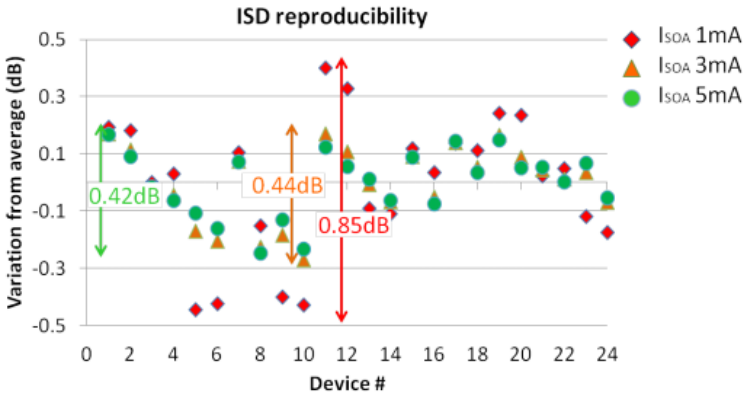
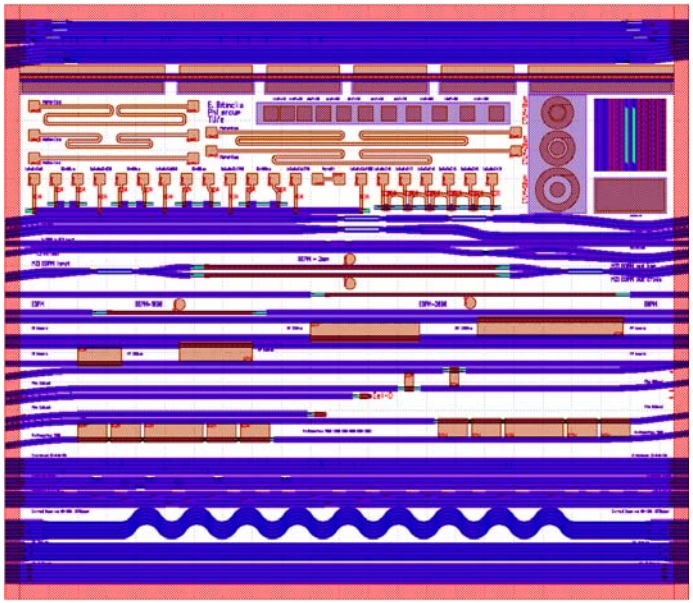
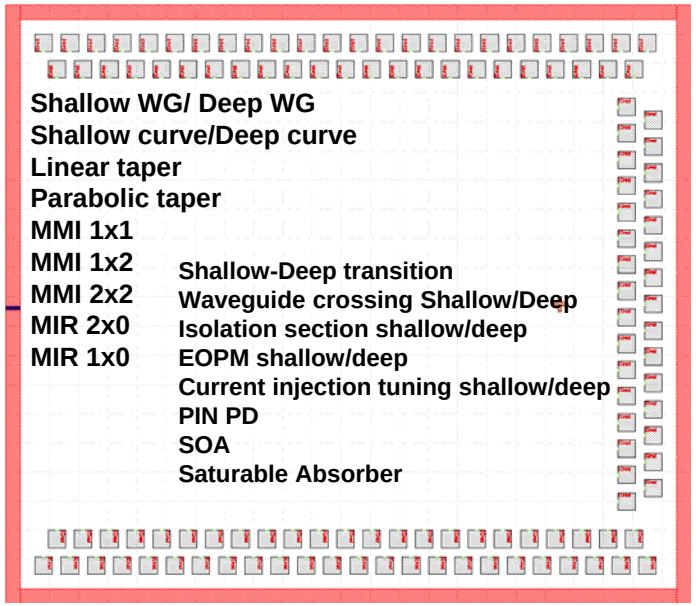


Figure 7 Reproducibility data of the Integrated Source Detector structures.

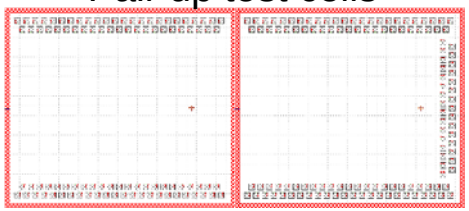
BB Test Cell



Technobis IPPS



Pair up test cells



1. All pads: perform IV curves
2. Go through electrical testing procedures
3. Die testing with optical ports

Misc

- DUV design workflow
- Good test structure design for AWG
  - central wavelength (nm)
  - side-lobe level (dB)
  - polarization dispersion (nm)
  - 3dB and 1dB passband width (nm)
  - Insertion loss (dB)
  - Adjacent channel Xtalk
  - channel spacing (nm)
  - FSR (nm)

Compact
Electrically probed

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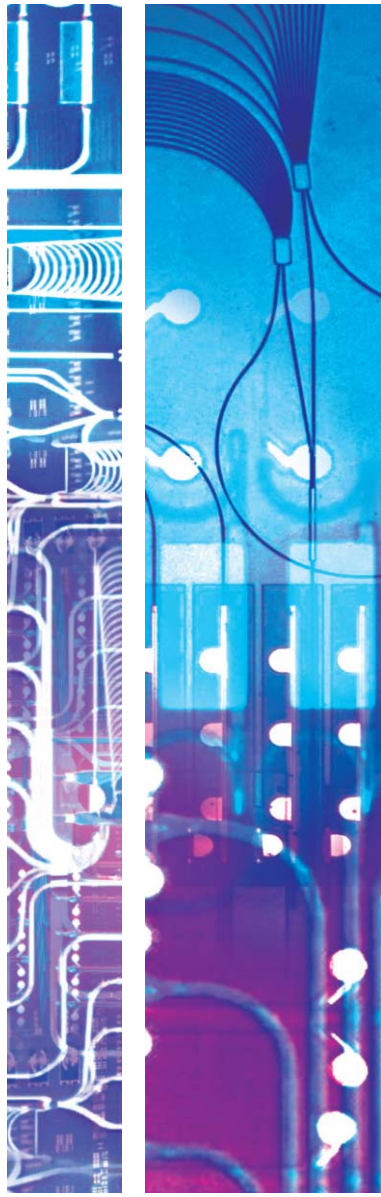
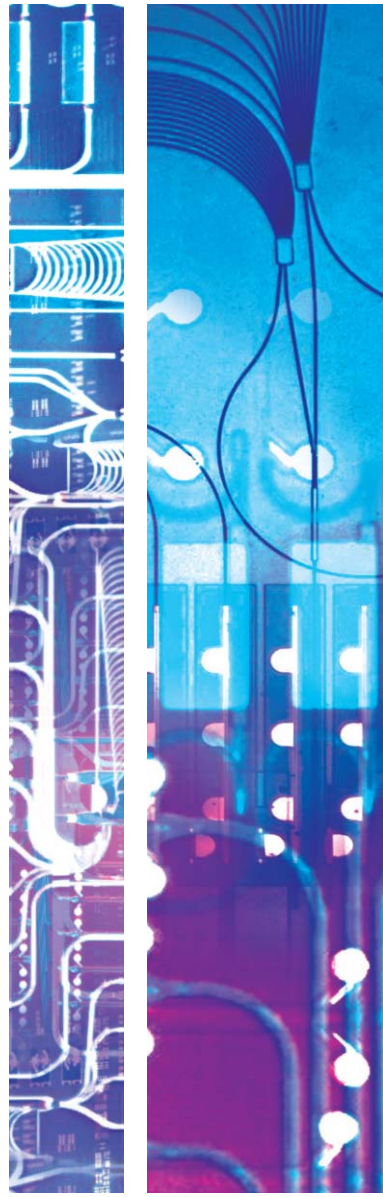


OpenPICs WP3

Agenda

Part II (start 15:00)

1. **Last meeting's action points**
2. **Progress and issues to be raised per partner**
   a. TU/e
   b. (Smart Photonics)
   c. Bright Photonics
   d. Phoenix Software
3. **Summary Progress of WP3**



Action Points

Nr.	Description	Responsible
1.	**Environment for Building Block Entry** Lennard (Phoenix) is starting to create documentation on how to enter building block. First BB to be entered will be IMOS MMI and performed by Amir.	Marcel, Remco
2.	**Documentation of design workflow for Smart, HHI** Formal documentation of the workflow as of now for designing for Smart and HHI foundries is needed, covering from mask generation to BB replacement and final wafer assembly. This documentation can act as basis to improve on existing problems. In addition, a time plan for foundry PDK release and its alignment to MPW tape-out will be drafted. Phoenix will start and circulate drafts to other partners to complete.	Marcel, Remco, others
4.	**Milestones Planning (unchanged from last meeting)** Based on list of existing milestones in WP3.4 Phoenix will draft a more detailed planning involving subtasks and corresponding time frames. That will be first internally discussed in Phoenix and circulated to project partners afterwards.	Marcel, Remco
5.	**Phoenix personnel** Phoenix will send a person to be at TU/e to support software environment tasks.	Marcel, Remco