PhotonHub Demo Centre

Course XX
PIC Product

Course Provider

Eindhoven University of Technology (TU/e)
The Netherlands

Course Overview

The photonic integration allows for the creation of application-specific photonic system-on-chip (SoC) for a wide range of applications. The realization of a custom photonic SoC requires familiarity with the PIC-based product creation chain. Decisions and choices made in early-stage planning and at the design phase are critical to the successful development of a product manufacturable at scale.

This 1-day long intensive course is a hands-on development program and built with experienced professionals. Instructions for DfX (test, production, manufacture) in photonics, test automation methods, and participant-specific projects will be given. On the completion the adepts will gain awareness of risk management methods in route to manufacturability, will be able to build a TRL-gated development plan with commercial suppliers. These will enable the development of custom PIC-based products that can be scaled at own businesses or via available pilot-line services such as JePPIX Pilot Line and PIXAPP.

Target Audience

Businesses developing own product, preparing for Pilot Line programs .

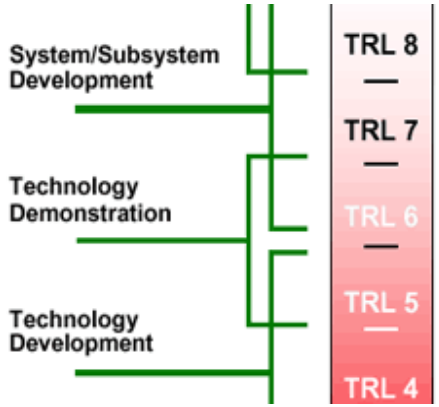
Expected Outcomes

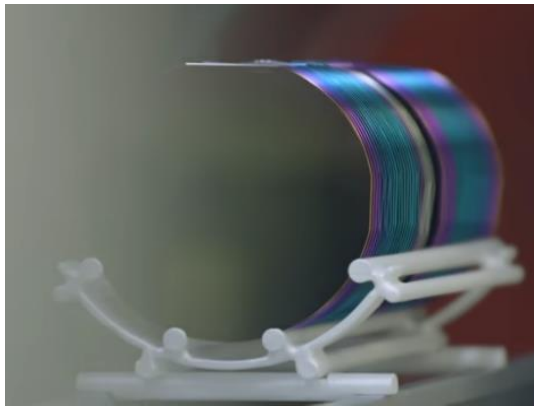
1) Awareness of risk management methods in route to manufacturability.
2) Product design strategy for test, production and manufacturability (DfX)
3) Ability to build a TRL-gated development plan with commercial suppliers

Course Schedule

Time	Demo Activity
09:00 – 10:30	**TUE Orientation, Course Introduction & Tutorial: Design for X (lecture)**
11:00 – 12:30	Demo 1: Experiment control with open standard test framework (openEPDA.org) (hands-on)
14:00 – 15:30	Demo 2: Custom test protocol with design of experiments DoE (hands-on)
15:30 – 17:00	Demo 3: Electronic-Photonic Test Automation (hands-on)
17:00 – 17:30	**Follow-Up Questions & Close**

Course Trainers





Course Director: Dr. Sylwester Latkowski

Course Manager: Dr. Dzmitry Pustakhod

Tutorial: Dr. Sylwester Latkowski

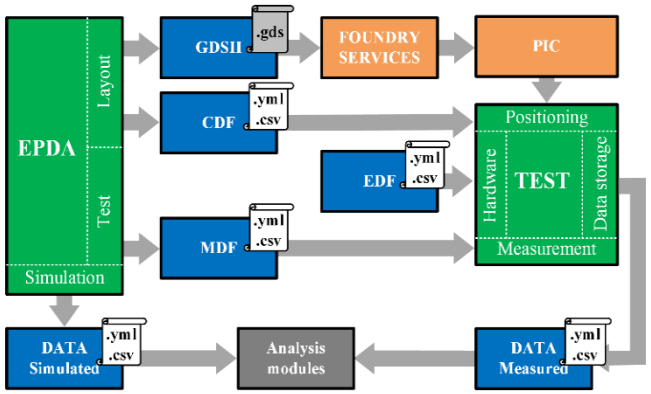
Demo 1: Dr. Dzmitry Pustakhod

Demo 2: Dr. Dzmitry Pustakhod

Demo 3: Michail Chatzimichailidis

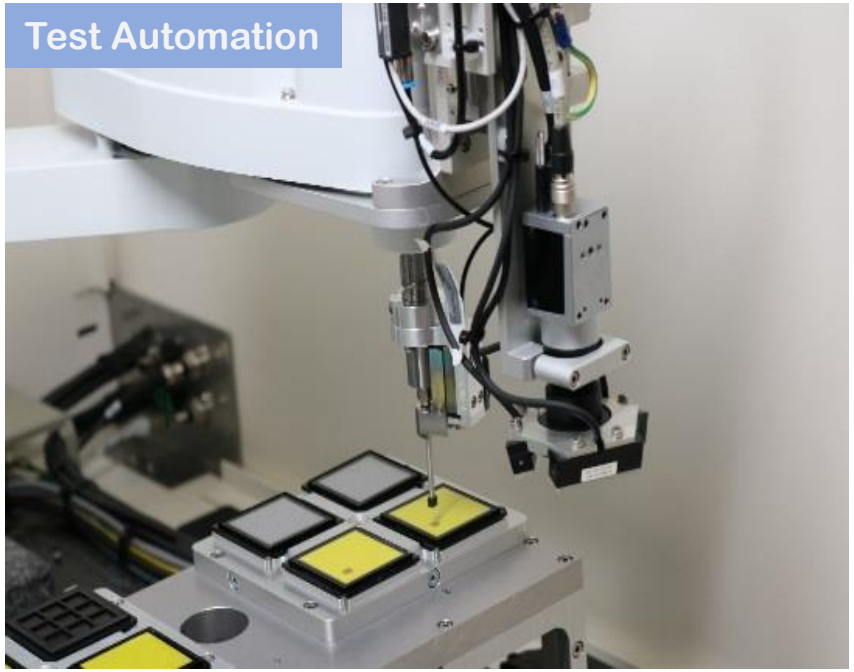
Course Demonstrators

Test protocols



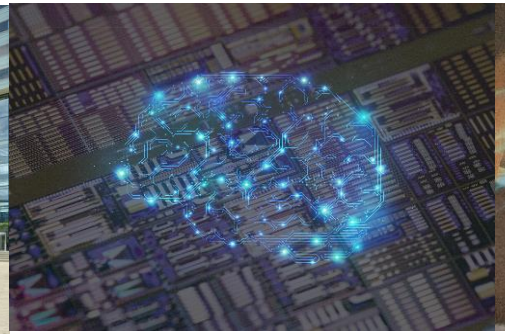

```
1   # openEPDA DATA FORMAT
2   _openEPDA_version: '0.2'
3   _timestamp: '2018-09-12T09:59:19.310182'
4   project: OpenPICs
5   setup: RF setup
6   operator: Xaveer
7   wafer: 36386X
8   sample: 13L8
9   cell: SP35-1-3
10  circuit: MSSOA1-6
11  current density, kA/cm**2: 1
12  polarization: TE
13  port: ioE132
14  chip_temperature, degC: 18
15  ...
16  "Wavelength, nm","Transmitted power, dBm"
17  0.00000000000000e+00,0.000000000000000000e+00
18  1.00000000000000e+00,1.001001001001001062e-01
```

Test Automation



Design for Product

Course Location, Schedule & Cost

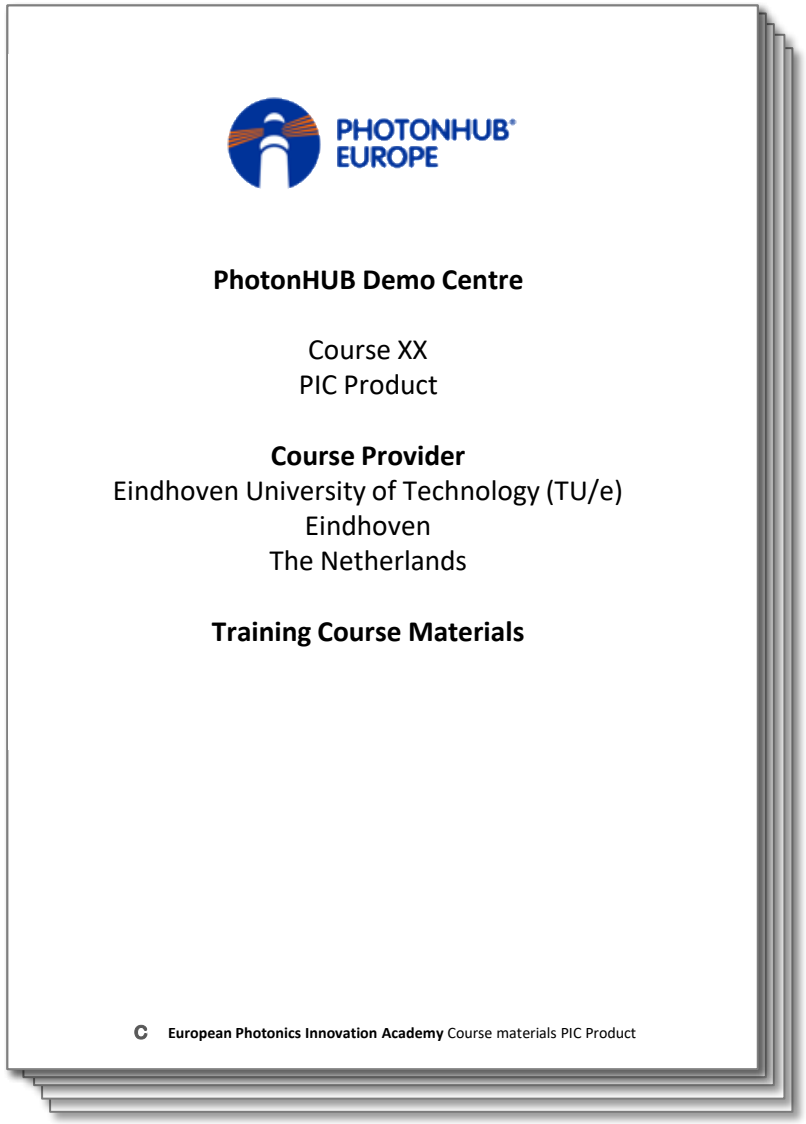




- Location: Eindhoven University of Technology (TU/e) Campus
- Course Schedule (April, September - exact dates to be confirmed)
- Number of people (Groups of 10 people per course)
- Course Cost (500 Euros per person, includes catering and project consumables)

Further Information

- S.Latkowski@tue.nl
- www.jeppix.eu
- www.photonhub.eu/euphotonicsacademy

Course Material (technical hand-outs)



Keywords

Photonic Integrated Circuits, PIC, Indium Phosphide, InP, Integrated Photonics

Technology Readiness Level, TRL, Electronic-Photonic Testing, Design for Product (DfX)

Design for Test, Design for Packaging, Manufacturing, Pilot Line, Ecosystem, Automation

Application Specific Photonic Integrated Circuit, ASPIC, Photonic SoC

Communications, Biomedical, Sensors, Agri-Food

Relevant Technology & Application Domain

Technology: InP, SiNx, SiPH, Hybrids

Application: Relevant to all application domains