

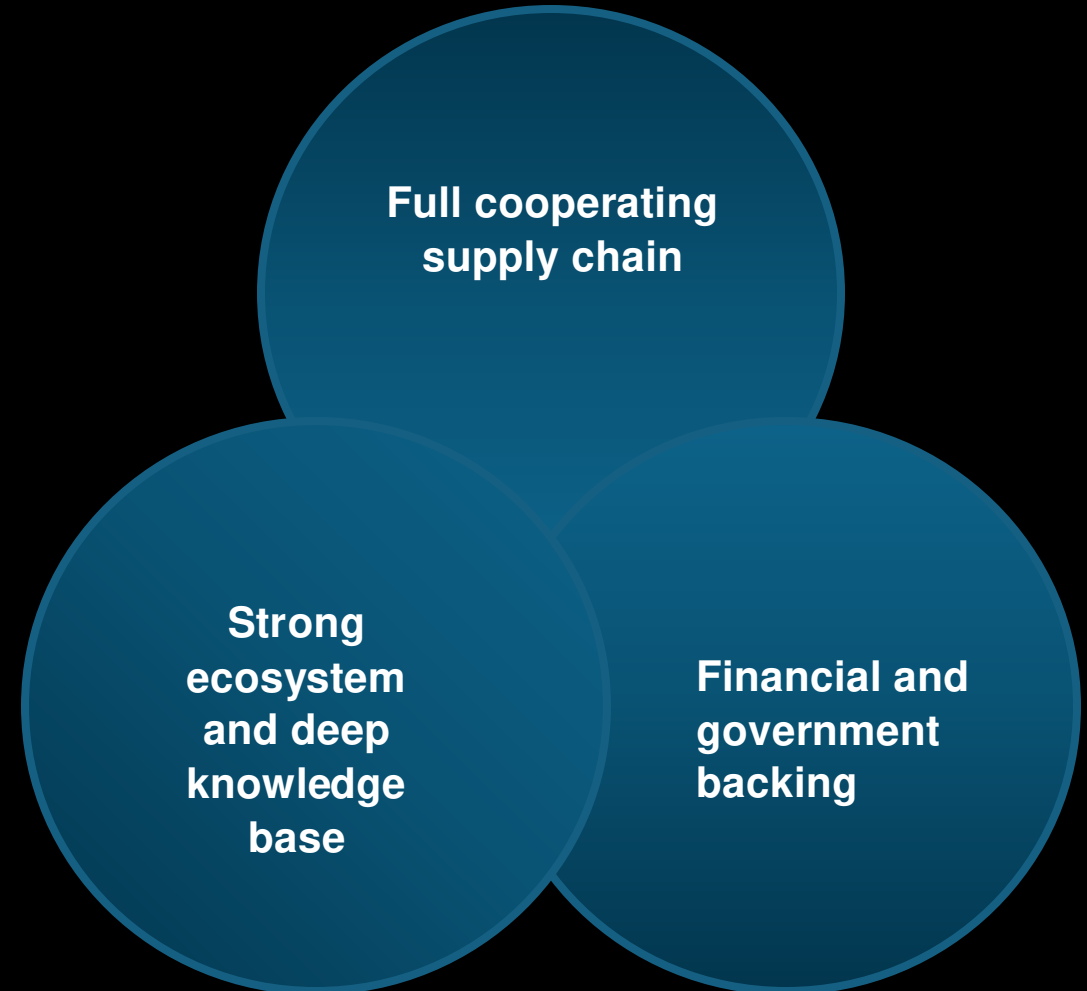
Next generation microchips,
powered by light

PhotonDelta

A cooperating ecosystem of companies and R&D organizations in Integrated Photonics

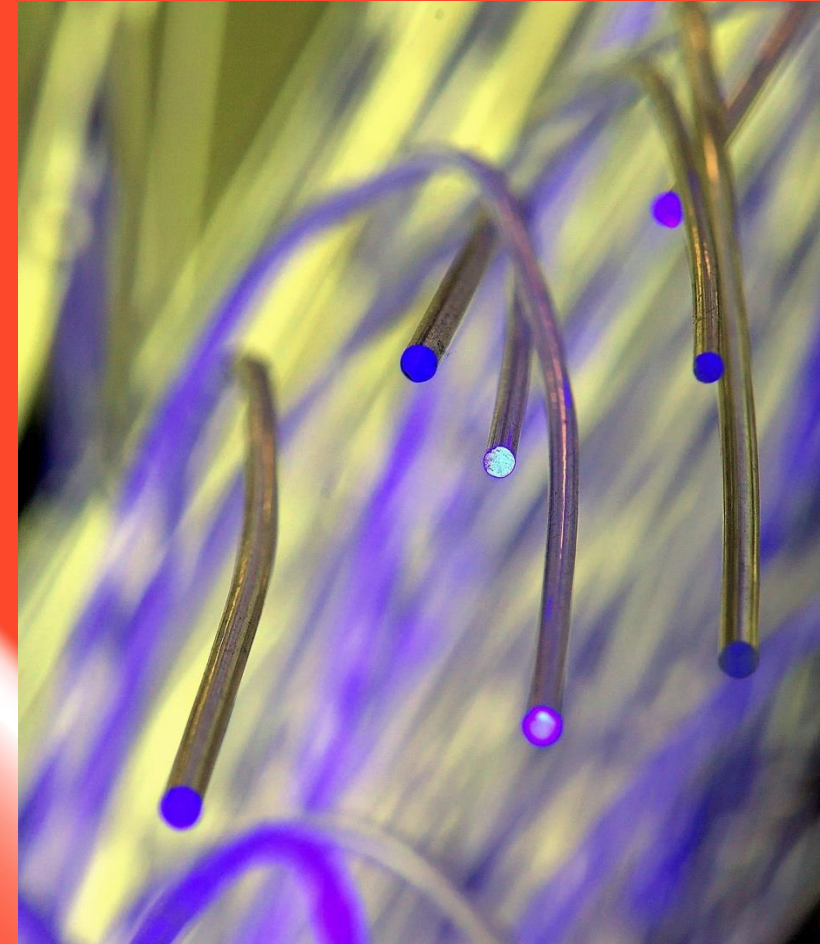
The PhotonDelta organization to support

- **Economic and ecosystem development**
- **Execution of 1.1 B€ growth fund program**
- **International and EU relations**
- **Market and Talent development**
- **Start up support and seed investment**

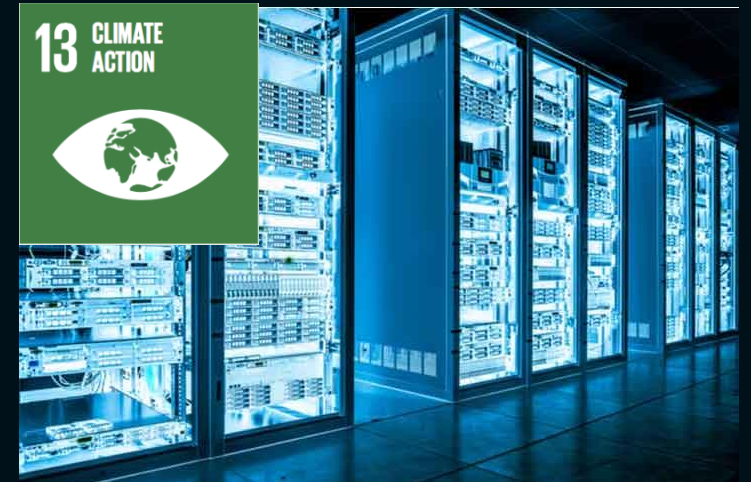
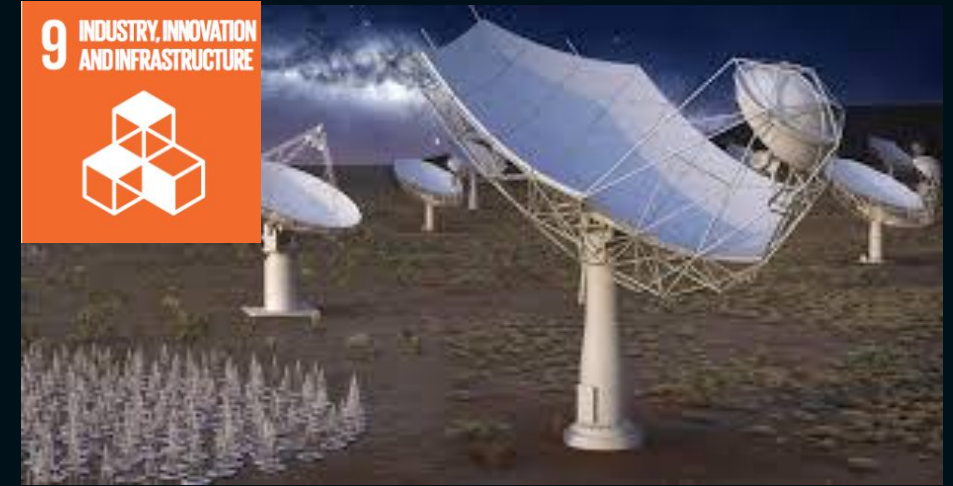
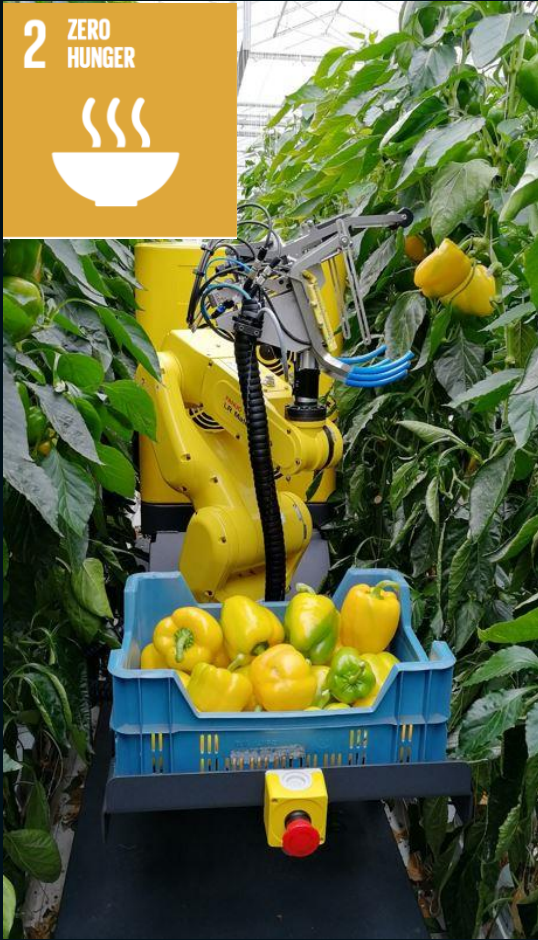


Why Photonic Integrated Circuits (PICs)?

- ✓ Photonic technology detects, generates, transports and processes light
- ✓ Include lasers, sensors, and fibre-optic networks
- ✓ Combine two or more photonic functions into a single chip to create new, faster, and more energy efficient devices.
- ✓ PICs are highly effective at processing and transmitting data & sensing with the highest level of precision
- ✓ Can be integrated alongside traditional electronic chips.
- ✓ With different wavelengths, photonic processors could transact multiple pieces of data simultaneously (wavelength division multiplexing)



Contribution of Photonics to the SDGs



Integrated photonics can revolutionize markets

In the same way semiconductors did, disruptive solutions for volume markets. Addressing global challenges



Datacom

Grand Challenges:

- Digitization of Society
- Exponential growth
- Data usage



Quantum/AI

Grand Challenges:

- Secure communication
- Digitization of Society



Mobility

Grand Challenges:

- Autonomous driving
- Electric vehicles



Healthcare

Grand Challenges:

- Point of care
- Aging population



Agrifood

Grand Challenges:

- Sustainable farming
- Climate change
- Precision agriculture

- Integrated Photonics used in Datacom/telecom is already a multibillion € market
- Other markets are emerging but also have multibillion € potential



PhotonDelta Ecosystem

1. Design



Tech partners

SYNOPSYS

2. Fabrication



Tech partners

ASML
AIXTRON

3. Packaging

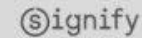


Tech partners

CITC
ETTEPLAN
TYNDALL
SALLAND
IMS
MICROALIGN
AIXSCALE

4. Applications

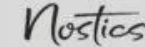
Data & Telecom



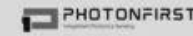
Tech partners

HIGH TECH XL
NTS OPTEL
CHILAS
SUPERLIGHT

Medical



Sensing



Quantum



• Talent, Education and Community

Industry brand

Career fairs

www.photonjobs.nl

Continuous education

Masterplus programme, Summerschool, Courses

Student team sponsoring

Community

Expert & talent community events

Industry partner meetings



Career fairs



Masterplus '24




Team VOID (TU/e)

Photonjobs.nl

 PhotonJobs

Dutch Photonic Chip Industry 

Explore opportunities 

Learn & Grow 

Find jobs

Light the way to a
career with real
world impact

Explore the Dynamic MasterPlus Programme Optics & Photonics

MPOP		TU Delft	TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY	UNIVERSITY OF TWENTE.								
YEAR 1	Applied Physics	<ul style="list-style-type: none"> ■ Fundamentals course ■ Track instrumentation electives ■ Optics/Photonics electives ■ Free electives ■ Professional development 	<table border="0"> <tr> <td>Applied Physics</td> <td>Electrical Engineering</td> </tr> <tr> <td> <ul style="list-style-type: none"> ■ Introductory courses ■ Optics/Photonics electives ■ Free electives ■ Industrial internship </td> <td> <ul style="list-style-type: none"> ■ Introductory courses ■ Optics/Photonics electives ■ Free electives ■ Professional development </td> </tr> </table>	Applied Physics	Electrical Engineering	<ul style="list-style-type: none"> ■ Introductory courses ■ Optics/Photonics electives ■ Free electives ■ Industrial internship 	<ul style="list-style-type: none"> ■ Introductory courses ■ Optics/Photonics electives ■ Free electives ■ Professional development 	<table border="0"> <tr> <td>Applied Physics</td> <td>Electrical Engineering</td> </tr> <tr> <td> <ul style="list-style-type: none"> ■ General Master program ■ Specialisation in Applied Nanophotonics ■ Free electives </td> <td> <ul style="list-style-type: none"> ■ Mandatory Master program ■ Specialisation in Integrated Optics ■ Electives of specialisation </td> </tr> </table>	Applied Physics	Electrical Engineering	<ul style="list-style-type: none"> ■ General Master program ■ Specialisation in Applied Nanophotonics ■ Free electives 	<ul style="list-style-type: none"> ■ Mandatory Master program ■ Specialisation in Integrated Optics ■ Electives of specialisation
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YEAR 2	<ul style="list-style-type: none"> ■ Industrial internship ■ Master project <p>Some electives: Advanced Photonics, Geometrical Optics, Experimental Techniques in Optics, Advanced Optical Systems, Optics for Lithography, Lasers and Detectors, Opto-Mechatronics.</p>	<ul style="list-style-type: none"> ■ Master project ■ Industrial internship ■ Master project <p>Some electives: Photonics and Modern Optics, Nanophotonics, Optical Sensing and Metrology, Photonic Integrated Devices, Optical Fiber Communication Technology, Terahertz Systems.</p>	<ul style="list-style-type: none"> ■ Industrial internship ■ Master project <p>Some electives: Molecular Structure and Spectroscopy, Integrated optics, Quantum Information, Computer Vision & Biometrics, Integrated Circuit Technology, Microwave Techniques.</p>									
PLUS	<p>'Pluses' during the two years of study:</p> <ul style="list-style-type: none"> ■ Careers in Optics & Photonics camp ■ Scientific & social events 	<p>'Pluses' during the two years of study:</p> <ul style="list-style-type: none"> ■ Careers in Optics & Photonics camp ■ Scientific & social events 	<p>'Pluses' during the two years of study:</p> <ul style="list-style-type: none"> ■ Careers in Optics & Photonics camp ■ Scientific & social events 									

- ✓ 3 Technical Universities
- ✓ Specialized courses
- ✓ Internship within industry
- ✓ Part of the community
- ✓ www.mpop-programme.com



PhotonDelta

WIN €50,000 IN PRIZES AND UP TO €2 MILLION IN PRE-SEED FUNDING!

GLOBAL PHOTONICS ENGINEERING CONTEST

Design the next generation application with Photonic Chips

Launches on October 15th, 2024.

Supported by:



Bringing your innovation to life

* Terms and Conditions Apply

Thank you

We invite and support
international cooperation
Join us!

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