



# INNOVATIVE DOCTORAL EDUCATION ECOSYSTEM FOR PHOTONICS (I-DEEP)

Optics and Photonics Days 2024  
May 28, Helsinki



# Doctoral Education Pilot Funding



- 1** 1000 doctoral positions funded for 2024-2027
- 2** 3-year funding ▶ Expected graduation time 3-4 years
- 3** Part of the initiative to increase Finland's R&D funding to 4% of GDP by 2030
- 4** Pilot new practices in doctoral education to increase the number of doctors in the private sector / industry

# Doctoral Education Pilot Funding

## Flagship themes (800)

## Non-Flagship themes (200)



Konsortio	Määrärahat (eur)
Circular Materials Bioeconomy Network: From bio-based resources to advanced materials	17 085 000
Digital Waters Doctoral Education Pilot	15 300 000
Doctoral Education Pilot for Mathematics of Sensing, Imaging and Modelling	25 500 000
Doctoral Education Pilot in Precision Cancer Medicine	38 760 000
EDUCA Flagship doctoral school pilot project	19 890 000
Finnish Doctoral Program Network in Artificial Intelligence	25 500 000
National Doctoral Education Pilot based on Immune system	20 655 000
PREIN Doctoral education pilot	18 360 000
Quantum	22 950 000
<b>Yhteensä</b>	<b>204 000 000</b>

Konsortio	Määrärahat (eur)
Doctoral pilot in software engineering	12 495 000
Graduate school in particle and nuclear physics	4 080 000
Intelligent Work Machines	7 905 000
Interdisciplinary Doctoral School of Social Services	8 670 000
Kestävyysmurros (Sustainability Transformations)	10 200 000
MicroElectronics doctoral school pilot	7 650 000
<b>Yhteensä</b>	<b>51 000 000</b>

1000  
DOCTORAL  
POSITIONS  
(255 M€)

# I-DEEP: Innovative Doctoral Education Ecosystem for Photonics - Organization

## I-DEEP consortium based on the activities of

- Flagship for Photonics research and Innovation (PREIN)
- Photonics national research infrastructure (FinnLight)
- Associate partners: photonics Finland VTT

## 72 positions

University	Positions
Tampere University	26
University of Eastern Finland	15
Aalto University	14
University of Jyväskylä	6
University of Turku	4
University of Oulu	4
Åbo Akademi	3



- Calls opened in April-May
- Over 700 applicants
- Decisions made May-June
- Positions filled from August 1, 2024 / January 1, 2025

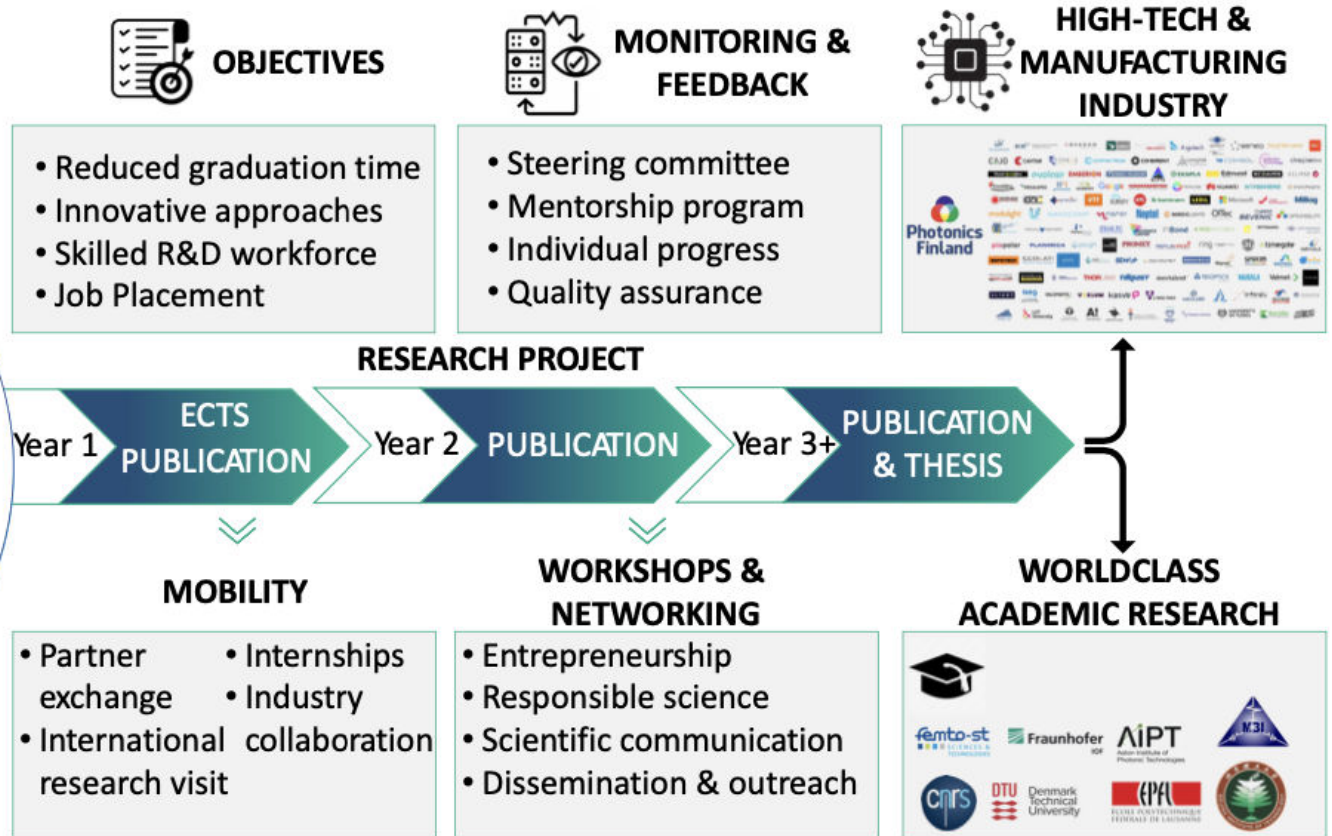
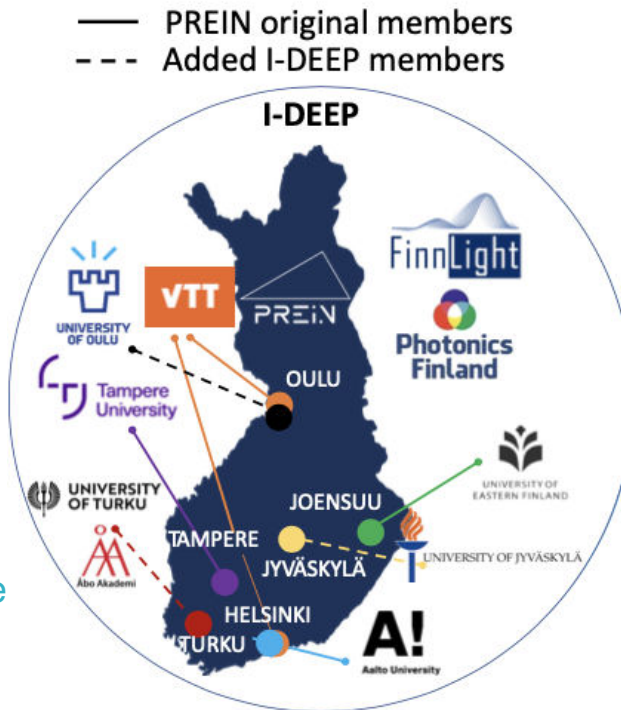


# I-DEEP in a Nutshell

- Extends beyond PREIN partners

## R&D Fields

- Optoelectronics
- Lasers
- Nonlinear optics
- Waveguides & optical fibre
- Photovoltaic
- Integrated optics
- Communication
- Plasmonics
- Printed optics
- Organic materials
- Quantum optics
- Biophotonics
- Spectroscopy
- Nanostructures & nanomaterials
- MOEMS
- Imaging



# Practical Organization is Light

## STEERING COMMITTEE

Goëry Genty (TAU)	Tea Vellamo (TAU, Admin. Coordinator)
Jyrki Saarinen (UEF)	Jussi Hiltunen (VTT)
Zhipai Sun (Aalto)	Juha Purmonen (PF)
Gerrit Groenhof (UJ)	Industry representative
Tapio Fabritius (UO)	
Nicklas Anttu (ÅA)	
Kimmo Luoma (UT)	

- General orientations
- Follow up
- Events organization
- National coordination

## ADVISORY BOARD

Industry & Stakeholders

- Collaboration
- Skills & needs
- Employment perspectives
- Feedback

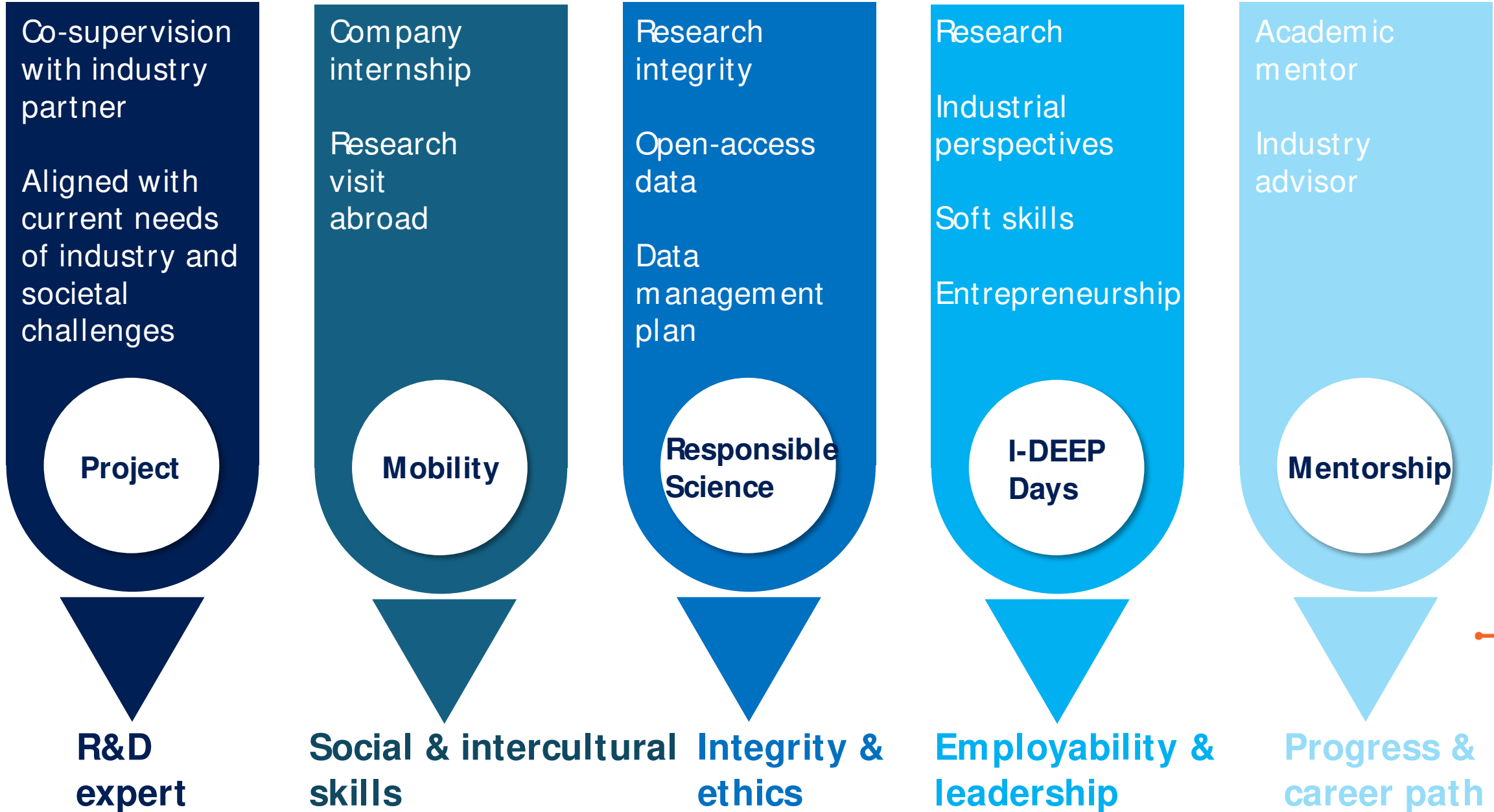
**Program Monitoring**  
*Studies*  
*Publications*  
*Mobility*  
*Feedback*

**Mentoring System**

*Academic*  
*Industry*



# I-DEEP Curriculum is Designed for Personalized Training





# Get in Touch During OPDs!





# How to get involved?

PREIN

ABOUT ▾ NEWS & EVENTS ▾ RESEARCH ▾ STUDIES ▾ I-DEEP ▾ OUTREACH ▾ FOR INDUSTRY ▾ CONTACT US

## PHOTONICS – THE SCIENCE OF LIGHT

PREIN Flagship is a Photonics Research and Innovation platform focusing on light-based solutions from scientific excellence to industrial and societal impact. PREIN partners are worldwide leaders in photonics.

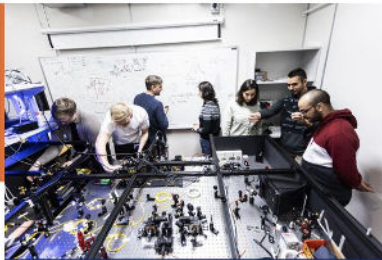
Photonics and light-based technologies play a central role in all areas of modern life, including in telecommunications, biomedicine, health care, energy and environment, manufacturing, and consumer products. [Read more](#)



### RESEARCH

Light-based solutions from fundamental and applied research to prototype and technology development.

[Read more](#)



### STUDY PHOTONICS IN FINLAND

Top-level master's degree studies and doctoral studies.

[Read more](#)



DOCTORAL STUDIES  
I-DEEP

### THE DOCTORAL PILOT PROGRAMME INNOVATIVE DOCTORAL EDUCATION ECOSYSTEM FOR PHOTONICS – I-DEEP

The overall rationale of I-DEEP is to educate a new generation of doctoral students through innovative approaches that accelerate graduation time without compromising the quality of education.

[Read more](#)



### PHOTONICS FOR INDUSTRY

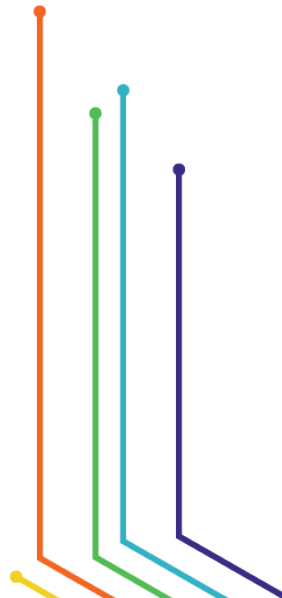
Expertise, Capabilities and Facilities for Photonics Research.

[Read more](#)

Web page: [prein.fi](http://prein.fi)

Contains all relevant information

Can express interest for various forms of collaboration



# Looking for Companies to Join the Photonics Doctoral Education Pilot

*Innovative Doctoral Education Ecosystem for Photonics I-DEEP* addresses the need for highly-qualified experts in the photonics industry by training 72 new PhDs in 2024-2027. Would your company be interested to participate in the I-DEEP photonics doctoral pilot activities?

## Form to be filled

If are you interested in collaborating, [fill in the form of interest](#) and we will contact you.

For the possibility to collaborate in particular research theme, contact the Research Group leader of the theme. You can find the rese

Collaboration possibilities include:

- research collaboration
- co-supervision
- mentoring
- offering industry internships, and placements
- being a member of the Industrial Advisory Board of I-DEEP
- finding potential employees to recruit upon graduation
- participating in I-DEEP events

## List of I-DEEP research themes

The form contains the following questions and options:

1. Name of the company \*  
Enter your answer
2. Name of the company representative (contact person) \*  
Enter your answer
3. e-mail of the contact person \*  
Enter your answer
4. Our company is interested in the following collaboration (please tick all that are relevant) \*
  - Research collaboration
  - Co-supervision of doctoral thesis
  - Mentoring of PhD student(s)
  - Offering industry internship or placement
  - Participating in I-DEEP thematic events
  - Offering employment prospectives
  - Other
5. Provide the research topic(s) which is of interest to you (write the number or name of the topic). The different research topics are listed (LINK) and you can filter them according to the application field/theme. You can list as many you want.  
Enter your answer
6. Have you already discussed the collaboration with the research group leader?
  - Yes
  - No

Select organization

All Organization

Select theme

All themes

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Collaboration possibilities include:

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- co-supervision
- mentoring
- offering industry internships, and placements

## ✓ All Organization

- Aalto University (14)
- Åbo Akademi University (3)
- Tampere University (26)
- University of Eastern Finland (15)
- University of Jyväskylä (6)
- University of Oulu (4)
- University of Turku (4)

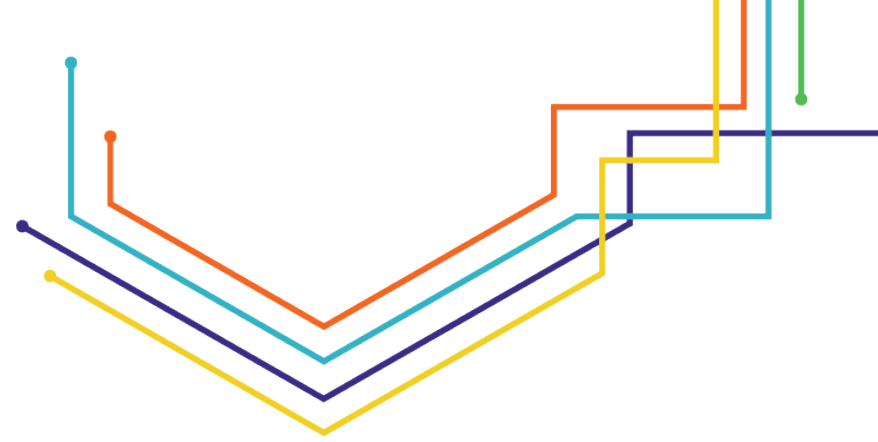
All Organization

## ✓ All themes

- Design and manufacturing of optical components and systems (8)
- Imaging (10)
- Industrial production and manufacturing (4)
- Information and Communication (8)
- Innovation and commercialisation (1)
- Life sciences and health (13)
- Light sources (5)
- Lighting, electronics and displays (4)
- Optical components and materials (34)
- Optical fiber technology (2)
- Security, metrology and sensors (18)
- Solar energy, photovoltaics (9)

All themes

# CONTACTS



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OKMETIC

# Industry vision on the pilot

Dr. Heikki Holmberg,  
Director of R&D, Okmetic Oy

# The industry vision and how we can achieve it

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**Highly talented PhDs working  
in industry or own company**

Cooperate with  
other doctoral pilots

**Recruit highly  
talented students**

Enough challenging  
topics

Match students and companies  
already during studies

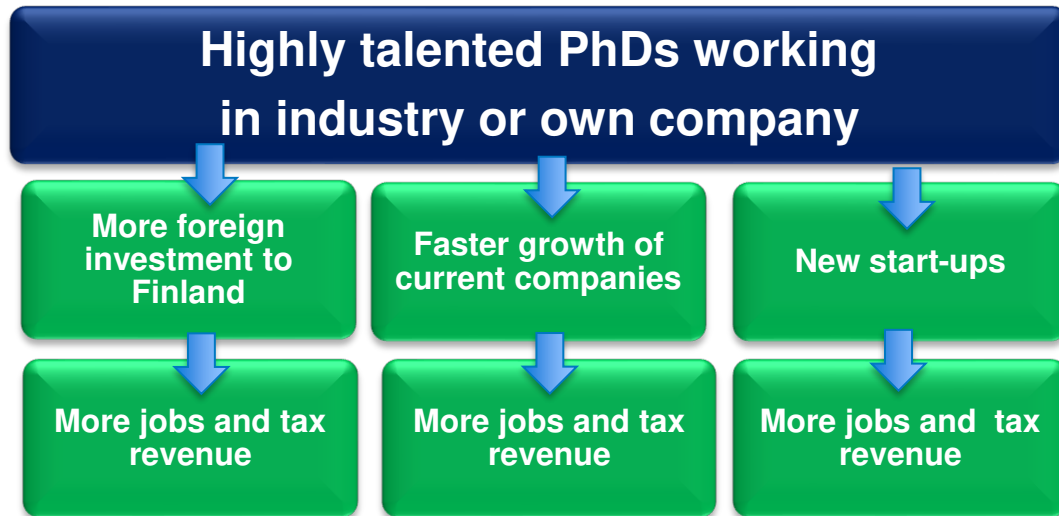
Plentiful  
international cooperation

Ensure diversity  
of students

Create enthusiastic  
atmosphere

# Vision of the pilot benefits

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Kiitos!

**OKMETIC**

ADVANCED SILICON WAFERS SINCE 1985