

Hoe nano kan aansluiten bij de quantumrevolutie

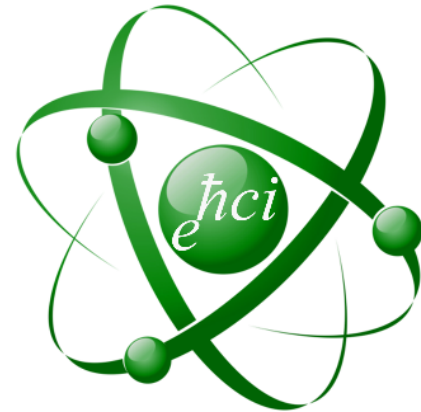
QuantumNano: Op het snijvlak van quantum en nano

Met

- Raoul Oostenbrink | senior program manager Quantum Delta NL



Holland High Tech
Global Challenges, Smart Solutions



Eindhoven Hendrik Casimir Institute

01-11-2022

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Who was Hendrik Casimir?

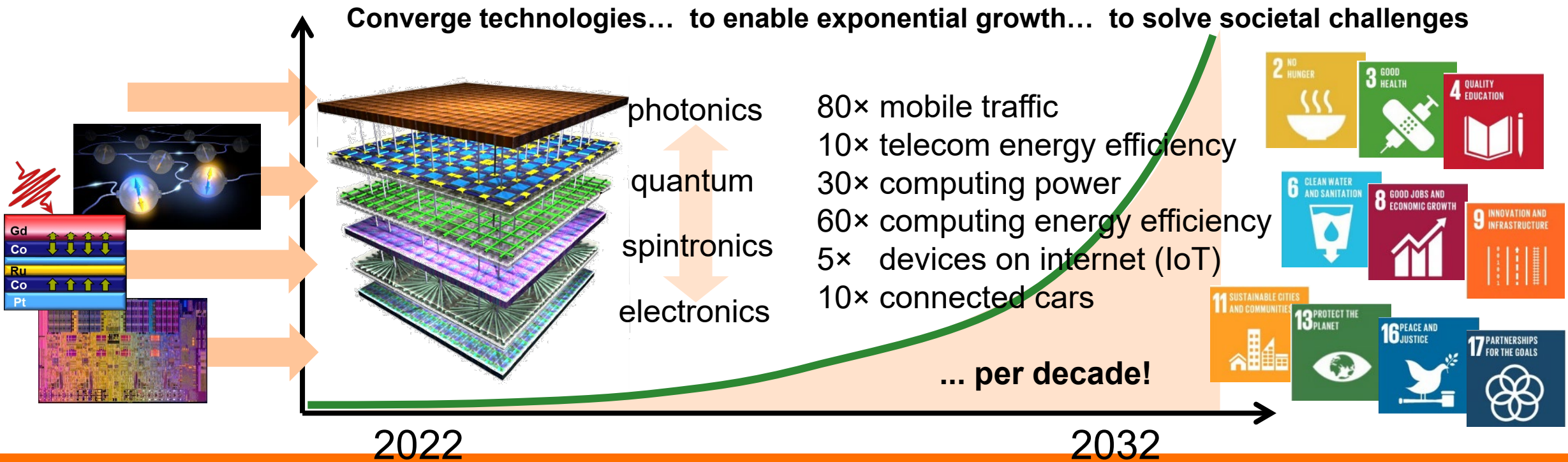
Hendrik Casimir (1909 – 2000)

- Pioneering work in quantum and superconductivity
- Clear link with high-tech ecosystem around Eindhoven
- Initiated **science–technology spiral**: technology and science progress together



Exponential technologies address our global challenges

Heterogeneous systems, based on new paradigms in computing, communication and sensing, will become the key enabler of our sustainable information society, thereby addressing our global societal challenges



Strategy statement

Vision – With the end of traditional scaling in communications and computing in sight, heterogeneous systems, based on new paradigms in computing, communication and sensing, will become the key enabler of our information society.

Mission – Building on our core strengths in photonics and quantum technology, from materials to systems, we focus on three Grand Challenges in the fields of communications, computing and sensing, to enable a sustainable information society

Ambition – Our ambition is to become a key player for new and emerging information technology hardware, with global leadership in selected areas in photonics and quantum technology.

EHCI addresses the Grand Challenges of this age

Computing



Scalable quantum computing

Long-coherence qubits

Efficient neuromorphic computing

Communication



Energy-efficient datacom

Massive hybrid networks

Quantum secure networks

Sensing



Single-molecule analytics

Multimodal metrology

Integrated remote sensing

Eindhoven Hendrik Casimir Institute

- Institute launched in September 2021
- Grand Challenges along two research pillars:

Quantum Technology



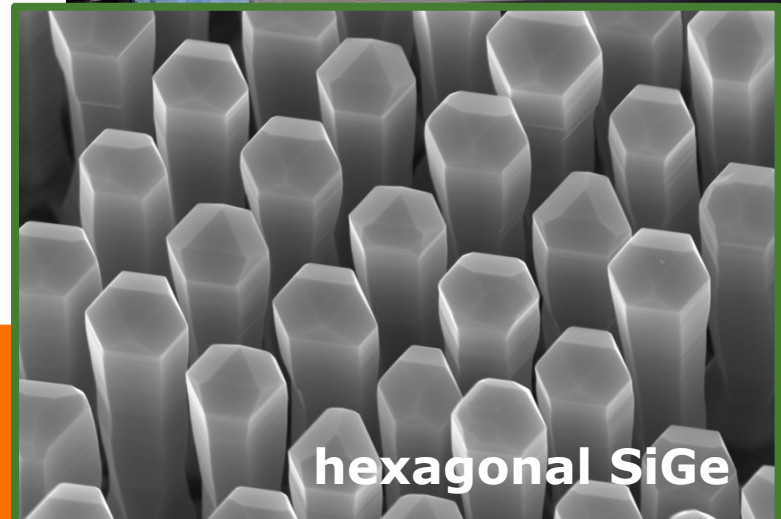
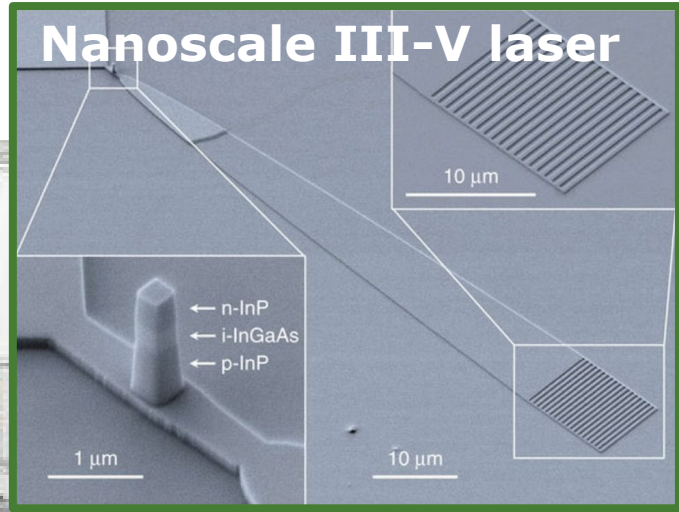
National Growth Fund
Quantum technology
(615 M€)

Integrated Photonics



National Growth Fund
Integrated Photonics
(471 M€)

Facilities: cleanroom - NanoLab



Partners

ASML

 **BRIGHT**
Integrated
PHOTONICS


MantiSpectra

TNO

MicroAlign

NXP

EFFECT
PHOTONICS


Quantum Delta
Nederland

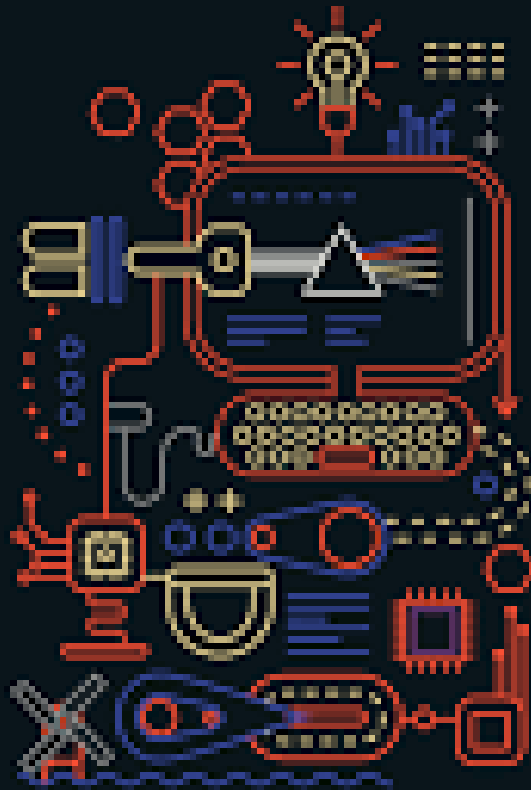



SMART
PHOTONICS
Independent InP Foundry

PITC
Photonic Integration
Technology Center

PhotonDelta

TeraNova



Bringing together
academia, investors,
industry, end-users

PIC Summit Europe

7-8 Nov Eindhoven

A cityscape with a digital network overlay. The background shows a city with tall buildings and a large plaza with many people walking. Overlaid on this is a complex network of glowing green and yellow lines, resembling a circuit board or a data network, with bright points of light at the intersections.

**Thank you for your
attention!**

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NL

<https://www.tue.nl/en/research/institutes/eindhoven-en-hendrik-casimir-institute/>

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