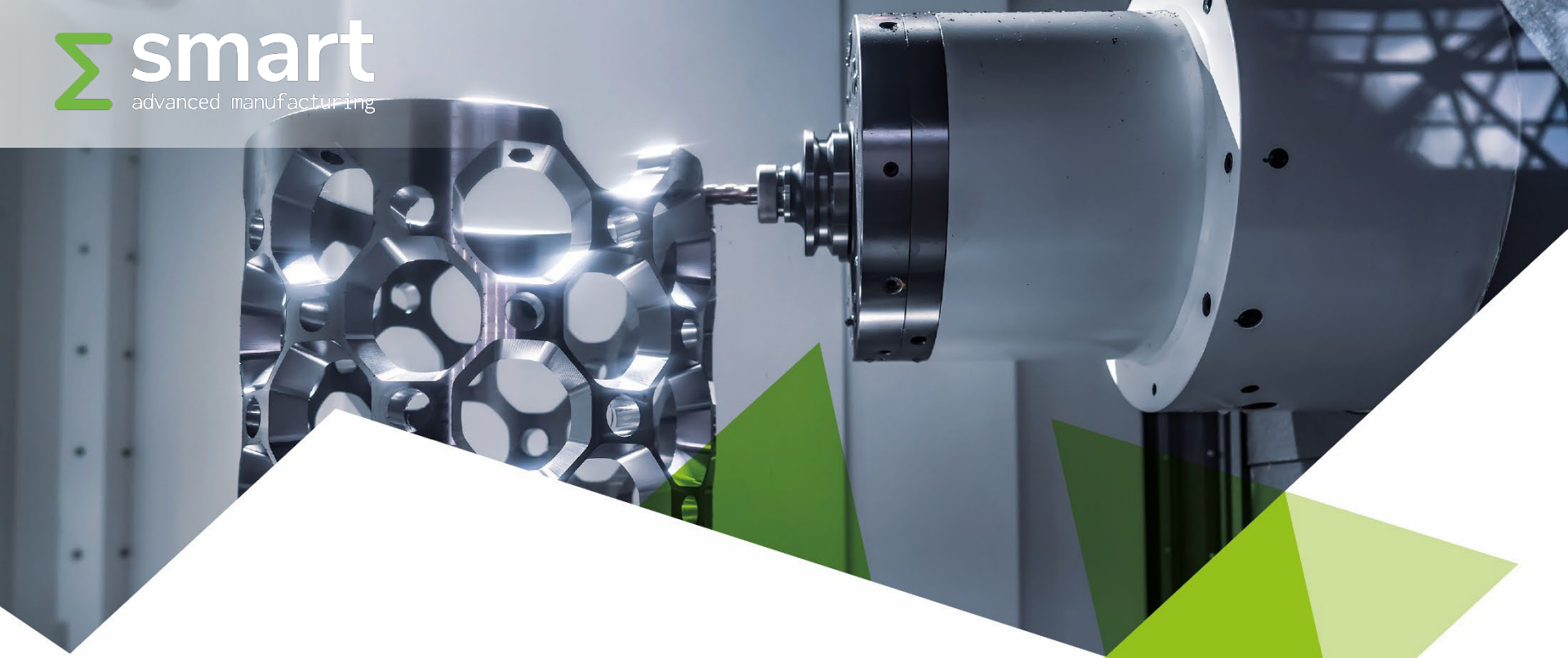
smart
advanced manufacturing



Optical isolator (diode) chip

Nanophotonic device


smart
advanced manufacturing

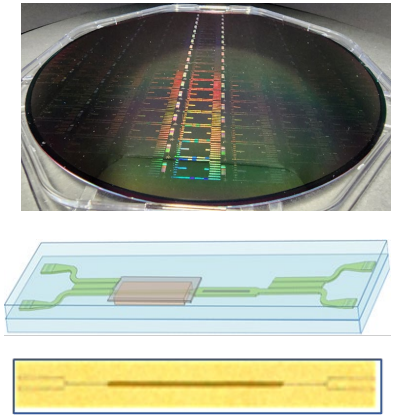
PhotoniSol Inc.

About company:
PhotoniSol Incorporated is a technology-oriented venture company with spin-off technologies from an academic laboratory of Inha university in Korea to commercialize the world first **optical isolator (diode) chip**.

Members:
We have eight technical members who are specialized in photonic devices and nano-optics.
Especially professor Kyong Hon Kim, CEO of the company, has long-term technical experiences of laser and photonic device development in NASA, USA and ETRI, Korea, and of a major Korean national R&D planning member in photonics area.

Products:
- Optical isolator chip
- Optical interposer & optical interconnect
- Electro-optic scanners for LiDAR application

On-going R&D projects:
Strategic startup project in photonic system on chip



PROPOSAL INTRODUCTION (I)

Vision: main project goal

- Commercialization of the world first **optical isolator chips** for photonic integrated circuit applications
- **Technical collaboration** of device development teams and silicon nanophotonic manufacturing teams

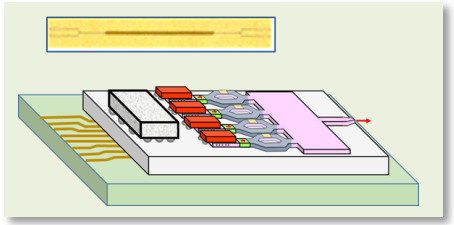
Motivation: why the project is necessary

- The optical isolator chips based on silicon photonics requires an efficient **nanophotonic foundry** to handle highly critical device fabrication process.
- The optical isolator chip is an important device in realization of the 21st-century's photonic integrated circuit era, but **no practically useful chip** is available yet.

Content: which are the developments to be made in the project

- PhotoniSol Inc. seeks for a collaborator to support the very fine fabrication processes of silicon waveguides and to be co-producers of the company's optical isolator chip devices.
- Development of the silicon waveguide devices for optical isolator chips with well-stabilized device fabrication lines.

PROPOSAL INTRODUCTION (II)

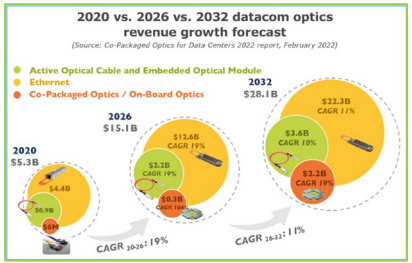


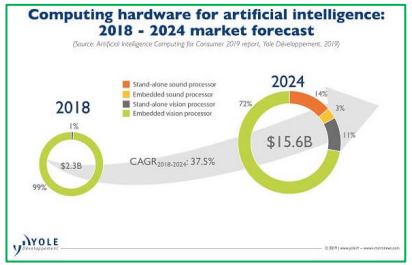
Expected outcome: descriptions of the results to be obtained in the project

- The world first commercialization of **optical isolator chips**
- Achievement a major key device for photonic integrated circuit applications

Impacts: what will be the expected market impact of the project

- The **optical isolator chips** are very important for next generation **high-capacity optical transceivers for data center** applications and for **optical interconnects in next generation machine-learning and AI computers**.
- The optical isolator chips will be used for optical interposers in electronic chip-to-chip interconnection and will take an important portion in **next-generation semiconductor markets.**





Schedule: start and end dates for the project. Duration.

- Desired start date of the project: January 2023
- Duration of the project: Three years (or longer)

PARTNERS

Current Consortium: list of partners already involved in the project

- Korean National Nanofab Center
- Inha University
- Quintess Co., Ltd.
- Korea Institute of Science and Technology (KIST)

Partner search: type of partner searched and countries of origin (if necessary).

A technical group having **advanced silicon foundry facilities for very fine patterned device fabrication**, such as
- IMEC
- CEA-Leti

CONTACT INFO

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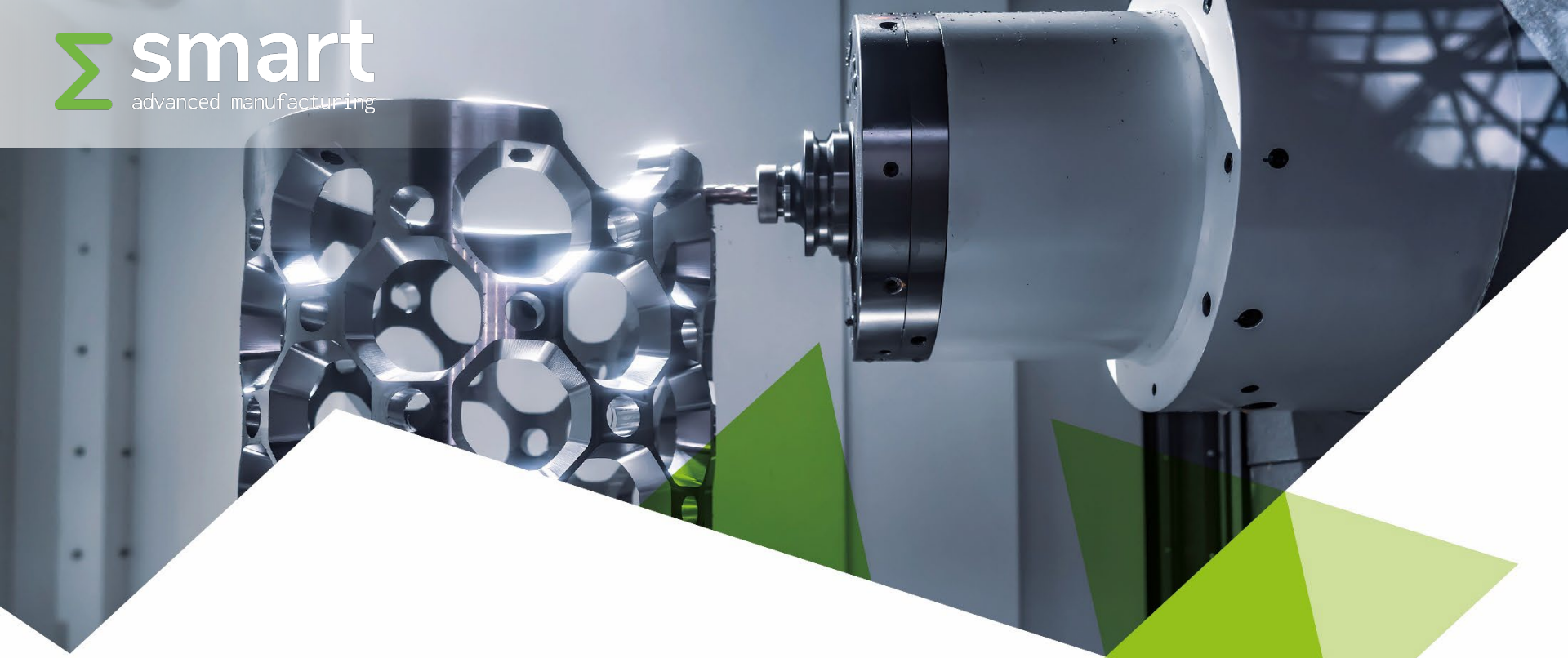

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