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SPÓŁKA AKCYJNA

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REVOLUTION IN PHOTONICS

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OPTICAL SENSORS

CYBERSECURITY

FAST DATA TRANSMISSION

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Revolutionary change

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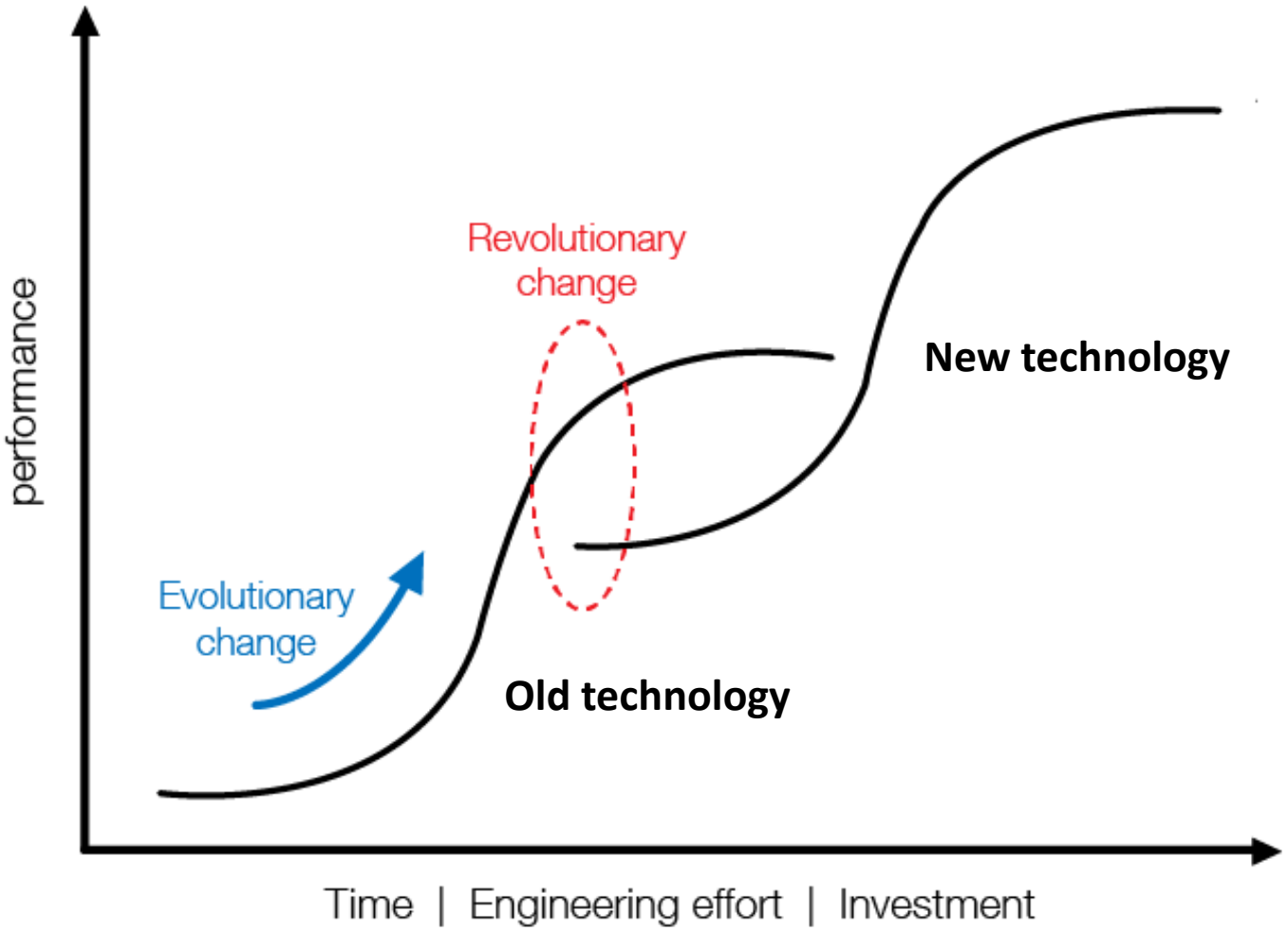

Revolutionary change - example

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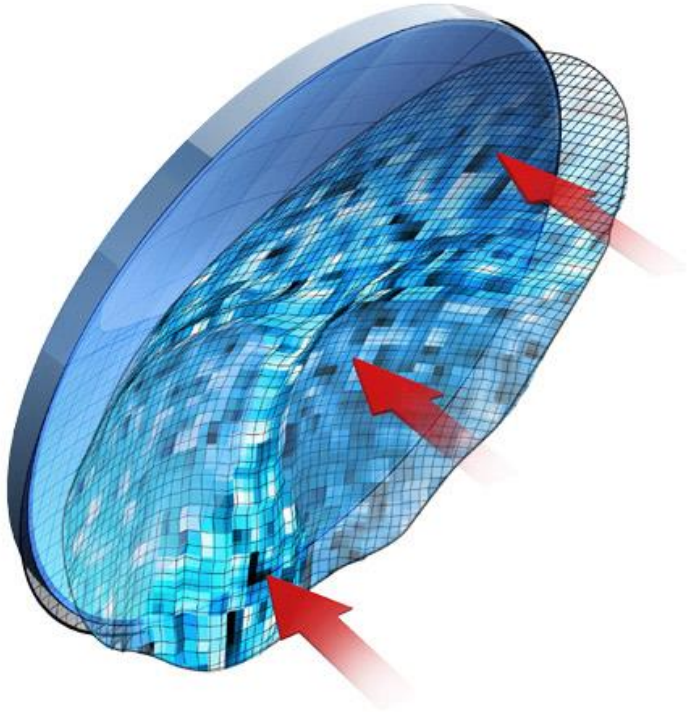
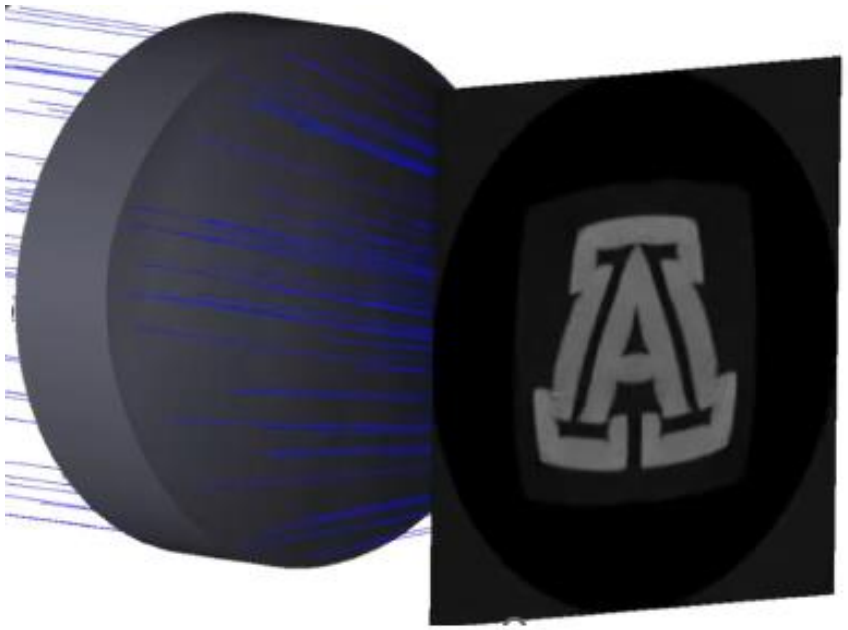
Freeform lens example



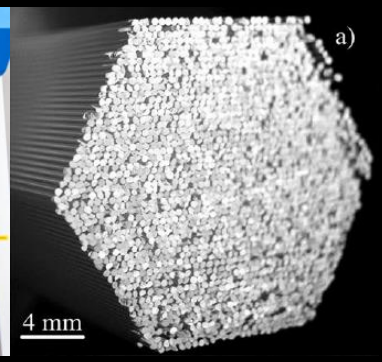
Old technology

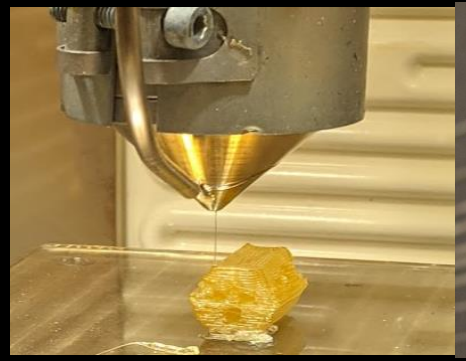
SYGLASS enabled flat lenses

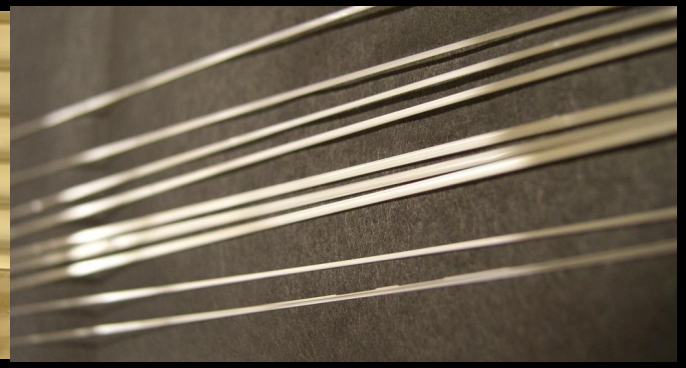


New technology

Breakthrough in preform manufacturing







Before vs. Now with SYGLASS

- Cost of manufacturing: 10 000 EURO;
- Lead time: 3 months
- High risk of mistakes and delays;

- Cost of manufacturing: < 1000 EURO;
- Lead time: 2 weeks
- Automatic, controlled proces;

Solution: SYGLASS

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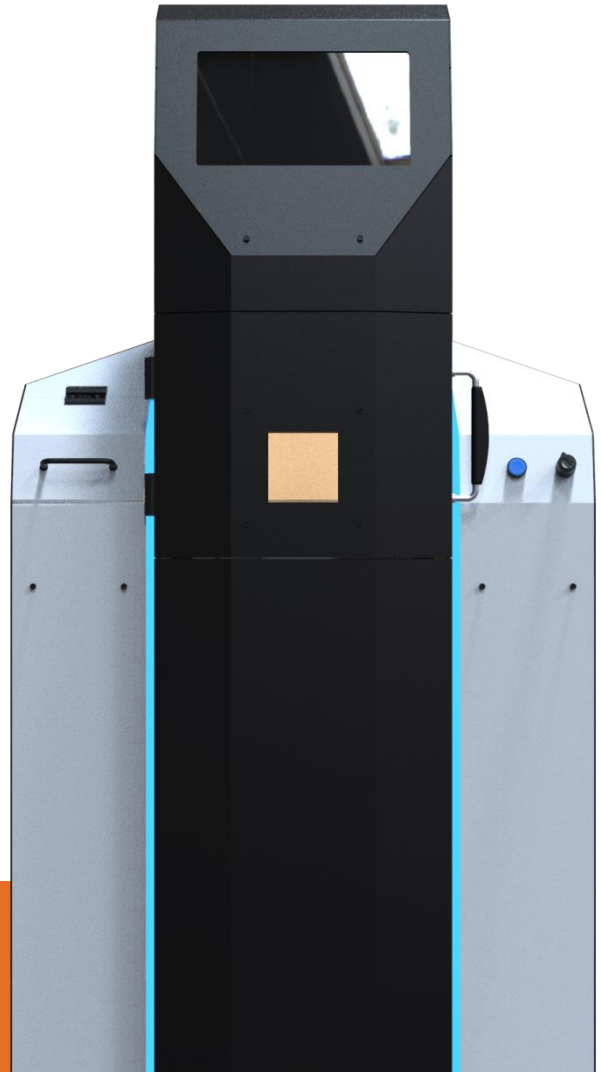
– direct ink writing 3d printing technology along with the SYGLASS 3D printer automates preform making by directly deploying melted glass in the desired pattern

Features:

- Printout using glasses including silica;
- Heated chamber and printing bed;
- 3D printing with clean custom glass (made by client or us) without the need for post-processing or multi-stage prints;
- Working area 25 x 10 x 10 cm;
- Precise temperature control of glass, table and chamber;
- Pneumatic retraction;
- Printing from two printheads and two types of glass in one process.



Total print time: up to 24h
The entire process requires only a single worker to operate the machine

Loading preform schematic to the SYGLASS software and setting parameters

Prepping and warming up the machine

Printing PREFORM

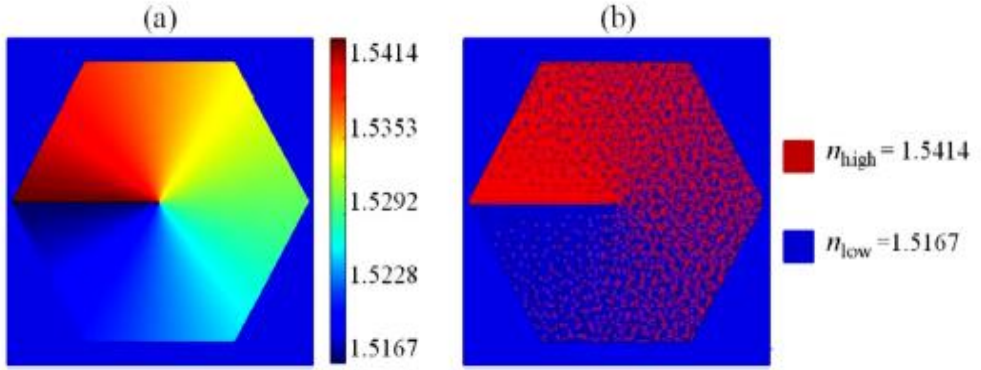
Cool down

Take out ready preform!

SYGLASS

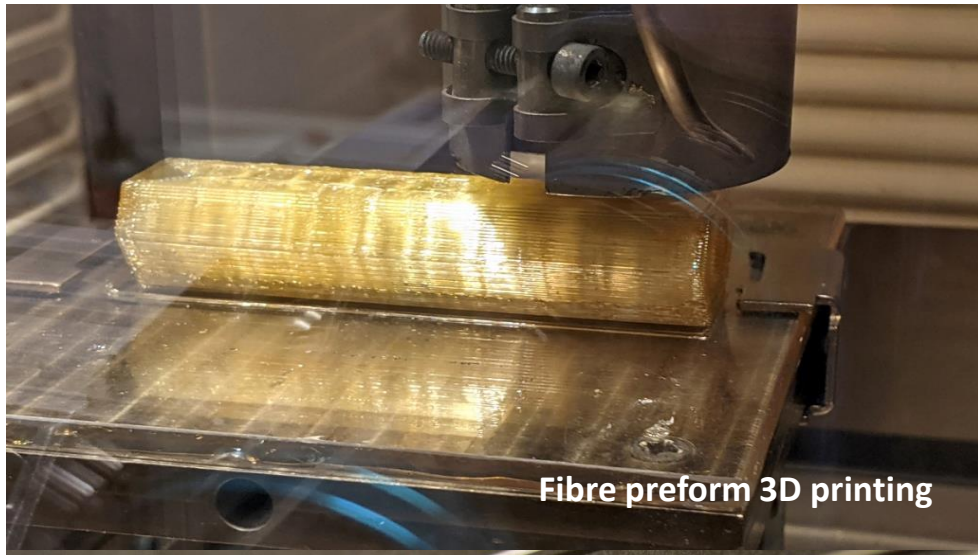
Military applications

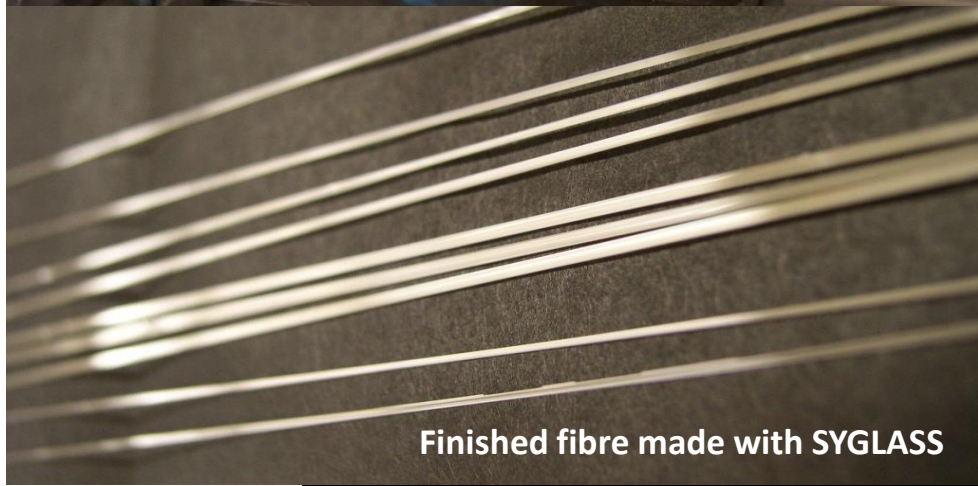
Advanced photonic based solutions finally possible with SYGLASS:



1. High-bit secure and fast data transmission with vortex beam converter

- Special light converting elements allow spinning photons,
- Transmitted signals are impossible to read for the enemy,
- Works both with fibre optic cables and LiFi communication system.


Fibre preform 3D printing


Finished fibre made with SYGLASS

Military applications

Advanced photonic based solutions finally possible with SYGLASS:

2. Optical sensors for detection of laser targeting units on the battlefield.

- Fast response time and reliable detection,
- Fibre optic nanostructures with mid-infrared sensing domain not available anywhere else,
- Rapid change of materials and designs to respond to enemy tracking methods and manufacture thousands of optical elements at a fraction of the cost.

3. Lightweight remote sensors.

- Successful in harsh environments due to their high sensitivity, wide bandwidth, high operation temperature, immunity to e/m interference, lightweight and long life.
- Bio-sensors working in mid-infrared for poisonous gasses detection.

Fibre optic drawing tower
– one of 6 machines needed for fibre manufacturing

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Knowledge has layers™

www.syglass.sygnis.pl

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