



Advancing industries through innovative, reliable  
and affordable femtosecond lasers



## The latest frontier

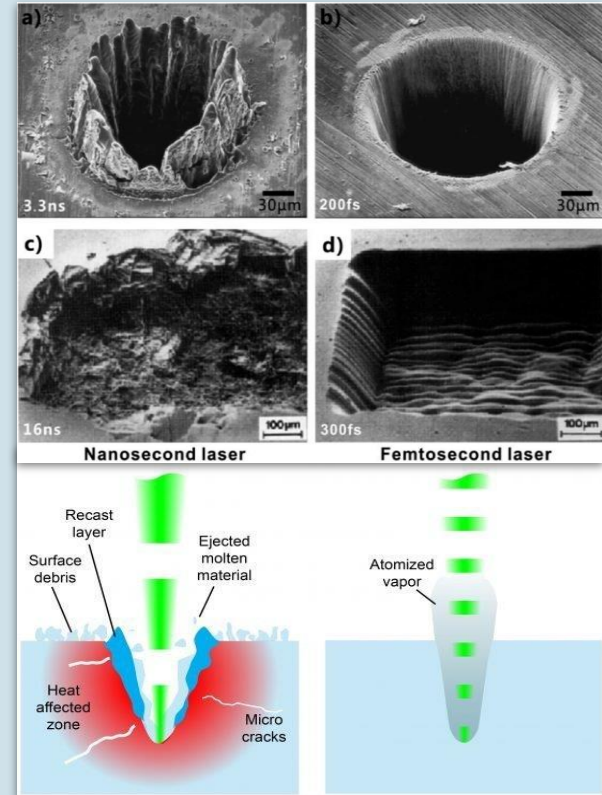
**Femtosecond pulses are the latest frontier tool in industrial manufacturing and medical treatment and diagnostics. Fundamentally, pulses this short enables applications not possible before.**

**To bring reliable femtosecond lasers to many more labs, factories and clinics we have to decrease the cost of ownership of laser systems by an order of magnitude by 2035.**

# Femtosecond laser capabilities vs. “old school” nanosecond lasers

## Unique capabilities:

- Possibility of microfabrication (very small feature size)
- Processing of transparent materials
- Fabrication of 3D nanostructures
- Creation of metasurfaces
- Deep imaging of biosamples



# Femtosecond laser applications

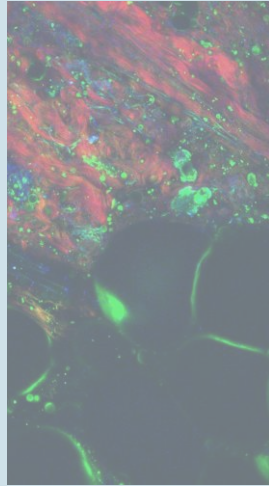
Focus on six application areas:



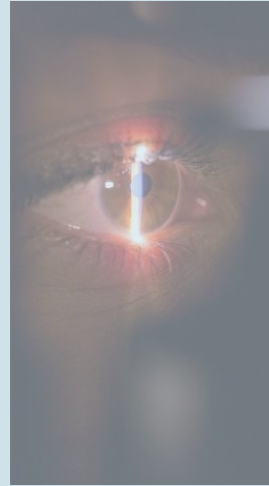
**Materials microprocessing**  
Surface structuring, drilling, athermal ablation, black marking



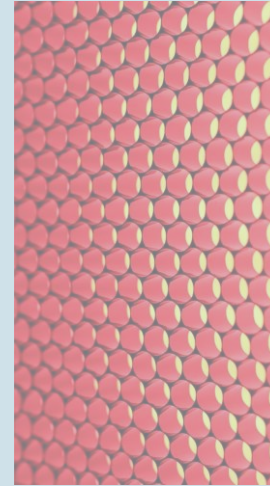
**Semiconductor and electronics**  
Wafer processing and inspection, Flex PCB processing, VIA drilling



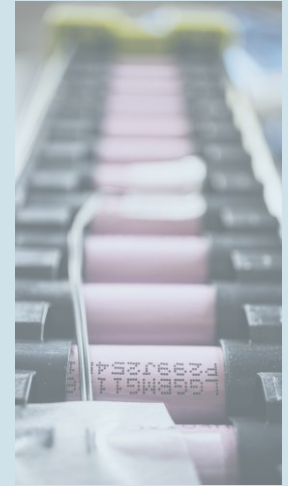
**Nonlinear microscopy**  
Label-free and two-photon spectroscopy, OCT imaging



**Ophthalmology**  
Cataract (FLACS), refractive correction (bladeless LASIK, SMILE)




**Display manufacturing**  
OLED cutting, array repair, laser lift-off, glass cutting, sapphire scribing



**Battery manufacturing**  
Electrode cutting, microstructuring, annealing

# Team



 **Nick Gavril**  
CEO & Co-founder

A team leader with 15+ year track record in fiber optic component engineering, sales, biz dev. Avid ice bather & cyclist.



 **Nerijus Rusteika**  
CTO & Co-founder

Distinguished engineer, past 10 years spent building state of the art lasers. Holds PhD in Physics. Applied Sci-fi practitioner.



 **Jaroslav Kodz**  
Head of Sales & Co-founder

17-year track record in laser engineering, product management and sales. Plays five musical instruments.



 **Kestas Regelskis**  
CSO & Co-founder

Physicist with 20-year research experience, author of 15 patents and 30 scientific publications. Roller skater.



 **Vytautas Kaminskas**  
CFO


Over 10 years experience in finance and consulting. Holds FCCA. Cross country skier.



 **Viktorija Vysockaja**  
Head of Marketing


Experienced marketer in brand building, customer acquisition and cross-functional collaboration. Yoga practitioner.



 **Ildar Galin**  
Head of Laser Systems Development

Experienced in design and development of optical devices. Holds a PhD in Optics. Coral preservationist.



 **Laurynas Veselis**  
Head of Optical Design

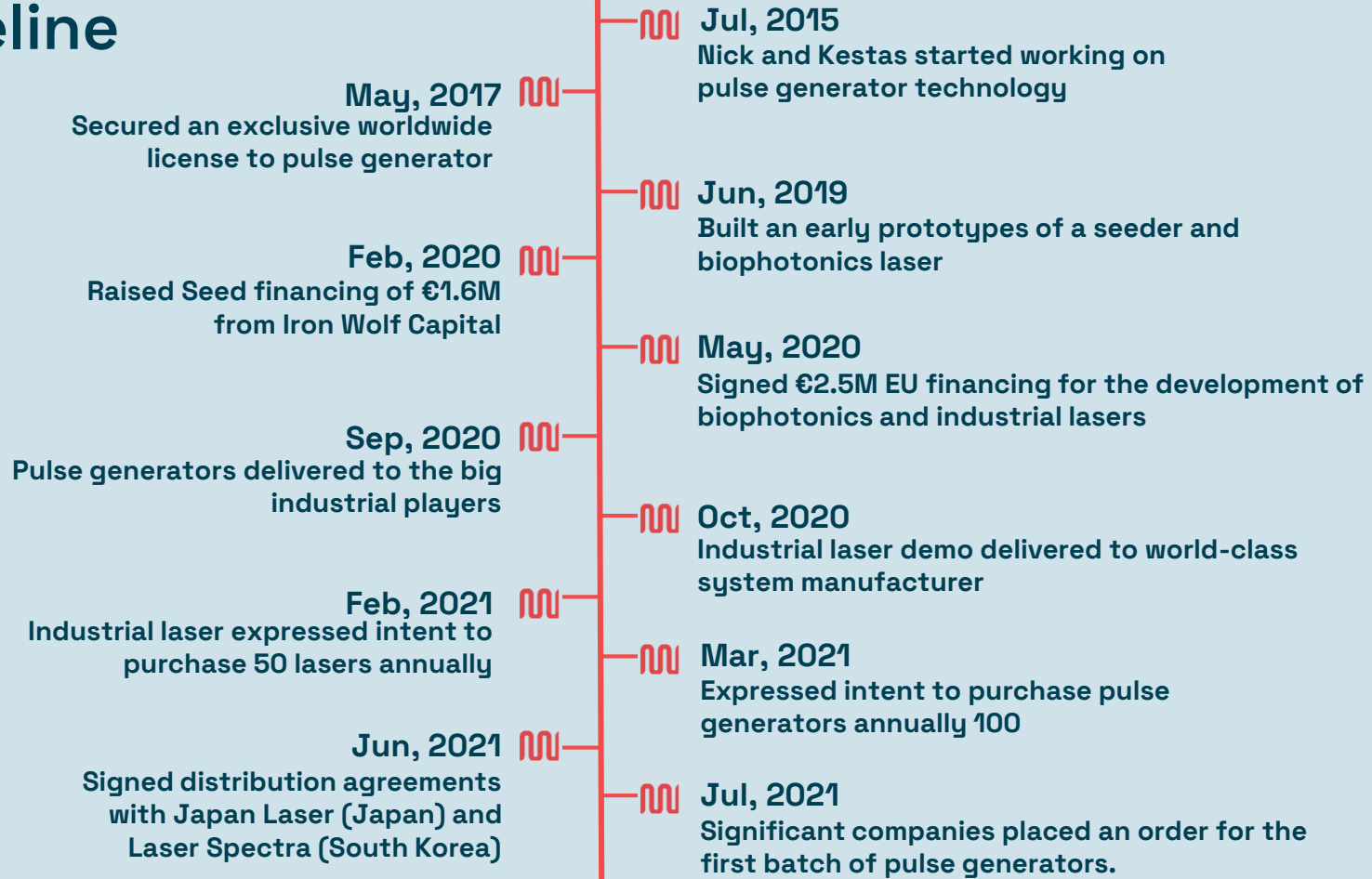
Experienced engineer, focusing on free space laser modelling, design and testing. Never drove anything other than a BMW.

24 employees

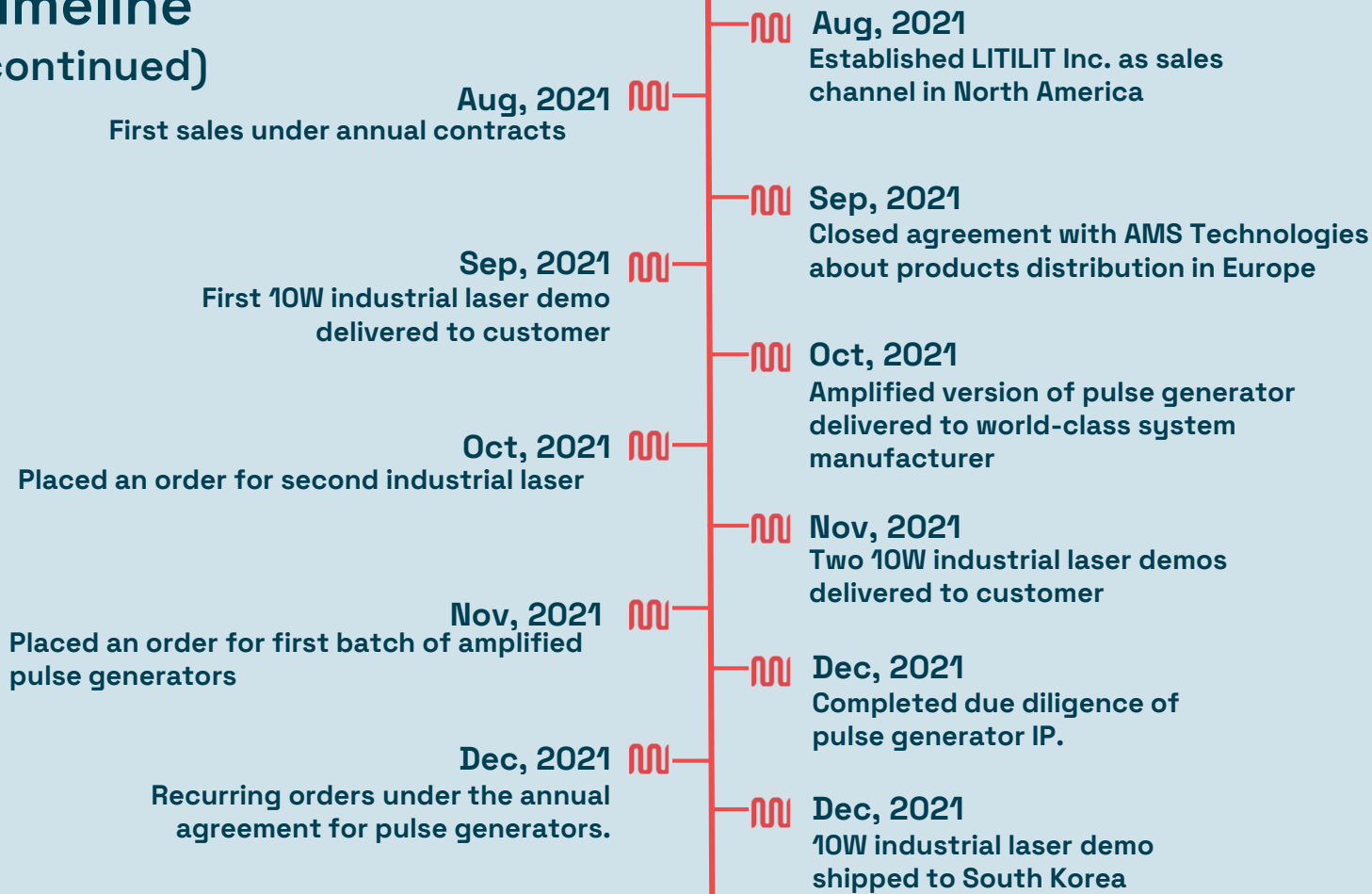
8 PhDs

3 Countries

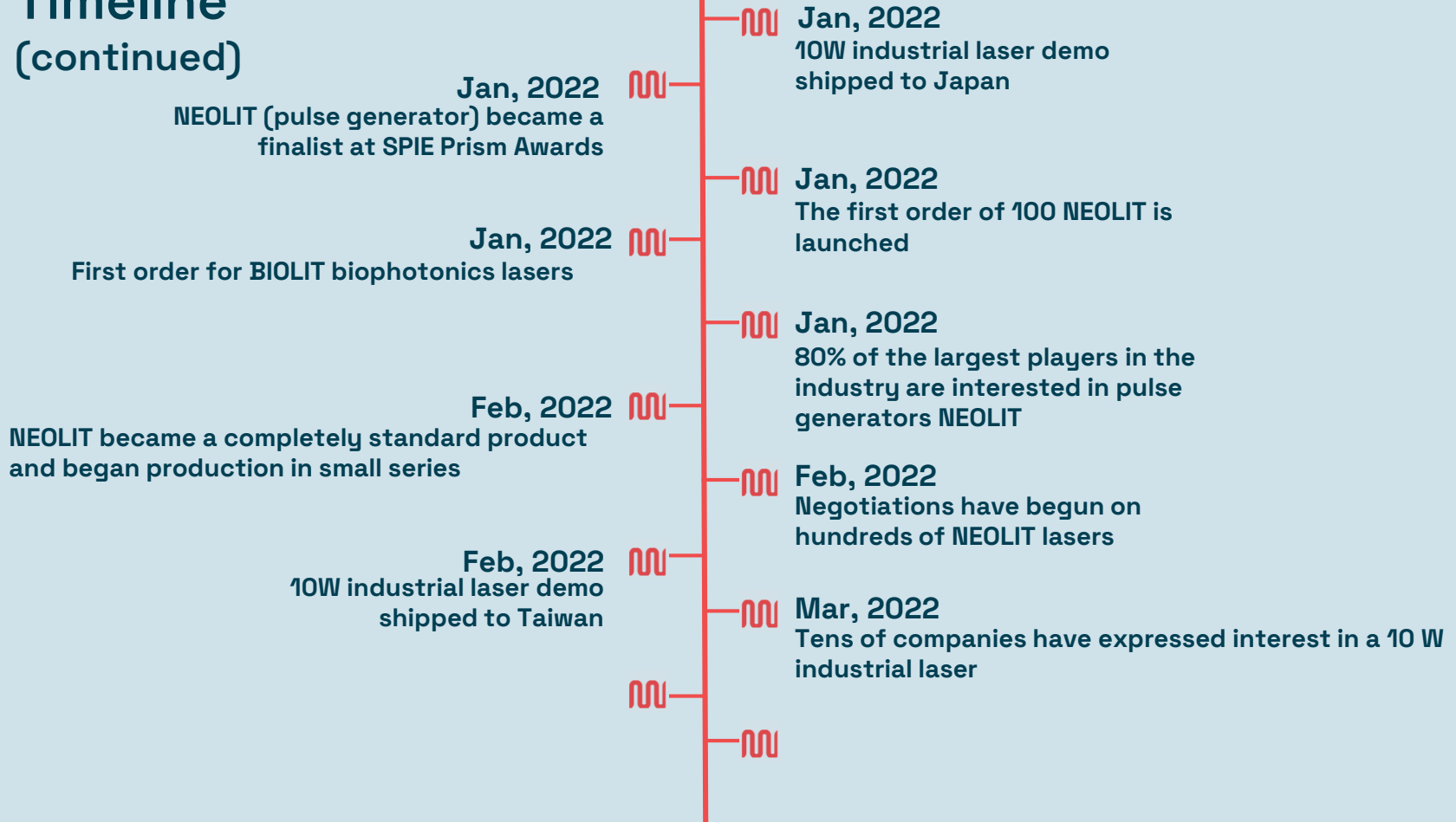
# Timeline



# Timeline (continued)



# Timeline (continued)







# Industry's challenges

Femtosecond laser is an enabling tool for many industrial, medical and research applications. Despite this, adoption is still low, limited by key factors:

## High acquisition cost

- Depending on application, laser system can be purchased for €50k-€200k.
- Many industrial use cases become economically viable at lower cost.

## Poor reliability

- Fiddly devices requiring attention and care – a far cry from industrial equipment.
- Attention and care can be purchased through annual service contract for €5k-€10k.

## Integration complexity

- High entry-barrier for OEMs. Integration and operation requires a high degree of knowledge. PhD in Physics is a must.



## The Solution

# Industrial-grade laser design & production platform

All-digital system  
design and  
engineering

Scalable,  
reproducible  
manufacturing

Patented  
disruptive  
technology  
innovation

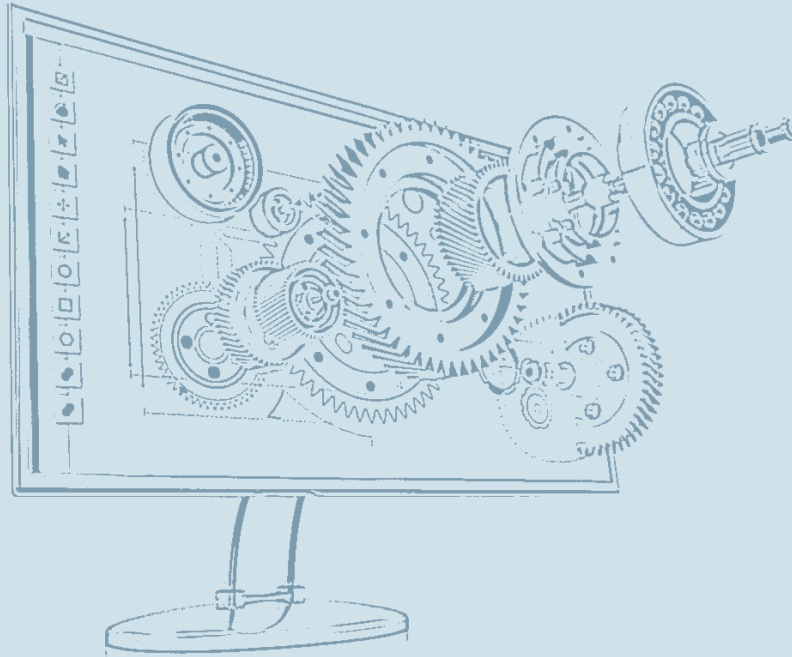


## The Solution

**Industrial-grade laser design  
& production platform:**

**All-digital systems  
design and engineering**

- Proprietary process utilising multiphysics modelling and simulation software
- Confirmatory vs. exploratory prototypes
- Up to 6x faster development from idea to prototype



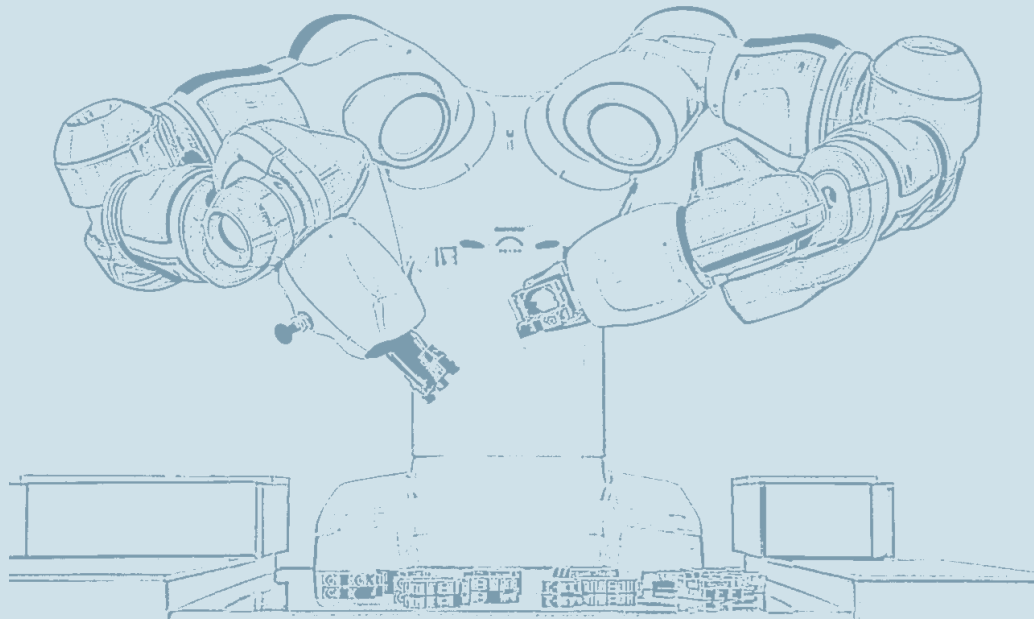


## The Solution

**Industrial-grade laser design  
& production platform:**

**Scalable, reproducible  
manufacturing**

- Robotised pick-and-place assembly and alignment ensures reproducibility and optimises production yield
- Up to 10x decreased cycle time cuts productions costs



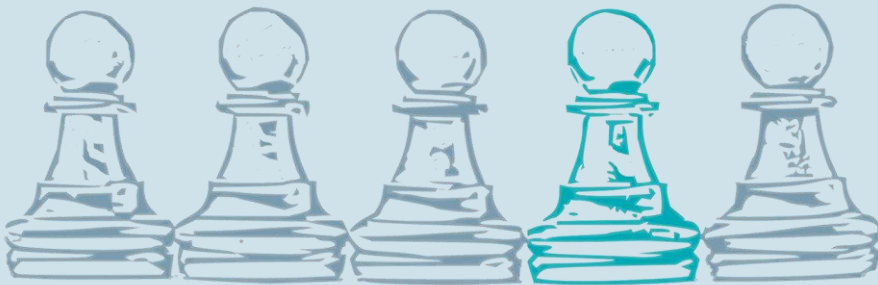


## The Solution

**Industrial-grade laser design  
& production platform:**

**Patented disruptive  
technology innovation**

- Reduced cost and maintenance (pat. worldwide)
- Highest optical rigidity and thermal performance
- Best stability in the industry
- Increased fault tolerance, reduced operating costs



# New generation femtosecond lasers

*All the major players in the industry have ordered and validated this technology and our product.*

## Indylit

for microprocessing



*Comparable with industry leaders. Parameters better or equal.  
Price near 50% less*

- Extremely robust and stable
- High pulse energy and clean pulse shape
- Maintenance-free & turn-key

## Biolit

for biophotonics



- Very short and clean pulses
- Robust and stable
- Flexible repetition rate optimized for multiphoton microscopy

## Neolit

for laser seeding

*Prism  
Award  
Finalist!!!*



- No consumable components
- Robust to external disturbances
- Very high quality pulses and spectrum



# Product roadmap



## Pulse generator

Critical OEM component  
1030-1064nm, 1-5mW, 1-5ps



## Biophotonics

OEM component  
1050nm, 2W, 70fs, 20MHz

Cancer screening  
900-1300 nm Tunable, 300 mW, 30fs, 20 MHz

2021

Q2

Q3

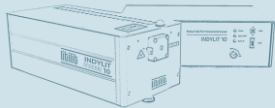
Q4

2022

Q2

Q3

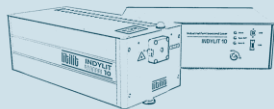
Q4



## Industrial & Medical

Sapphire cutting, black marking  
SHG option, 6W/12W

Ophthalmic surgery  
1030nm, 6W, 20uJ, 300fs



## Industrial high power

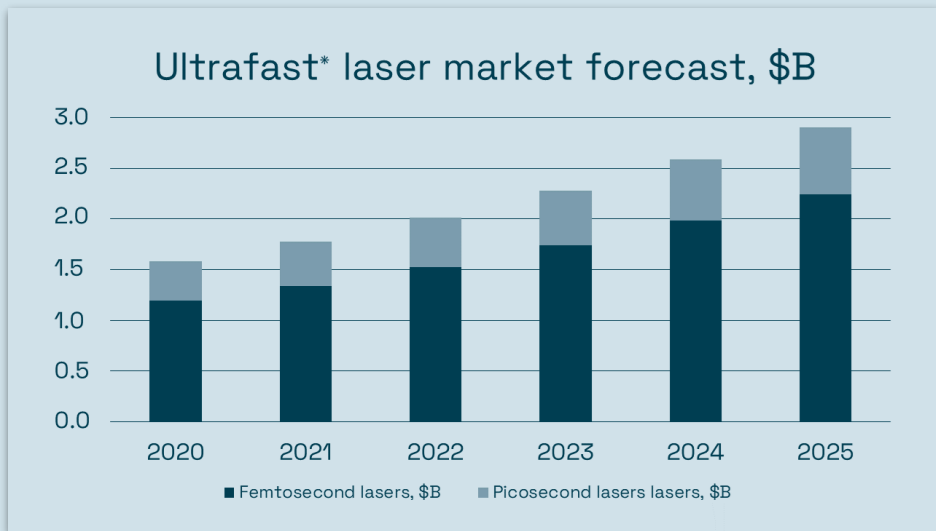
Battery, Flex PCB, photovoltaics  
1030nm, 60W, 200uJ, 500fs

Smartphone manufacturing  
SHG option, 30W

OLED cutting  
THG option, 20W

TBD  
High power >100W  
>30W UV

# Market primed for growth



\*Ultrafast lasers are lasers emitting ultrashort pulses, i.e., pulses with picosecond or femtosecond durations.

Volume growth opens up opportunities for new entrants bringing scalable and cost effective technology innovation.

## Maturing technology stack

- Femtosecond systems started migration from academic labs to industrial applications.
- Demand for systems suitable for industrial environments arrived at inflection point.

## Market forces demanding efficiency gains

- Pressure on OEMs to deliver increased productivity, technology readiness and reduce TCO.
- Increasing automation and connectivity (i.e. Industry 4.0, Robotization, Smart factory, IoT, AI).

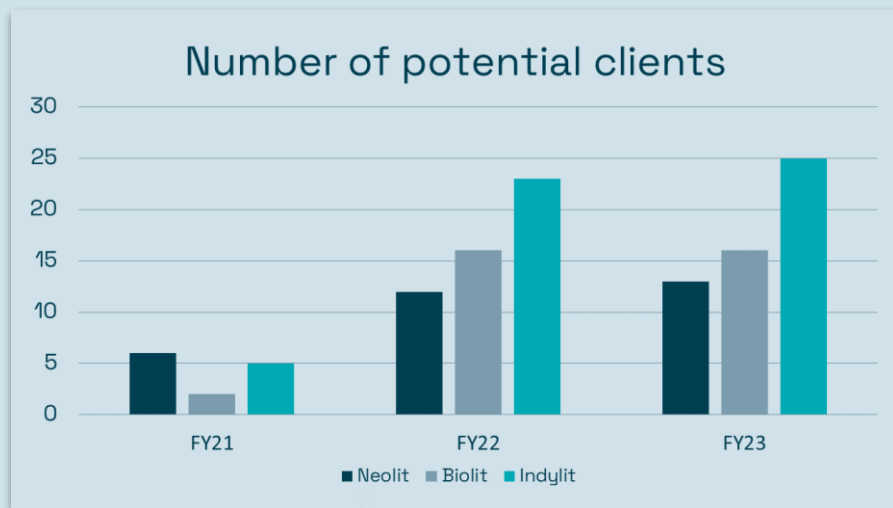
## Displacing longer pulses, enabling new applications

- Displacing nano- and pico-second systems for improved quality in certain applications.
- New applications enabled by increased femtosecond systems affordability.





# Sales pipeline



	FY20	FY21	FY22	FY23
<b>Europe Middle East</b>	46	130	1,687	5,877
<b>Asia Pacific (excl. JP/CH)</b>	0	59	232	905
<b>China</b>	6	4	201	867
<b>Japan</b>	0	119	756	2,557
<b>North America</b>	0	273	1,527	3,186
<b>Total (kEUR)</b>	52	586	4,403	13,392
<b>Factor</b>	1	11	7,5	3.0

# Revenue forecast

*Sales Pipeline conversion in real revenue is 71%!!!*

	2020	2021	2022	2023	2024	2025
<b>Pulse generators</b>	12	90	287	439	743	1,184
<b>Biophotonics</b>	40	38	303	767	1,239	2,076
<b>Industrial</b>	-	215	1,252	2,871	5,488	9,201
<b>Adv. biophotonics</b>	-	-	231	1,187	3,285	6,637
<b>Adv. industrial</b>	-	-	180	1,192	4,986	10,691
<b>High power industr.</b>	-	-	-	240	880	2,456
<b>Total (kEUR):</b>	<b>52</b>	<b>420</b>	<b>2,253</b>	<b>6,696</b>	<b>16,621</b>	<b>32,245</b>
<b>Factor</b>	<b>1.00</b>	<b>8.00</b>	<b>5.36</b>	<b>3.00</b>	<b>2.48</b>	<b>1.94</b>



## Join us

Join the opportunity to ride the wave of 21st century technology transformation.

We're raising equity financing to:

- **expand sales & distribution network**
- **increase production capacity**
- **accelerate product development**



**Nick Gavril**

**Co-founder & CEO**

- 🐦 [@lilit](#)
- ☎ [+370 611 53788](tel:+37061153788)
- ✉ [nick.g@lilit.com](mailto:nick.g@lilit.com)
- 🌐 [linkedin.com/in/nick.g](https://linkedin.com/in/nick.g)

# Appendix A - Patents

