



**LATVIJAS  
UNIVERSITĀTE**  
ANNO 1919

UNIVERSITY OF LATVIA



**FOTONIKA-LV**  
NATIONAL SCIENCE PLATFORM AT THE UNIVERSITY OF LATVIA

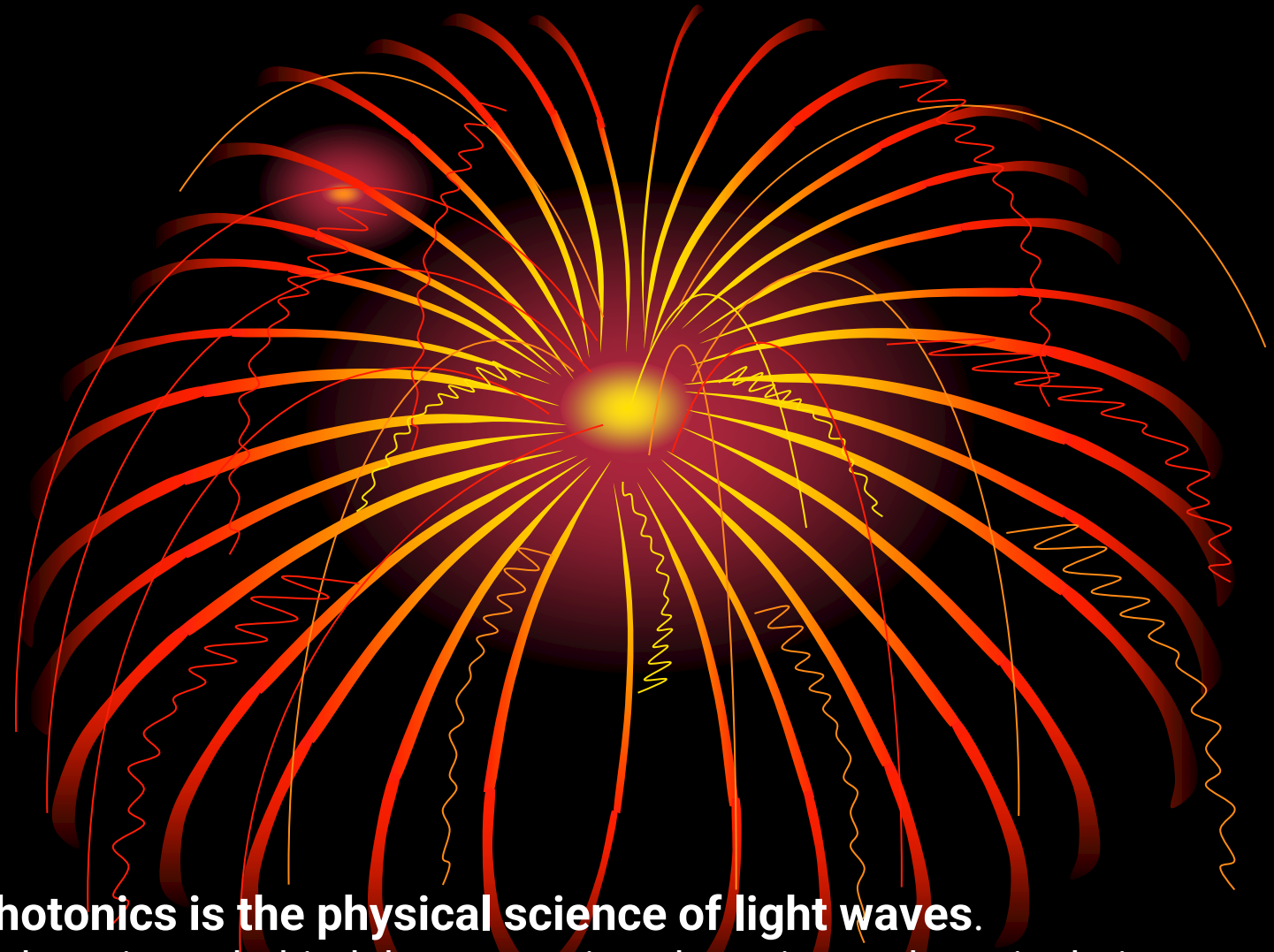
**Exclusive for U.S.-Latvian Business Forum**

**September 19, 2022**

**Arnolds Ūbelis, sci.secretary**

**<http://fotonika-lv.eu/>**

Riga  
**Photonics**  
Centre



**Photonics is the physical science of light waves.**

It deals with the science behind the generation, detection and manipulation of light. Light has a dual nature known as the wave-particle duality. That is to say that light has characteristics of both a continuous electromagnetic wave and a particle (photon).



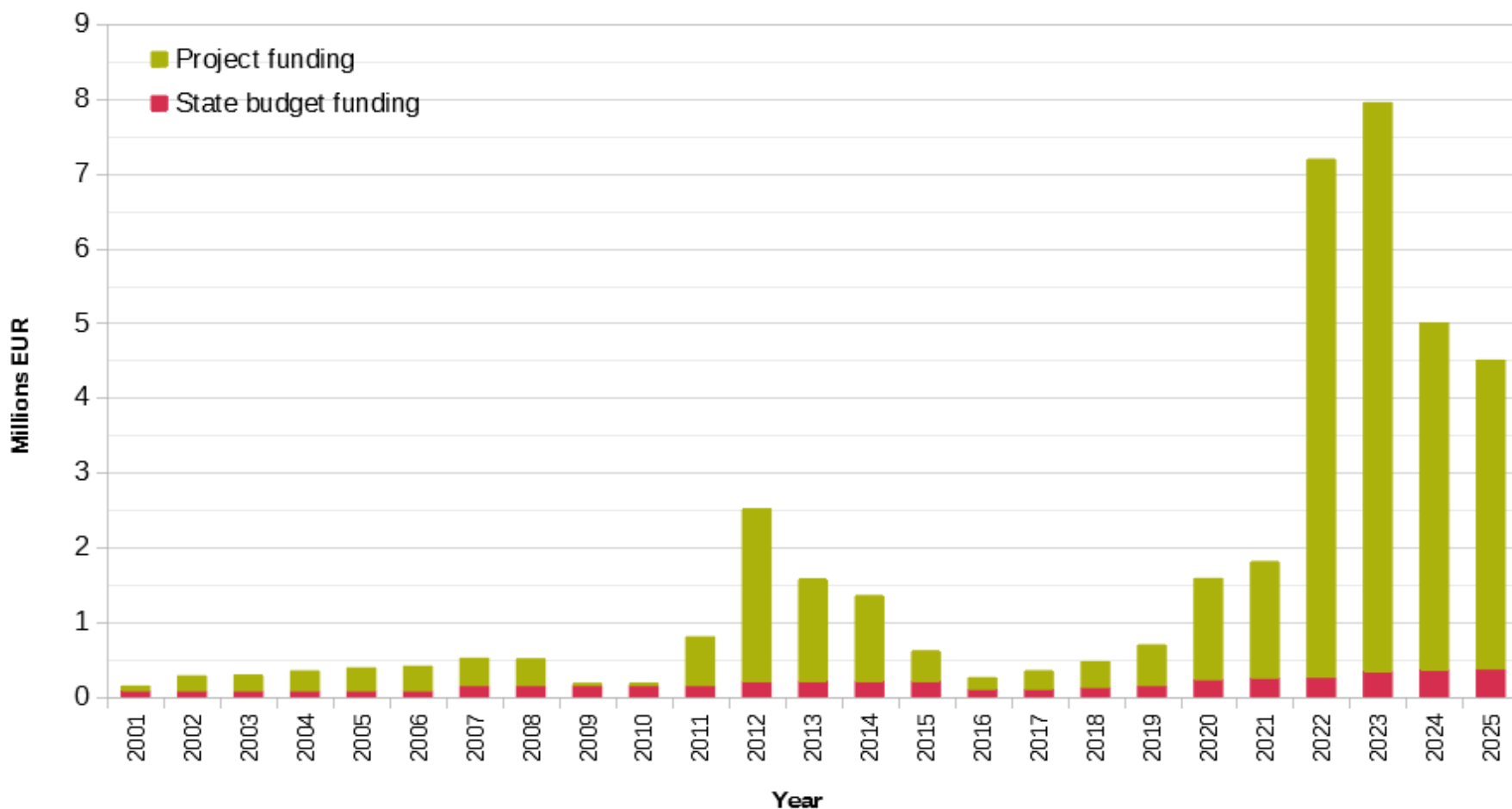
**The relevance and significance of photonics has been astutely summarized by the Former Parliamentary Under Secretary of State for Science and Innovation in the UK, Lord Sainsbury of Turville, who said on July 13, 2006:**

***...the impact of photonics in the 21st century will be as significant as electronics was in the 20th, or steam in the 19th...“***

**PHOTONICS: A UK STRATEGY FOR SUCCESS [www.berr.gov.uk/files/file39193.pdf](http://www.berr.gov.uk/files/file39193.pdf)  
[www.dti.gov.uk/.../ukphotonicsstrategy](http://www.dti.gov.uk/.../ukphotonicsstrategy)**



**NSP FOTONIKA – LV** is the National Science Platform of the University of Latvia created in 2018 as a center of excellent research in the EU Research Area  
**Substantial Financing is coming from EU projects**





# NSP FOTONIKA-LV

Partnership with tech industry

Club of SMEs in Latvia

**Annual turnover, M€ of research driven SMEs in area of photonics (2011-2022)**

**a) The first line- 40 photonics SMEs b) The second line - 15 optics SMEs**

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2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
63,435	75,317	91,565	98,901	111,825	117,325	145,561	165,457	181,95	200,401
16,13	17,785	19,696	21,789	23,972	26,075	28,953	32,147	35,476	31,531
79,565	93,102	111,261	120,69	135,797	143,4	174,514	197,604	217,426	231,932
<b>Annual Growth rate</b>									
	2012	2013	2014	2015	2016	2017	2018	2019	2020
	17%	20%	8%	13%	6%	22%	13%	10%	7%



## **Partnership with Largest Tech Companies**

**Ceram Optec, Ltd.; <https://www.ceramoptec.com/>**

**HansaMatrix, AS (former name: Hanza elektronika SIA), <http://www.hansamatrix.com/>**

**HansaMatrix Ventspils, SIA**

**HansaMatrix Innovation, SIA**

**LIGHT GUIDE OPTICS INTERNATIONAL, Ltd.;**  
**(former name: Z-LIGHT Ltd.), [www.Z-Light.lv](http://www.Z-Light.lv)**

**GroGlass, Ltd., <http://www.groglass.com/>**

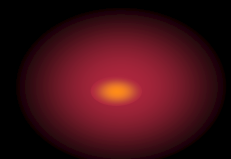
**Baltic Scientific Instruments, Ltd., [www.bsi.lv](http://www.bsi.lv)**

**ISP Optics Latvia, Ltd.; [www.ispoptics.com/](http://www.ispoptics.com/)**

**Biosan, Ltd, [www.biosan.lv](http://www.biosan.lv)**

**"Sidrabe Vacuum",Ltd., Former: Sidrabe, joint-stock company <http://www.sidrabe.com/>**

**RD Alfa mikroelektronikas departaments, Joined Stock company,<http://rdalfa.lv/>**







Latvijas Universitātes  
ATOMFIZIKAS UN SPEKTROSKOPIJAS INSTITŪTS

## Kvantu optikas laboratorija

Nobalsots par dibināšanu LU ASI vadības sēdē 2013.12.

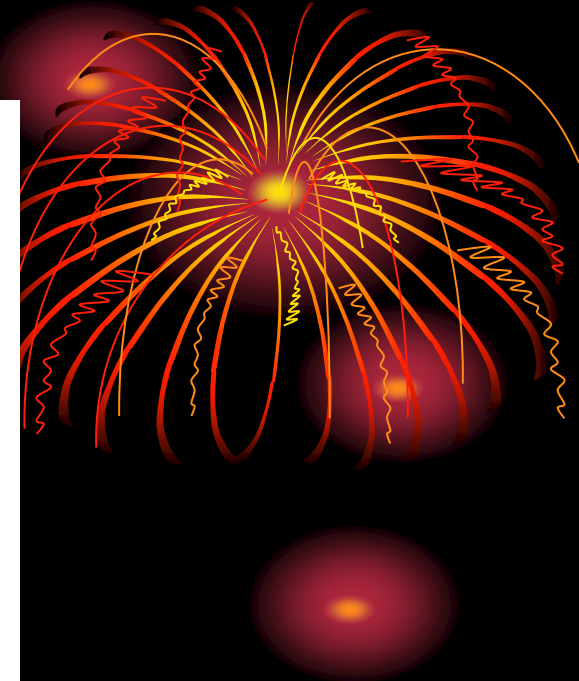


Foto: Jānis Alnis , Aigars Apsītis, Ilja Feščenko , Inga Brice.

Artūrs Vrubļevskis, atgriezies LV pēc studijām MIT.

Jāzepts Rutkis, 2.kursa fizikas bakalauru students.

**Quantum Optics Laboratory  
at  
University of Latvia's  
Institute of Physics & Spectroscopy**





**THANK YOU FOR YOUR ATTENTION**