

The background features a dark blue gradient with a starry pattern. On the left side, there are several overlapping circular elements. A prominent one is a large circle with a scale around its perimeter, ranging from 140 to 260 in increments of 10. Other circles are smaller and some have dashed lines or arrows, suggesting a technical or scientific theme.

RIGA PHOTONICS CENTRE

PARTNERED TO ADVANCE SUSTAINABLE DEVELOPMENT
ON EARTH AND BEYOND

HISTORY OF RIGA PHOTONICS CENTRE

- Founded July 2015 to continue services to photonics research and industry and related public education and outreach in the 4 million Euro EU funded FOTONIKA-LV photonics capacity building project 2012-2015.
- Vision – drive building of a billion-euro photonics industry in Latvia supported by world class research. The Photonics industry exceeded 200 million euro turnover in 2020. with >15% average growth from 2011 to 2020
- RPC needed funding for a staff of 3-5 specialists to advance a national photonics strategy, with travel budget and access to funding for innovation projects to drive the vision.
- Until 2020 the potential for a billion-euro photonics industry was not recognized by the Latvian government and no funding was secured by RPC. A government supported photonics and smart materials cluster comprised of photonics companies that RPC has worked with is emerging but not coordinated by RPC as was anticipating when RPC was founded.

LOST PHOTONICS OPPORTUNITIES

- Latvia's failure to support photonics as a priority resulted in lost opportunities. One example – free space laser communications.
- Latvian startup HEEPhotonics, had mastered technology for laser positioning, by developing mobile satellite laser ranging stations. This makes possible laser communications between drones and base stations, satellites and ground stations and between satellites. This is a billion-dollar opportunity.
- HEEPhotonics submitted a project to the Horizon 2020 EU research funding program for SMEs and was rated as excellent – qualified for funding. The funding for the program was limited, so many excellent projects were not funded. HEEPhotonics received a Seal of Excellence, recognition that it had a fundable project. About the same time, Mynaric, a spin-off from the German space agency DLR received 30 million euro investment. I have seen a technical analysis comparing Mynaric to HEEPhotonics showing that at the time (2017) HEEPhotonics was rated better.
- Given a professionally staffed, photonics cluster support organization this billion dollar and other opportunities would not have been lost.

PHOTONICS INDUSTRY PROSPECTS

- World markets for photonics technologies are expected to continue strength growth to 2030 and beyond.
- Now that photonics is recognized as a priority by the Latvian government attaining billion euro turnover by 2030 for the sector remains in reach.
- RPC continues to work with photonics companies and research institutes in Latvia and could assist American investors in identifying promising opportunities in Latvia.
- Key to a billion euro future will be strengthening education at all levels to broaden STEM education particularly physics and mathematics. The greatest barrier to contined growth is the limited number of trained specialsts. This is an exceedingly tough challenge with continued out-migration from Latvia.

FUTURE RPC DEVELOPMENT

- RPC is a not-for profit member organization with 27 members holding PhD degrees and significant achievements in research and industry. In 2021 the membership of RPC approved a new strategy to build a research-driven organization that builds on the skills, experience and connections of the members to advance science-based development in Latvia broadening the focus beyond photonics.
- In 2021 RPC began exploring international opportunities through partnerships first responding to the Center for Photonics and Smart Materials (CPSM) at [Zewail City of Science and Technology](#) in Egypt. Work on defining joint projects continues.
- In early January 2022 RPC was invited to participate in the 11th ANSOLE (African Network for Solar Energy) conference on February 4. RPC sponsored two Ukrainian scientists working on advanced solar collector technology and also secured the participation of the Institute of Solid-State Physics of the University of Latvia qualifying RPC to become an Institutional Member of ANSOLE.
- RPC offered the conference theme «Electrify Africa 2030» and prepared the Declaration of the Conference that was conveyed to the African Union - European Union Summit held on February 17-18 in Brussels.
- This communication led to an invitation to prepare a session at the [Science Summit](#) at the UN General Assembly

RPC HAS ORGANIZED 6 SESSIONS AT SSUNGA77

- 21. September "[Pan-African initiative to build research and innovation capacity to achieve SDG7 for Africa](#)"
- 26 September "[Recasting Space Agenda 2030](#)"
- 26 September "[Space science, technology and sustainable civilian development](#)"
- 28 September "[Prospects for Latvian space science and technology to fulfill UN Space Agenda 2030](#)"
- 30 September "[Managing use of peatlands in Latvia to meet UN sustainable development goals and achieve carbon neutrality by 2050](#)"
- 30 September "[Recovery of Ukraine's science and innovation capacity after the Fossil Fuel War](#)"

PAN-AFRICAN CAPACITY BUILDING

- This session is built around the ANSOLE Energy [Compact](#) with the UN program to achieve universal access to modern energy by 2030 developed in partnership with RPC.
 - Currently 600 million people in African do not have access to electricity.
 - Based on present trends the IEA forecasts that by 2030 600 million people in Africa will still not have access
 - The Energy Compact program is aimed at mobilizing financing, people, and support from governments to achieve universal access to electricity by 2030.
- Currently, a priority for ANSOLE is green hydrogen. A decentralized, biomass to H2 technology developed by Indianapolis-based Lugar Center for Renewable Energy is seen as promising for Sub-Saharan applications
- Billions in sustainable development opportunities in Africa exist in Africa that the ANSOLE Energy Compact can open.