LATVIJAS UNIVERSITĀTE
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FOTONIKA-LV
LATVIJAS UNIVERISTĀTES NACIONĀLĀ ZINĀTNES PLATFORMA

The 3rd International Conference FOTONIKA-LV

"Achievements and Future Prospects"

Four years after the end of the project:

FP7-REGPOT-2011-1, No 285912, FOTONIKA-LV
"Unlocking and Boosting Research Potential for Photonics
in Latvia – Towards Effective Integration in the European Research Area"

Riga, 24–25 April 2019

Riga, 2019

ERA Chair in Quantum Optics and Photonics.

Project proposal to H2020-WIDESPREAD-2019-4 call

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Horizon 2020 has a dedicated work programme "Spreading Excellence and Widening participation" [1] to support low-performing Member States and Associated Countries of European Union to increase their excellence in research and innovation by networking with high-performing research institutions and SMEs, recruitment of high-quality human capital and an update of a research infrastructure. This support is expected to complement initiatives funded with European Structural and Investment Funds (ESIF), and the implementation of Smart Specialisation Strategy of the region (Latvia is one region).

Horizon 2020 call "ERA Chairs" (WIDESPREAD-04-2019) aims to attract high-quality human capital – the ERA Chair holder and his/her team – to the applicant institution and perform structural changes of the Institution to achieve its excellence on a sustainable basis. Expected impact of the call:

- institutional changes within the ERA Chair host institution allowing for its full participation in the European Research Area (ERA);
- increased attractiveness of the institution for internationally excellent and mobile researchers;
- increased research excellence of the institution in the specific fields pursued by the ERA Chair holder with results demonstrated quantitatively and qualitatively through indicators such as expected future publications in peer reviewed journals, collaboration agreements with businesses, intellectual property (patents), new innovative products or services;
- improved capability to compete successfully for internationally competitive research funding.

University of Latvia (LU) prepared the proposal for the "ERA Chair" call – titled "ERA Chair in Quantum Optics and Photonics", No. 857624, acronym Quantum-LV with the aim to boost the performance of LU in the field of quantum optics, photonics, atomic and molecular physics. Currently LU has 13 labs and more than 50 active researchers in this field whose contribution to ERA has not been fully realised. The project anticipates recruiting an excellent researcher / manager – the ERA Chair holder – and his/her team, who will produce high quality research papers, proposals and patents, and who will inspire and empower the community of LU researchers in quantum optics field to highest performance.

Quantum-LV project's proposal was evaluated above the threshold (11.5) yet failed to be funded by Horizon 2020. In 2017 the Cabinet of Ministers of Latvia determined that such highly ranked ERA Chair project could be funded through European Regional Development Funds (ERDF) in Latvia that created the opportunity to finance the Quantum-LV project under the activity 1.1.1.5 [2]. Therefore, a proposal No. 1.1.1.5/19/A/003 "The Development of Quantum Optics and Photonics in University of Latvia" was submitted. The realisation period for the project is 01.05.2019–30.11.2023 and it will include all activities of the Quantum-LV proposal and reach impacts anticipated by the Horizon 2020 ERA Chair's call.

In July/August/September 2019 an open competition for the ERA Chair holder's position in LU will be announced on EURAXESS portal for EU and non-EU candidates to

apply in a global search. ERA Chair candidates should be "Established Researchers (R3)" or "Leading Researchers (R4)" with significant research and managerial experience. Candidates will be evaluated by the Selection Committee consisting of project's leaders, representatives of LU and international Advisory Board. The leader of the Advisory Board is Prof. Sune Svanberg, Doctor Honoris causa at the Lund University, at the University of Latvia, at the Université de Liège, at the Universidad Nacional de Engineria, Lima.

Specific outcomes of the Quantum-LV project are: 24 scientific publications; 2 patent applications; 6 project proposals (Horizon 2020 / Horizon Europe, ERDF and Latvian Council of Science projects); organisation of 2 international conferences; development of a course in quantum optics; development of a "Strategy for the Development of Quantum Optics and Photonics at the University of Latvia" including a "Strategy for human resources".

The ERA Chair holder will relocate to Latvia and will start to work in LU not later than in January 2020. An early task will be to define qualifications for 4 to 6 members of the ERA Chair team and candidate positions announced in the EURAXESS portal. The team will support the ERA Chair to achieve the expected results of the project including preparation of project proposals and research papers. It is expected that the excellence and reputation of the ERA Chair will attract top quality candidates with high potential for research performance.

The project supports visits to conferences, exhibitions and meetings as well as visits to external partners and incoming visits of external experts. Two international conferences in quantum optics related fields will be organised thus raising visibility of LU in the field and furthering participation in related research networks. Conferences will be combined with meetings of the Advisory Board where Quantum-LV project leaders will report on the progress of the project and will listen to the feedback.

The Quantum-LV project will be implemented within the framework of the Department of Science of LU by the National Science Platform (NSP) FOTONIKA-LV, which includes two field related labs from the Institute of Atomic Physics and Spectroscopy (LU ASI). The project aims to foster collaboration with industry in Latvia as well as in other countries as well as with other research institutions that work in the field of quantum optics. Close cooperation is anticipated with the Riga Photonics Centre, an NGO formed to advance photonics related research as well as manufacturing and other commercial activity involving photonics in Latvia.

(a) (b)

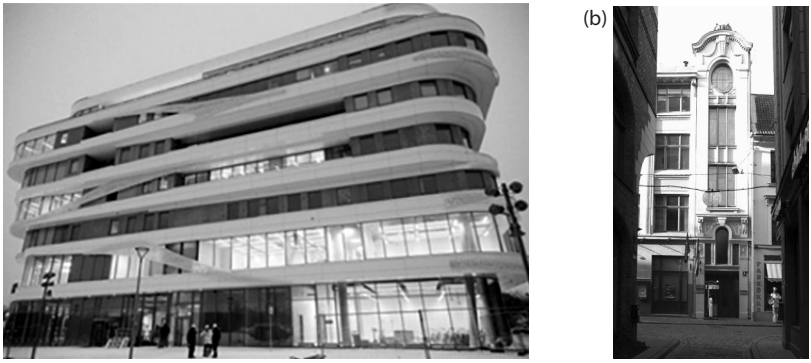

Figure 1. *(a) "Science Building" of University of Latvia (Jelgavas 3), (b) Building of the National Science Platform FOTONIKA-LV of University of Latvia (Šķūņu 4)*

The ERA Chair holder will have to decide on the workplace address for him/her and his/her team. Two possibilities are available – "Science building" in the new campus of LU, Jelgavas 3 (Fig. 1a), and the former building of LU ASI, Šķūņu 4 (Fig. 1b), which is the central building hosting NSP FOTONIKA-LV as well as the Riga Photonics Centre. The combination of them offers both a location at Riga's centre and superb space for development.

Quantum-LV project was developed to further advanced photonics in Latvia beyond what was realised through the implementation of FP7-REGPOT-CT-2011-1 project No. 285912 (2012–2015), coordinator – A. Ūbelis by the FOTONIKA-LV association consisting of LU ASI and Institute of Astronomy (IA). Recently NSP FOTONIKA-LV was founded as an open research platform of the University of Latvia to advance transdisciplinary research in photonics as a successor of the Association FOTONIKA-LV. At present the platform's research focus is quantum optics and no longer includes parts of the former association's institute members not oriented towards the research focus of the platform. NSP FOTONIKA-LV initiated Quantum-LV project development and will be responsible for implementation within the framework of the Research Department.

References

[1] Horizon 2020 Work Programme 2018–2020. 15. Spreading Excellence and Widening Participation.

[2] "Regulations Regarding the Implementation of the First, Second, and Third Project Application Selection Round for the Activity 1.1.1.5 "Support for International Cooperation Projects in Research and Innovation" of the Specific Objective 1.1.1 "To Increase the Research and Innovative Capacity of Scientific Institutions of Latvia and the Ability to Attract External Financing, Investing in Human Resources and Infrastructure" of the Operational Programme "Growth and Employment"", Cabinet Regulation No. 315, Adopted 6 June 2017, Latvia.