

# ELICSIR project

[www.elicsir-project.eu](http://www.elicsir-project.eu)

[www.elicsir.elfak.rs](http://www.elicsir.elfak.rs)

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VIDIS Project, Kick off meeting, 28.01.2021.

# Enhancement of Scientific Excellence and Innovation Potential in Electronic Instrumentation for Ionising Radiation Environments - ELICSIR



- Project started: 1 September 2019
- Duration: 36 months
- Extended for 6 months - most of the planned activities must take place live



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## Partners:

- Faculty of Electronic Engineering, University of Niš, Niš, Serbia - € 231 437,50
- Tyndall National Institute, University College Cork, Cork, Ireland - € 211 375
- IHP GmbH Institute for High Performance Microelectronics, Frankfurt (Oder), Germany – € 210 250
- University of Granada, Granada, Spain - € 138 750



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## Main goal of the project:

ELICSIR project is aimed at significant strengthening of the research and innovation capacity of the Faculty of Electronic Engineering (ELFAK), University of Nis, in the field of electronic instrumentation for radiation environments, namely radiation dosimetry and design of radiation hard electronics.



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## Main actions of the project:

- The project's main actions will include the transfer of skills through trainings and specialised courses, joint collaborations and the dissemination of project results. The project will also organise various networking initiatives on the local, national and European level.
- The main research is conducted in Applied Physics Laboratory:

[www.apl.elfak.rs](http://www.apl.elfak.rs)



Applied Physics Laboratory



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## **Actions of work plan:**

- short-term staff exchanges, organisation of summer/winter schools, attendance to specialised courses and joint experiments - particular emphasis to training of early stage researchers;
- joint collaboration after the project, establishment of links with a wide range of stakeholders;
- networking and knowledge transfer on local, regional and European level through organisation of workshops, conference sessions and a symposium, linking with related projects and joint visits to distinguished research labs
- dissemination of project results targeting wide scientific community;
- outreach activities for general public in relation to significance of the proposed research;
- enhancement of the educational potential - knowledge transfer to MSc and PhD students



## Work packages:

- WP1: Staff and students training
- WP2: Establishment of sustainable collaboration
- WP3: Boosting of networking capacity
- WP4: Dissemination, outreach and exploitation
- WP5: Project management



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# Problems in the realization of the project due to COVID-19



## Many activities were planned to be held live!

- For example, budget for travel and subsistence expenses for ELFAK is 71 000 EUR

## One of planned live activities:

- Staff and students (MSc and PhD) training through visits at partner institutions (duration 1 – 3 months per visit)





## Our planned visits to partner institutions:



- Visits to Tyndall (8 months)
  - Visits to IHP (9 months)
  - Visits to UGR (7 months)
- 24 months in total

## What we could realize :

- One visit of a master student to Tyndall Institute (Stefan Ilić, from 14 October 2019 to 12 December 2019)



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## What we started with the realization, but we could not finish:



- Two master students (Laza Kostić and Luka Spahić) were supposed to go to Germany, from 20 March 2020 to 30 April 2020
- They bought tickets and booked accommodation, but they could not travel because of COVID-19
- Obviously, only two (of 24) months was realized in the first year
- We do not expect that the situation related to travel will be better by the end of 2021!



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## Further live planned activities



### Expert visits from partner institutions to ELFAK:

- in the first year, funds were planned for 4 visits of experts from partner institutions to ELFAK (12 expert visits in total)
- the duration of each visit is about one week
- **It was not realized live, it was already online**



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## Further live planned activities



**Conference participation, workshop organization, visits to research laboratories, joint experiments**

In the first year, funds are planned for:

- ELFAK participation in international conference – **done online**
- organizing a topical workshop in Niš – **done online**
- joint visits to distinguished research laboratories - **was not possible**
- joint experiments – **one experiment done**



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# Further live planned activities



## Short summary of some significant live activities performed:

- 3 – 4 October 2019 – Official kick-off meeting
- one master student visited partner in Ireland (two master students had to cancel visits to Germany)
- one joint experiment (24/25 Decembre 2019) with partners from Tyndall Institute in Vinča Institute
- one live promotion activity: 22 - 24 January 2020 - Stefan Ilić, attended the ATLAS Roman Pots General meeting at CERN, Geneva, Switzerland, and give presentation there



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## Some other activities - performed



- During the first year, three master students completed master studies within ELICSIR project and successfully defended their master's theses:
- Luka Spahić, Design and implementation of an electronic circuit for measuring low currents based on transimpedance amplification
- Stefan Ilić, Investigation of the possibility of using a commercial floating gate transistor as an ionizing radiation detector in high sensitivity mode
- Laza Kostić, Self-sustaining, low-power embedded system for measuring the absorbed dose of ionizing radiation



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## Some activities – was online



- for the first of them, the master thesis was done in collaboration with partners from Tyndall Institute
- the other two worked on their master's thesis in collaboration with partners from IHP
- **consultations were conducted online, but that was certainly not enough**
- they spent one year in master's studies and were not able to stay at partner institutions
- also, unfortunately, colleagues from partner institutions could not be members of their commissions



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## Some activities – currently online



- two master students are working in the fields related to the project topics (from October 2020 to October 2021)
- one of them (Aleksandar Jevtić) in collaboration with colleagues from Tyndal Institute, and the other (Stefan Popović) with colleagues from IHP
- unfortunately, visits to partner institutions are still not possible, so the **collaboration takes place only online, which is certainly not enough**
- they have little chance of staying at partner institutions



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## Some activities - online



- three PhD students are working in the field related to the project topics
- one of them (Marija Živković) in collaboration with colleagues from Granada University, the other (Stefan Ilić) with colleagues from IHP, and the third (Sandra Veljković) with colleagues from Tyndal Institute
- unfortunately, visits to partner institutions are still not possible, so the **collaboration takes place only online (certainly it is not enough)**



## Some activities - done online



- 26 August and 9 September 2020 two days Virtual Summer School: Radiation Effects in Electronic Devices, Circuits and Systems, organized by IHP was held online **(it was planned to be held live in Nis)**

[http://elicsir-project.eu/IHP\\_Summer\\_School\\_2020.php](http://elicsir-project.eu/IHP_Summer_School_2020.php)

- contacts with stakeholders' forum members are maintained on a regular basis
- project consortium meetings are held online regularly, mostly every two months



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## Papers published within the ELICISR project

### - *Peer-reviewed journals:*

S. Ilić, A. Jevtić, S. Stanković, G. Ristić, "Floating-gate transistor with dynamic biasing as a radiation sensor", *Sensors*, 20 (11), 3329, 2020. Impact factor: 3.031;

<https://doi.org/10.3390/s20113329>

### - *International conferences:*

M. Andjelkovic et al., "Design of Radiation Hardened RADFET Readout System for Space Applications," 2020 23rd Euromicro Conference on Digital System Design (DSD), Kranj, Slovenia, 2020, pp. 484-488,

<https://doi.org/10.1109/DSD51259.2020.00082>



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# Influence on the publication of papers



- **Horizon 2020 rules:**
  - papers must be published in a peer-reviewed journals
  - must be paid for the open access option
- for three years of the project, it is planned to publish 10 joint papers in the peer-reviewed journals
- this plan for paper publishing was based on planned joint experiments that could not be performed
- only one experiment was performed with partners from Tyndall Institute





# Thank you very much for your attention!

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