

Newsletter #7

September 2022 – March 2023



*ELICSIR: Enhancement of Scientific Excellence and Innovation Potential
in Electronic Instrumentation for Ionizing Radiation Environments*

Welcome to the sixth ELICSIR project newsletter!

This period in the project implementation was marked by the final activities in project realization and crowned with the ELICSIR Symposium.



Project website: elicsir-project.eu

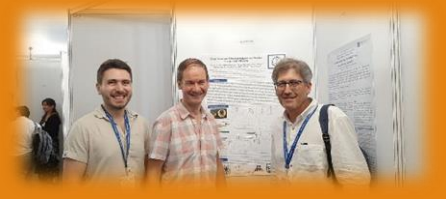
Type of action: Coordination and Support
Topic: H2020-WIDESPREAD-2018-2020
Call: WIDESPREAD-3-2018-TWINNING



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857558.

Participation in BPU11 Congress

ELICSIR Project members [Stefan Ilić](#) and [Goran Ristić](#) participated in the [11th Conference of the Balkan Physical Union \(BPU11 Congress\)](#) that was held in Belgrade, Serbia, from 28 August to 1 September 2022. They gave a poster presentation on the [Direct conversion of ionizing radiation into electrical energy using PIN diodes](#).



Miloš Marjanović's lecture at Petnica



Miloš Marjanović gave a lecture at the summer electronics seminar at the [Petnica Science Centre](#), which gathers the most talented students from Serbia. 17 high school students from 8 cities in Serbia [participated in the seminar](#). The ELICSIR project was presented to the students through a [lecture on radiation sensors and sensor data processing using Arduino](#). Also, Miloš talked about his experience and impressions about working and staying at the IHP within the ELICSIR project.

Sandra Veljković participated in 10th SeCerS

Sandra Veljković participated in the [tenth Serbian Ceramic Society Conference "Advanced Ceramics and Application"](#) which was held in Belgrade, Serbia, on September 26 and 27, 2022. She had a poster presentation *P-channel power VDMOSFETs under the influence of radiation and static/pulsed NBT stress*.



SeCerS
since 1997

Joint research paper presented at ESREF 2022

Miloš Marjanović participated in the 33rd European Symposium on Reliability of Electron Devices, Failure Physics and Analysis ([ESREF 2022](#)), which was held in Berlin (Germany) from September 26-29, 2022. He [presented](#) a joint research paper [Marko Andjelkovic, Milos Marjanovic, Junchao Chen, Stefan Ilic, Goran Ristic, Milos Krstic, PS-BBICS: Pulse stretching bulk built-in current sensor for on-chip measurement of single event transients](#) which includes the results of research conducted within the ELICSIR project.



The 3rd ELICSIR Training School at the University of Granada



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The University of Granada, Spain, organized the third Training School for ELICSIR project partners from October 24 to October 26, 2022. This was a live event held in Granada, Spain, which gathered **39 participants** from all partner institutions and even some external scientists. The attendees had the opportunity to hear **12 very interesting presentations** and be involved in the discussion and other joint **activities that were organized**, thus facilitating knowledge transfer among young researchers involved in radiation effects research as well as their cooperation.

- Salvador García-Pareja/Antonio M. Lallena (Hospital Málaga UGR): [“Variance reduction techniques in Monte Carlo simulations: ants at work!”](#)
- Miguel A. Carvajal (UGR): [“General Purpose Devices as Radiation Sensors: MOSFET and Photodiodes”](#)
- Juan A. Moreno (UGR): [“Characterization of dosimetric sensors for proton and neutron beams”](#)
- Ana Vico (UGR): [“PERFLEX: Flexible films for dosimetry”](#)
- Antonio Pousibet (UGR): [“NFC dosimeter tag for radiotherapy treatments based on commercial MOSFETs”](#)
- Pedro Martín-Holgado (CNA): [“Centro Nacional de Aceleradores: an interdisciplinary research center in Spain”](#)
- Russell Duane (Tyndall): [“Improving the sensitivity of RADFET detectors”](#)
- Marko Andjelkovic (IHP): [“Characterization of Single Event Transient Effects in Standard Combinational Cells”](#)
- Fabián Vargas (IHP): [“Ionizing Radiation and Electromagnetic Interference on Integrated Circuits: From the Need of Combined Test to Current Solutions”](#)
- Samuel Ruiz-Arrebola (Hospital Universitario Marqués de Valdecilla, Santander): [“MicroMOSFET characterization for in vivo dosimetry in brachytherapy”](#)
- Junchao Chen (IHP): [“Artificial Intelligence Hardware Accelerators for Space Applications”](#)
- Emilio Pérez-Bosch (IHP): [“Memristive In-Memory-Computing: Radiation Hard Memory for Computing in Space”](#)



Sandra Veljković awarded for her scientific work



In November 2022, Sandra Veljković, an ELICSIR project team member and a PhD student at the Faculty of Electronic Engineering of the University of Niš, was awarded by a [humanitarian organization Find Raoul](#). She [received an award “Svetislav Milić – to young people from the heart”](#) in the special category for her scientific and research work. During her studies (BSc, MSc and now PhD), she has published 9 papers in international journals, 53 papers in international conferences, 20 papers in national conferences and 2 professional papers. Some of the published papers were written during her engagement in the ELICSIR project.

Sandra Veljković promoted ELICSIR on local TV stations

As a successful young scientist, Sandra Veljković has been a guest on [several television channels](#) in December 2022. During the interviews, she talked about her scientific career and research work, primarily stressing her involvement and activities in the ELICSIR project. She promoted the project and realized activities, focusing on the importance of the project for the community and general public, as well as on the importance of raising people’s awareness about radiation and its aspects.



Nikola Mitrović at the University of Granada



As a part of the ELICSIR project activities, Nikola Mitrović, a teaching assistant at the Faculty of Electronics Engineering, University of Nis, [spent two and a half months at the University of Granada, Spain](#). During this staff mobility, from September 19 to December 2, he was involved in the joint research and preparation of papers with the colleagues from the Department of Electronics and Computer Technology at the University of Granada. Research was focused on designing an experimental setup for measuring of threshold voltage of DMOS transistors. The designed setup was used for measuring the characteristics before and after irradiation as well as during the thermal annealing of DMOS devices. Research results will be processed and published in the upcoming joint papers co-authored by ELICSIR project team members.

Another joint scientific paper published

ELICSIR Project members worked together to publish another scientific paper based on the research conducted within the project. The paper *Marko Andjelkovic, Milos Marjanovic, Bojan Drasko, Cristiano Calligaro, Oliver Schrape, Umberto Gatti, Felipe A. Kuentzer, Stefan Ilic, Goran Ristic, Milos Krstic, “Analysis of Single Event Transient Effects in Standard Delay Cells Based on Decoupling Capacitors”* was published in the *Journal of Circuits, Systems and Computers*, vol. 31, no. 18, Dec. 2022.

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Analysis of Single Event Transient Effects in Standard Delay Cells Based on Decoupling Capacitors*

Marko Andjelkovic^{1*}, Milos Marjanovic^{1,††}, Bojan Drasko^{1,††}, Cristiano Calligaro^{2,§}, Oliver Schrape^{3,§}, Umberto Gatti^{4,||}, Felipe A. Kuentzer^{1,***}, Stefan Ilic^{1,§,†††}, Goran Ristic^{1,†††} and Milos Krstic^{1,†††}

ELICSIR Symposium to wrap up project activities

As one of the final project activities, the [ELICSIR Symposium](#) gathered [project partners and stakeholders](#), [coordinators of some other Twinning projects](#), as well as [scientists](#) whose research covers [Symposium topics](#). The Faculty of Electronic Engineering in Niš, as the project coordinator, hosted this event from January 25-27, 2023, which had a very rich [scientific and social program](#) for more than seventy participants from eleven countries. This was a great way to conclude the project and summarize all activities, and share the experience with other Twinning projects. Also, it was a great forum to talk about the conducted research and obtained results which have been and will be published in the near future, especially because there were many participants from the scientific community, not just project partners. The [presented contributions](#) are available on the [Symposium website](#).

Book of Abstracts containing the summary of contributions presented during the ELICSIR Symposium can be found [online](#). The BoA includes fifty abstracts that cover the Symposium topics and present the results of very interesting studies of not only the members of the ELICSIR Project team but also of the participants from the scientific community.



Twinning Project Day within the ELICSIR Symposium

The [ELICSIR Symposium](#), as one of the final project activities, was a great place to gather the coordinators of other regional Twinning projects to exchange experience and good practices, and help each other in achieving the planned objectives. The [programme](#) of this event included the presentation of nine Twinning projects followed by a very interesting discussion among [coordinators](#). Although these projects cover different topics, mutual support will be very significant during their implementation.

Milan Pavlović spent two and a half months at IHP

Milan Pavlović, a MSc student at the Faculty of Electronic Engineering in Niš, [spent two and a half months](#) at the IHP, Germany, as a part of the staff mobility within the ELICSIR Project. The mobility was realized from 5 December 2022 to 20 February 2023. His activities were related to the training on the use of digital circuit simulator tool *Modelsim*, design of on-chip temperature sensors based on ring oscillators, and design of SET filters and detectors. He will use this valuable knowledge and research results for his MSc thesis and future scientific work and publications.



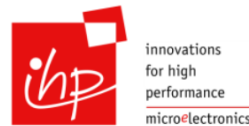


ENHANCEMENT OF SCIENTIFIC EXCELLENCE AND INNOVATION POTENTIAL
IN ELECTRONIC INSTRUMENTATION FOR IONISING RADIATION ENVIRONMENTS
WIDESEAD-3-2019-TWIRING

THANK YOU



FOR FOLLOWING ELICsir
PROJECT ACTIVITIES!



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