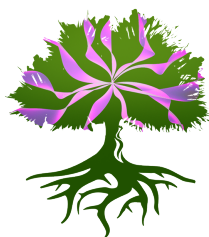


BOOK OF ABSTRACTS I TRAINING SCHOOL

"Plasma applications for smart and sustainable agriculture" – PIAgri

17 – 19th March of 2021



CA19110

Plasma applications
for smart and
sustainable agriculture



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About

The 1st PIAgri Training School was aimed primarily towards young researchers (PhD students, young post-docs), as well as, researchers interested in obtaining the knowledge from different fields and also representatives from industry. The course was focused on integrating fundamental knowledge in this multidisciplinary field and understanding specific aspects of different requirements and expertise in topics such as:

- Plasma physics in general;**
- Plasma-water interactions and chemistry;**
- Plasma sources;**
- Plasma diagnostics;**
- Waste water treatment;**
- Plasma treatment of seeds and plants;**
- Plasma sources for food processing: design, characterization and upscaling.**

The 1st PIAgri Training School highlighted the most recent developments in each topic, promoting a strong interaction between experienced trainers working on different topics and trainees.

First Training School

The main focus of the school was on the state-of-the-art in the field of plasma agriculture. The trainees will have the opportunity to be acquainted with the latest accomplishments which will be presented in such level that trainees from different fields (sciences) can obtain a basic knowledge.

Dates and Location

Due to the situation with COVID -19 and travel restrictions, the First Training School has been organized as a hybrid event from 17-19th March 2021 in Hotel Termag, Jahorina, Bosnia and Herzegovina and under the local organization of the University of East Sarajevo (UES) and the Faculty of Technology Zvornik.

Local Organizing Committee

Prof Dragan Vujadinovic Prof Milan Vukic Ms Jelena Vulinovic

Plasma treatment of plants: puzzle games for biologists and physicists

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Recent scientific, technological and methodological advances in the fields of plasma physics and plant physiology offer a wide range of possibilities for employment of plasma technology in treatment of plants. Application of PAW or direct plasma treatment represent an alternative and valuable approach to plant biotechnology being chemically-free, energy efficient, and environmentally friendly. However, the distinct mechanisms responsible for the positive effects of plasma treatment on plant cells are still vague. Plant calli cultures (calli grown aseptically on semisolid agar medium) and calli suspension cultures (calli grown aseptically in liquid medium in test tubes, shake flasks, or bioreactors) with or without addition of plant growth regulators are used to illustrate changes in physiological response of plant cells/tissues induced by plasma treatment. Key challenges and obstacles to achieve precise and localized *in vivo* treatments of living cells and tissues will be discussed in light of current knowledge in the field.

Key words: plant calli, *in vitro* culture, plasma treatment, PAW