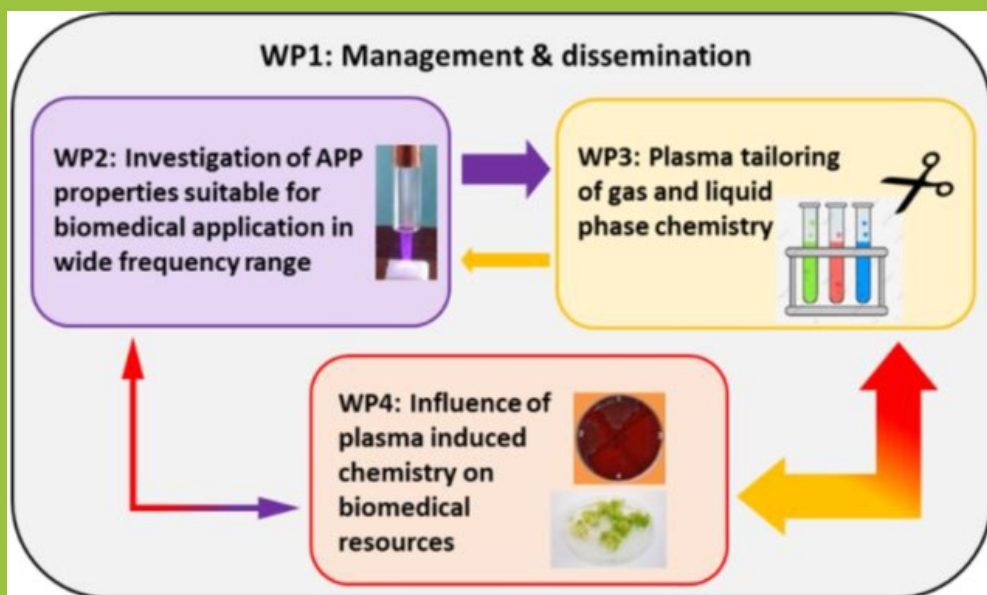


The main idea of APPerTAin-BIOM project is to tailor rich plasma chemistry to be effective green technology for treatment of drug-resistant bacteria or plant cells for production of chemical compounds needed in pharmacy or cosmetics. With this in mind we have started to assemble laboratory pilot Atmospheric Pressure Plasma (APP) systems that will be characterized and optimized for application during the APPerTAin-BIOM project.

In order to be able to set the guidelines for technology transfer at the end of the project we need to know in great detail plasma chemistry in gas phase and its interaction with liquids. This first period was used for further literature search and procurements of necessary equipment and consumables. Also, the first aseptic in vitro carrot calli culture is set up and it will serve as source of plant material during the project.

## Work packages of APPerTAin-BIOM



### Project Partners - Science and Research Organizations (SRO)



Institute of Physics Belgrade, University of Belgrade (IPB)



School of Dental Medicine, University of Belgrade (STOMF)



Faculty of Medicine (School of Medicine), University of Belgrade (MFUB)



Institute for Biological Research Siniša Stanković, University of Belgrade (IBISS)

## News:

- **August 2022-** New MW atmospheric pressure plasma source
- September 2022- Visit from colleagues from Hungary
- **October 2022 –** Lecture and activities at the 75<sup>th</sup> Gaseous Electronics Conference
- Reference strains in preparation
- Handling of the calli needed for plasma treatment
- **December 2022-** Dr Nikola Škoro held a popular scientific lecture at school 'Digi Klinici'.
- Visit from high school students of special departments of Valjevo Gymnasium
- APPerTAin-BIOM quarterly meeting



MW atmospheric pressure plasma source ready for experiments



SCAN ME

APPerTAin-BIOM received three colleagues from the Wigner Research Centre for Physics, Budapest, Hungary as a part of the ongoing collaboration



Dr Nikola Škoro gave lecture at the 75<sup>th</sup> GEC in Sendai Japan. He was member of GEC Student Award Committee. Dr N Puač was invited speaker and chair person of section Plasma Medical & Agricultural Application II. She was also member of Student Poster Award Committee. There was also time for meeting colleagues.

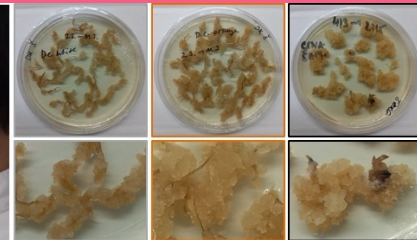




The protocols for maintenance and storage of the reference multidrug resistant strains of *Klebsiella pneumoniae* /ATCC BAA-2814 and *Enterococcus faecalis* /ATCC 51299 have been implemented and tested. Their confluent growth as well as inhibition zones of selected antimicrobials were assessed, as part of developing experimental protocols for assessment of antibacterial efficacy of the generated plasmas of the APP sources on agar plates, and possible development of resistance against plasma treatments.



Calli of three different varieties of carrot (*Daucus carota*), white (A), orange (B), and black (C) grown on the MS medium with plant growth regulators ( $1 \text{ mg L}^{-1}$  2,4-D and  $1 \text{ mg L}^{-1}$  KIN).



Dr Nikola Škoro held a popular scientific lecture at the school for programming and robotics for children 'Digi Klinici'. The team won first place at "[The first LEGO league](#)" competition.

## Visit from high school students of special departments of Valjevo Gymnasium



APPerTAIN-BIOM Q4 meeting at the Institute of Physics Belgrade. Discussion about the delayed deliveries, surge in prices, internal database for experimental setups and parameters and new experiments.

