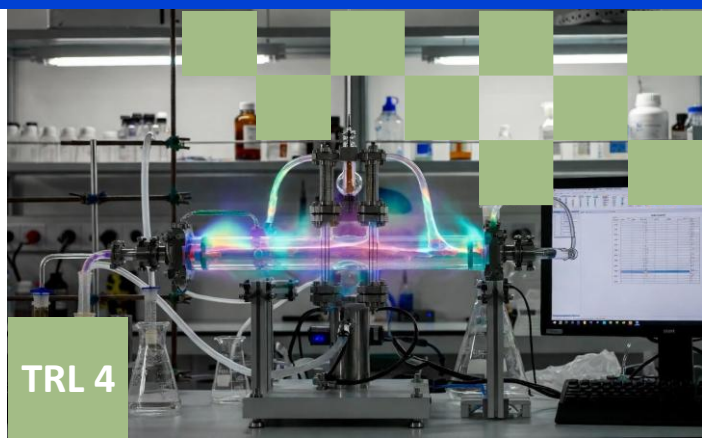
Bio-tech

Antibacterial preparation produced using dc-APGD cold plasma and the dedicated flow-through system



About the solution

The invention concerns a method for producing an antibacterial preparation using atmospheric cold plasma generated in a continuous dc-APGD flow system. In this process, tap water with Lugol's solution (172 µL per 1 dm³ of water) is used as the flowing liquid cathode.

The resulting preparation contains reactive nitrogen species and elevated molecular iodine levels, providing strong antimicrobial activity against plant pathogens such as Pectobacterium atrosepticum, Pseudomonas syringae, P. corrugata and P. savastanoi. The technology does not require deionised water or long processing times, and the flow-through setup enables fast and energy-efficient production.

The invention also includes the preparation itself and the dedicated flow-through reaction-discharge system used for its generation.

IP Protection

The invention is protected by a patent application in the Polish Patent Office under the number: **P. 447139**

Technology readiness level

TRL 4 - Technology validated in laboratory conditions.

Research Team

University of Gdańsk
PhD Agata Motyka-Pomagruk
PhD Eng. Wojciech Śledź
MSc Jakub Orłowski
PhD Weronika Babińska-Wensierska
Prof. Ewa Łojkowska

Wrocław University of Science and Technology
PhD Eng. Anna Dzimitrowicz
PhD Eng. Dominik Terefinko
PhD Eng. Piotr Jamróz
Prof. Eng. Paweł Pohl

Applications

- Control of bacterial plant pathogens in field and greenhouse cultivation,
- Disinfection of seeds and propagation material,
- Reduction of yield losses caused by bacterial infections.

Cooperation opportunities

- Licensing of the technology and the flow-through system,
- Joint R&D projects focused on agricultural implementation,
- Process scale-up and application testing with industrial partners.

biuro@ctt.ug.edu.pl
ul. Wita Stwosza 63,
80-308 Gdańsk
www.ctt.ug.edu.pl

Judyta Gawryś
+48 725 991 257