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Research Success Story



P L A S M A T E C H T O S T E R I L I S E F O O D A N D P H A R M A P O W D E R S

Food and pharmaceuticals in powder form offer many advantages, including stability, easy transportation, long shelf life and less waste. But conventional thermal methods cannot be used to sterilise powders. Cold atmospheric plasma (CAP) technology is a possible solution being explored in the Horizon 2020 project “CAP-SALiPharm” at the University of Applied Sciences and Arts Western Switzerland (HES-SO).

Infant food formula, nutraceuticals, fortified food for special diets, even future food products from algae and insects – all of these things depend on producing powders in sterile form. The CAP-SALiPharm project intends to show that microbial decontamination can be achieved with emerging cold atmospheric plasma (CAP) technology. “The project combines engineering knowledge in CAP technology with expertise in food science,” explains project supervisor Prof. Dr Michael Beyrer, food engineer at HES-SO’s Institute of Life Technologies.

Pooling knowledge

CAP-SALiPharm is the first Marie Skłodowska-Curie Individual Fellowship (MSCA-IF) ever awarded to a University of Applied Sciences. Project fellow Dr Maria Consuelo Pina Pérez says the funding is a great opportunity to

increase knowledge in novel processing technologies, as it provides collaboration with experts in the plasma field. In fact, Beyrer says, collaboration was key to the project’s winning proposal. “Our first proposal failed. For resubmission, we had everyone on board: supervisor, fellow, university, industry and Euresearch – each adding value to the proposal.”

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In addition to various departments at HES-SO, CAP-SALiPharm also enjoys support from the Swiss Plasma Center of the Federal Institute of Technology Lausanne (EPFL) and the Nestlé Re-

search Centre, both in nearby Lausanne. Beyrer sees input from industry as another key to success. “If we stayed in the lab, we wouldn’t be connected to the real environment. Nestlé gives us advice on how to solve problems in a way that fits consumer and industry needs, as well as how to adapt (the solution) to change international regulations. This will make the transfer to industry and scale-up very effective.”

A plus for innovation

“Our project could have a significant impact on the position of the European Union in CAP technology,” adds Beyrer. “And Swiss innovation will also benefit. The University wants to create a competence centre on non-thermal treatments of food, including plasma technology, but also on pulsed electric fields and high pressure technology.”

About CAP-SAliPharm



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Prof. Dr Michael Beyrer
Institute of Life Technologies,
HES-SO

CONTENT SUMMARY

CAP-SAliPharm aims to use innovations in cold atmospheric plasma (CAP) technology to guarantee the quality and safety of powdered food and pharmaceutical products. Funded by the Horizon 2020 MSCA-IF programme, the project hopes to answer the Horizon 2020 societal challenge to improve food security and health for future populations.

FACTS AND FIGURES

Project Name

CAP-SAliPharm – Cold Atmospheric Plasma (CAP) sterilisation of powdered products: optimisation and validation at alimentary and pharmaceutical levels

Research Area

Food and pharmaceutical technologies

Organisations

HES-SO in collaboration with Nestlé Research Center and Swiss Plasma Center, EPFL

Start Date – End Date

02.01.2018 – 01.01.2020

Duration

24 months

Project Cost

€187,419.60

Project Funding

€187,419.60

Programme

Horizon 2020 Marie Skłodowska-Curie Actions: Individual Fellowships

More Information

www.hes-so.ch/fr/cap-salipharm-11105.html

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