PlasmaFresh

Innovative Use of Cold Plasma in Food Powder Decontamination

The Challenge – Preventing Powdered Food Contamination

Powdered foods such as spices and baby formula are difficult to decontaminate due to high surface area, microbial resistance and clumping, leading to regular food hygiene issues. Current decontamination approaches, such as steam, are typically slow, energy intensive and require additional process steps.

Cold plasma has recently emerged as a possible replacement due to its low energy requirements, but major barriers exist to its use with powder, including scale-up challenges, charge build-up, long residency time and ability to penetrate the powder.

The Solution – CO-PROTECTOR

CO-PROTECTOR seeks to integrate novel cold plasma decontamination with a fluidised bed dryer to create a unique single-step powder drying and disinfection solution for the food industry. This will feature multiple innovations to deal with efficacy and charge build-up, creating a solution that will be cheaper, more effective and more energy efficient than any existing solution.

The Funding

The team at Neon Innovation secured a €337k grant from the Innovate UK Smart Grant programme. The funding will enable Plasma Fresh to optimise the process for different food product groups and develop approaches to minimise the effect on organoleptic properties.

The Impact

Successful completion of ATTUNE project will lead to safer powdered foods, more energy-efficient equipment and a more economically sustainable sector, delivering a ROI of 21 times investment.

UKRI Innovate UK

18 months

£337,000 Grant

Plasma Fresh (UK)

neon innovation