



Pulsed Electric Field for food conservation or other applications



Project: CS-01-15
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Budget: 50 K€

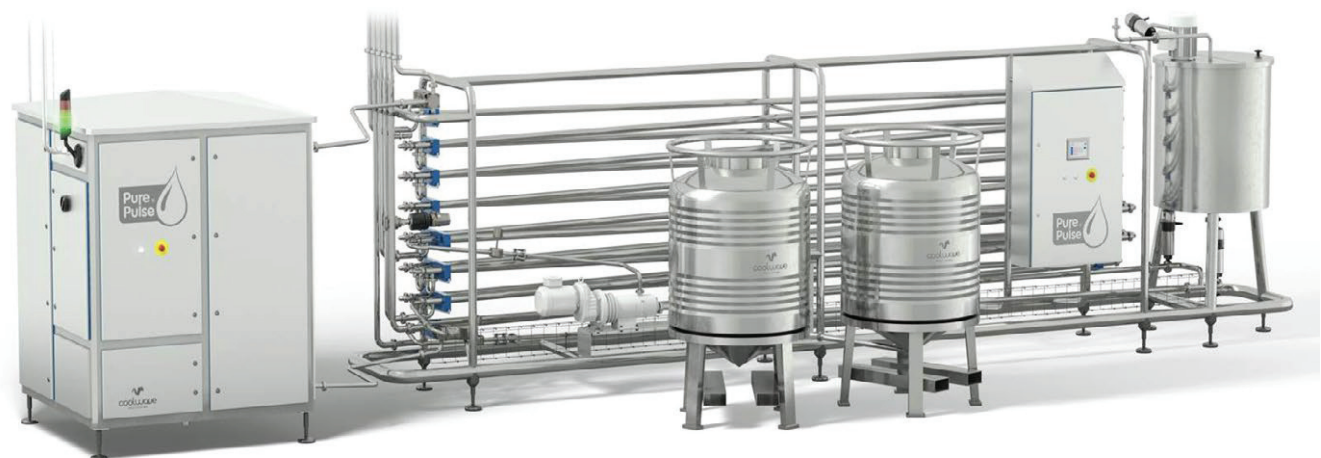
Objective:

Demonstrate the feasibility of PEF for actual applications focusing on microbial inactivation and focusing on enhanced extraction.

Motivation:

With the new PEF 2.0 has the following advantages:

- Mild process for microbial inactivation
- Less quality degradation during microbial inactivation
- Lower energy input
- Lower costs compared to HPP
- Enables to extract more desirable components
- Increase product yield and quality



Project scope:

For the microbiological inactivation and the extraction enhancement applications the feasibility of using PEF will be performed. Relevant PEF operating parameters will be determined for the applications based on product characteristics. Experimentally, the best PEF operating conditions (field intensity, pulse duration, number of pulses, frequency, and temperature) will be determined.

Applicability:

TOP has developed a new PEF-concept, called PurePulse. During the whole treatment products remain below 40 degrees Celsius. The method works best at acidic juices such as apple or orange juice, where the low pH and electrical pulses extend the shelf life. Liquid foods with undissolved particles larger than 5 millimeters cannot yet be treated with PurePulse.

Results:

Extraction of both tested cases was enhanced considerably by PEF:

- Juice yield
- Juice purity
- Field strength, number of pulses and temperature affect efficiency