

**Title:**

**COLD $\mu$ WAVE – Investigation of microwave blanching of vegetables**

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**Abstract:**

COLD $\mu$ WAVE aims to the development of an innovative environmentally sustainable process for blanching and freezing vegetables with improved textural and nutritional quality. The study which will be carried out will involve the use of microwave electromagnetic irradiation (MW) for blanching and freezing of vegetables. COLD $\mu$ WAVE will develop tailored equipment for MW blanching of vegetables that has very high energy efficiency and no water consumption. Furthermore, this project will develop innovative pathways in freezing to improve the quality of frozen vegetables by exploring, in a new context, previous results acquired by Xanthakis *et al.*, 2014. The developed process will lead to improved quality characteristics compared to the conventional freezing.

Herein, The developed microwave blanching methodology will be presented. Moreover, heat transfer phenomena and energy demands of our microwave blanching approach will be evaluated based on measurements and computer modelling.

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**References:**

Xanthakis E., Le-Bail A., Ramaswamy H. 2014. Development of an innovative microwave assisted food freezing process. *Innovative Food Science & Emerging Technologies* **26**, 176–181.