Title:

FREEZEWAVE – Investigation of dielectric properties of food matrices for modelling of microwave assisted freezing

Authors & affiliations:

Sven Isaksson, Erik Kaunisto, Epameinondas Xanthakis[(*)], Lilia Ahrné.

SP-Food & Bioscience, Box 5401, Gothenburg, SE-40229, Sweden.

[(*)]*epameinondas.xanthakis@sp.se*

Abstract: (Your abstract must use **Normal style** and must fit in this box. Your abstract should be no longer than 300 words. The box will 'expand' over 2 pages as you add text/diagrams into it.)

FREEZEWAVE project proposes a highly innovative technique which showed that a small amount of emitted microwave energy combined to a slow freezing rate is able to refine ice crystal size in frozen meat (Xanthakis *et al.*, 2014). FREEZEWAVE project aims at expanding & optimizing the concept to several foods and also at designing industrial equipment. Herein, the structure and the directions of the project as well as the initial results of this study and the preliminary results of the previous study will be illustrated. More specifically, the results regarding the dielectric properties investigation for meat, fish, emulsions and vegetables will be presented. The acquired data will be used for the modelling and numerical simulations of the underlying heat transfer phenomena during the microwave assisted freezing of the aforementioned food matrices.

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.