

STSM Scientific Report

Reference: Short Term Scientific Mission, COST Action FA1001

Participant: Dr. Song Miao, Teagasc Food Research Centre (Ireland)

Host: Professor Maria Cristina Nicoli, University of Udine (Italy)

Period: from 04/10/2011 to 18/10/2011, Place: Udine (Italy)

Reference code: COST-STSM-ECOST-FA1001-011011-009132

Background and purpose of the STSM:

During previous two COST Action FA1001 annual meetings, we found we had similar interest on the structuring emulsions via monoglyceride for functional delivery from different application aspects, which contribute to COST Action FA1001, also we were interested in possible collaborations.

In order to foster collaboration between Food Structure Group in Teagasc Food Research Centre and Food Technology Group led by Professor Maria Cristina Nicoli in University of Udine, define mutual interests and complementary expertise/facilities that might be relevant for possible future collaboration, to discuss the possibility for collaboration/exchange, This STSM was initiated and carried out at University of Udine at above period time. The main context of this mission was focused on the knowledge exchange.

Activities during the STSM:

Details discussion on monoglyceride self-assembled structured emulsions and their applications, especially the WPI system, Tween system and the hydrogel systems.

Visited Istituto di Cristallografia and have a detail discussion with expertises on XRD analysis on characterisation of monoglyceride physical structure, and also discussed on the possibility and proposal for access to the facility in Synchrotron Radiation Facility ELETTRA in Trieste in near future.

Facilities and lab tours/introductions in the Department of Food Science at University of Udine

Presentations to Food Technology Group and PhD students on topics of “Teagasc Food Program” and “Effect of monoglyceride self-assembled structure on emulsion properties and subsequent flavor release”, Udine group also present on overview of food research area in the University of Udine, and followed by further detail discussions.

Demonstration experiments on preparation of monoglyceride structured hydrogel and oil structuring using monoglyceride, followed by discussions.

Further discussion on the possibility of further collaboration, topics on application of structured emulsion on oxidation and bioactive stability came to the points.

Discussion on the possibility of sharing facilities in National Imaging Center in Teagasc and University of Udine

Outcomes from STSM:

After STSM, two groups are clearer about the research areas/issues and the available facilities from both sides; we were very interested and would like to move forward future collaborations, especially on characterisation of the monoglyceride structure at current model systems from both groups, plan to make a joint proposal to the Synchrotron Radiation Facility Elettra located in Trieste to study the physical structure of self-assembly structures formed by monoglycerides at current model systems, and look at the details on how this structure affected the oxidation, flavour release and bioactive stability, we expect to get joint publication on this topic in the near future when work is done.

We agreed and plan to look at the possibility to extend our current research activities to cover issues on the oxidation and bioactive at current model systems.

We agreed to further our exchange on researcher and students, especially look at the possibility on Erasmus Program and the next year STSM application. Further student and researcher exchange would be our next plan.

We agree to look at the possibility of joint EU funding application in the future.

Overall, this STSM is very successful and we hope it's a starting point for our future collaboration.