

Technology transfer in the area of food functionality design: effectiveness criteria

**Workshop of the Working Group 4 “Technology Transfer”
of Action FA1001**

**THE APPLICATION OF INNOVATIVE FUNDAMENTAL
FOOD-STRUCTURE-PROPERTY RELATIONSHIPS
TO THE DESIGN OF FOODS FOR HEALTH, WELLNESS AND PLEASURE**

www.foodstructuredesign.net

**Vienna, February 20th, 2013
BOKU - Universität für Bodenkultur**

***Chair: Laura Piazza
University of Milan - Italy***

About COST

- COST is an intergovernmental framework for European Cooperation in Science and Technology, allowing **the coordination of nationally-funded research** on a European level.
- As a **precursor of advanced multidisciplinary research**, COST plays a very important role in building a EUROPEAN RESEARCH AREA.
- COST anticipates and complements the activities of the EU FRAMEWORK PROGRAMMES
- COST also increases the **mobility of researchers across Europe** and fosters the establishment of scientific excellence.

COST ACTION FA1001 2010-2014



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www.foodstructuredesign.net/

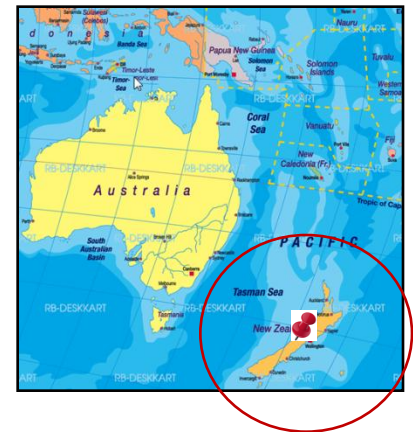


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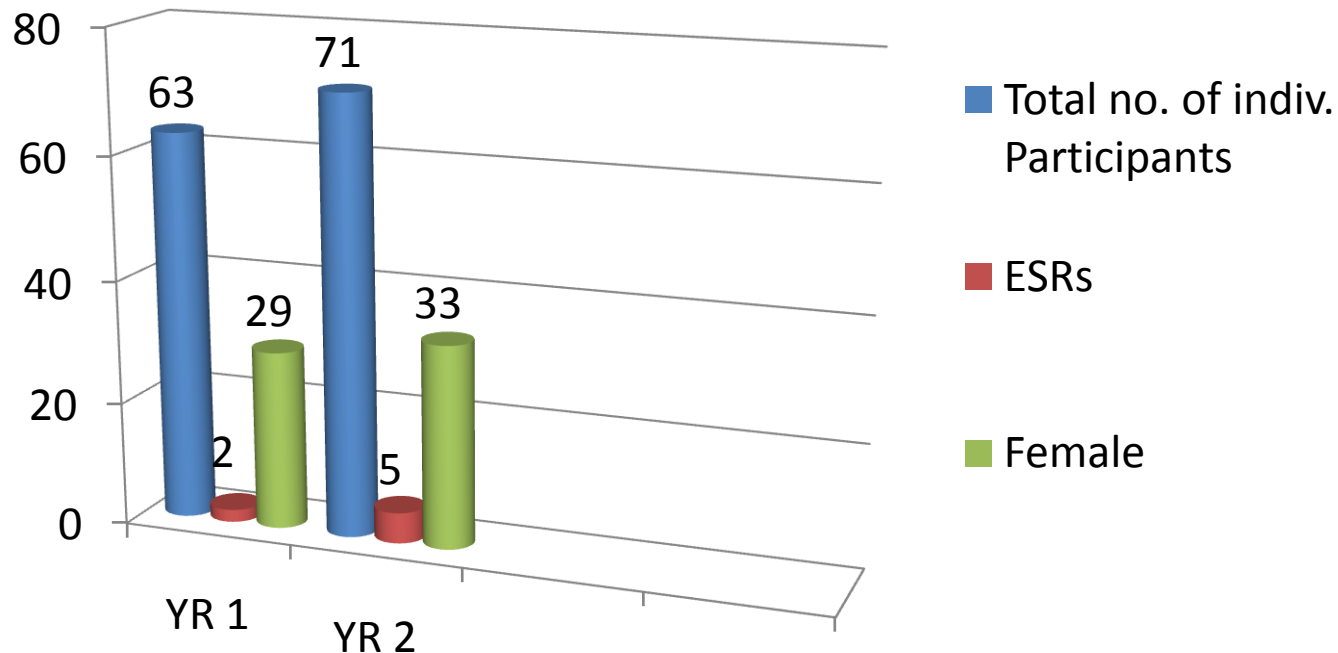


PARTNERS

NZ

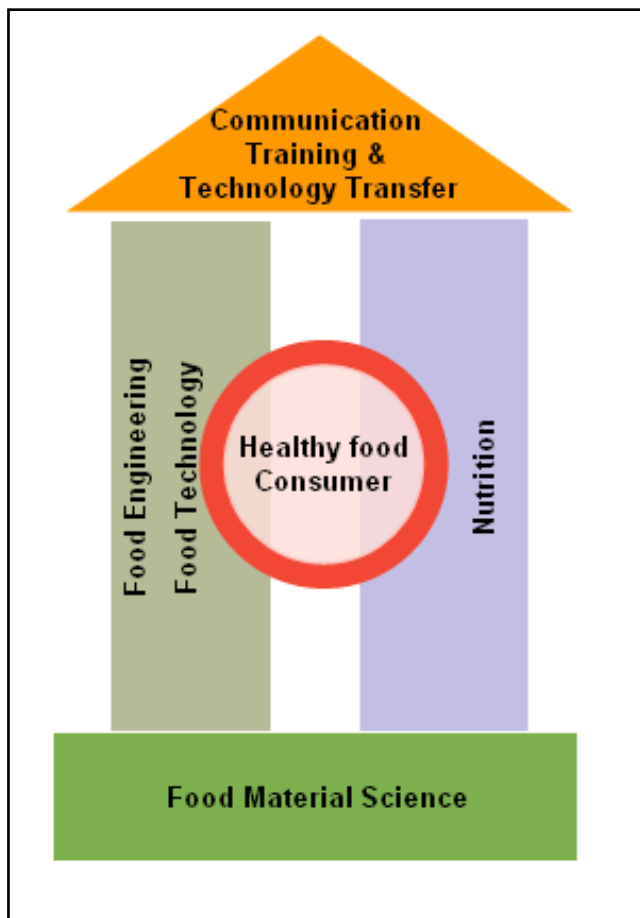


Action participants



ESRs have been encouraged to keep in contact through the social network LinkedIn. The LinkedIn group of ESR of our FA1001 consists of has 33 members and 3 discussions. Substantial information is shared using this network.

Scientific context and objectives



Coordination of research activities of partners in the frame of a **integrated process & product design approach for creating innovative products with real health benefits and optimal sensory characteristics.**

Research directions

The purpose of the Action is to provide a platform for interdisciplinary scientific discussion on **delivery systems** as well as suitable methods for **enhancing the functionality** in complex real **multiphase structured foods (FOAMS AND EMULSIONS)**

1. Nano- and microstructures for controlled release: scientific principles for design and formation.
2. Design of complex polymer and colloidal systems.
3. Biophysical and gastro intestinal engineering aspects of nutrient absorption.
4. Understanding and controlling the behavior of functional ingredients.
5. Materials science of the solid state: structure, mobility and barrier properties.

Topics /Working groups

- **WG1:** Analytical and modeling techniques to characterize structure and physical properties of foods
WG Leader: Erich Windhab (CH)
- **WG2:** Elucidating structure-property functions and designing model multiphase systems—foams and emulsions
WG Leader: Erik Van Der Linden (NL)
- **WG3:** Innovative everyday foam- and emulsion-based foods with optimal sensoric quality and health benefits
WG Leader: Gilles Trystram (FR)
- **WG 4:** Training and technology transfer
WG Leader: Viktor Nedovic (RS)

SCIENTIFIC BREAKTHROUGH

REVERSE ENGINEERING APPROACH for new product developments

SCALING FUNCTIONALITY

food properties required

formulation or structure engineering

the appropriate processing



DEDUCING DESIGN /MANUFACTURING DECISIONS FROM END PRODUCTS

Significant Highlights in Networking

Main contacts with consolidated scientific organizations which include:

- **EFCE- Food Section** (European Federation Chemical Engineering – Food Section)
- **EFFoST** (European Federation of Food Science and Technology)
- **IFA** (ISEKI – Food Association)
- **EFFoST Young Scientists** Special Interest Group (EFFoSTYSSIG)
- **UNIDO** (United Nations Industrial Development Organization) in the area of “new foods for health”



Significant Highlights in Networking

EFFost 2011 Topics:

structure

engineering, coating/encapsulation, extrusion, emulsification, gut function, sensory management, satiety management and nutritional accessibility.

Concepts have been introduced which can lead to radical innovations for our future food supply, including tailor-made foods for very specific requirements and possibly even towards personalised ones.

ISFRS 2012 Topics:

Rheology and Structure Analysis: Rheological Methods · Rheological Modelling and Numerical Methods · Rheo-SALS, SANS, SAXS

Food Materials and Characteristics: Biopolymer Solutions and Gels · Macromolecular Assemblies · Colloidal Systems · Dispersions · Emulsions and Foams · Semi-Solid Foods

Food Processing: Influence of Processing on Structure and Rheology · Encapsulation · Structure, Nutrition and Health functional structure processing in a reverse gastrointestinal engineering approach for personalized food



Connections to other WG's & ETP's IN VIEW OF FOOD QUALITY AND MANUFACTURING 2020

1. Input required from other Working groups within ETP F4L:
 - Food & Health: • Food & Consumer:
2. Input from other science areas:
 - Nanotechnology • Material Science • X-nomics
(proteomic, genomic...)
3. Input from other ETP's, (European) organizations or National bodies:
 - ETP Animal breeding: raw material structure/quality characteristics
 - ETP Plants for the future: whole new routes to produce (healthy) ingredients.
 - EFFoST
 - National funding agencies
 - Key European Food Science Educational Programmes

CONCLUSION

The food industry is constantly challenged to meet consumer demands for new food products that are safe, convenient, affordable, pleasurable and healthy



**MAIN CONTRIBUTION
FROM COST ACTION FA1001
“FOOD STRUCTURE DESIGN”
WITHIN END 2014 !**



There will be open access to new partners entering the Action during the course of the project !!!

The web site of the Action is the reference link to be permanently informed:

www.foodstructuredesign.net



Working Group 4 : Training and technology transfer

- Summer school for process-structure-property scheme approaches addressing food products with health and sensory benefits will be organized on June 2013 in Dublin UCD
- The workshop on Technology Transfer (TT) is organized mainly oriented towards academia and multipliers of Technology Transfer.

The programme will be structured e.g. as follows:

- Overview of COST Action / How Knowledge and Technology Transfer is carried out e.g. by Academy
- Mediators from different countries: how to write projects, carry out projects, find partners, fundings etc.
- Feedback from Transfer Agencies
- A participation in the FP7 call in 2013 on Technology Transfer & health benefits could be discussed



ENJOY YOUR STAY IN VIENNA !!