



## International Workshop

“Novel nanostructured polymeric materials  
for food packaging and beyond”

Espoo, FINLAND, September 15-16 2011

**Under the COST Action FA0904 “Eco-sustainable Food  
Packaging based on Polymer Nanomaterials”**



**Venue:**  **Technical Research Centre of Finland**

**Address:** **Metallimiehenkuja 2, Espoo**  
Building No. 10 on map link below.  
[http://www.vtt.fi/files/vtt/vtt\\_karttaespoo.pdf](http://www.vtt.fi/files/vtt/vtt_karttaespoo.pdf)  
Tel. +358 20 722 111 (VTT exchange)

**Registration:** [https://www.lyyti.fi/ilmoittaudu/vtt\\_1198](https://www.lyyti.fi/ilmoittaudu/vtt_1198)  
Registration deadline is September 2.  
Maximum number of participants 60

## Introduction

As part of COST Action FA0904 “Eco-sustainable food packaging based on polymer nanomaterials” an **International Workshop “Novel nanostructured polymeric materials for food packaging and beyond”** will be organized related to Working Group 1 of this Action. The main goal of WG 1 (Development of new safe PNFP) is to consider new polymer nanomaterials for food packaging – also from other applications – and breakthroughs and knowledge leading to new features gained through nanotechnology. The presentations belong to the following topics:

- Selection, synthesis, production of matrix, nanoparticles and –devices
- Surface functionalization and chemical treatments of nanoparticles
- Link between nanostructures and macroscopic properties
- Characterization and measurement tools.

COST Action FA0904 constitutes an international scientific and technology network on issues related to Eco-sustainable Polymer Nanomaterials for Food Packaging (PNFP), for the preservation, conservation and distribution of high quality and safe food. The Action aims at exploiting the potentiality of polymer nanotechnology in the area of food packaging treating in a complete way the demanding needs of the users, such as health, environment, taste, cost and the specific requirements of the food industry. The envisioned direction is to look at the complete life cycle of the PNFP by the combined efforts of leading research and industrial groups. The Action will identify the barriers (in research and technology, safety, standardization, trained workforce and technology transfer) that prevent a complete successful development of PNFP and will indicate the strategies to proceed further. In this Action there are 25 COST countries and 2 non COST institutions involved. The action is organized into four working groups.

Further information: [www.cost.esf.org](http://www.cost.esf.org)

Dr. Clara Silvestre, ICTP-CNR, Chair of FA0904

Dr. Mika Vähä-Nissi, VTT, Head of WG 1

## Tentative Program

September 15<sup>th</sup>

- 11.00-12.00 Registration and Coffee**
- INTRODUCTION – Chaired by Dr. Mika Vähä-Nissi, VTT**
- 12.00 – 12.15 Welcome and FA0904 in short; Dr. Mika Vähä-Nissi, VTT**
- 12.15 – 12.45 Keynote speech; Vice President, Prof. Erja Turunen, VTT**
- 12.45 – 13.15 Sustainable packaging; role of nanotechnology;**  
Dr. Gulden Yilmaz – Jongboom, Wageningen UR, NL
- 13.15 – 13.30 Break**
- NANOCELLULOSE – Chaired by Dr. Tekla Tammelin, VTT**
- 13.30 – 14.00 Novel polymer nanomaterials for food packaging based on modified cellulose nanofibres; Dr. Ruth Schmid, SINTEF, NO**
- 14.00 – 14.30 Safety aspects of nanocelluloses;**  
Marja Pitkänen & Jari Vartiainen, VTT
- 14.30 – 15.00 New approach to classification of cellulose fibrils and suitable methods for their characterization; Asko Sneck, Marja Pitkänen, Heli Kangas, Tekla Tammelin and Erkki Hellén, VTT**
- 15.00 – 15.30 Coffee Break**
- SURFACES I – Chaired by Dr. Annaleena Kokko, VTT**
- 15.30 – 16.00 Solid board as a base material for novel sustainable packaging applications;**  
Sanne Tiekstra, Bumaga BV, NL  
Arie Hooimeijer & Maja Stanic, Kenniscentrum Papier en Karton, NL
- 16.00 – 16.30 Starch-clay paper coatings for sustainable, flexible packaging;**  
Dr. Francis Clegg & Chris Breen, Sheffield Hallam University, GB
- 16.30 – 17.00 Nanostructured materials based on electrospinning of interest in food biopackaging applications; Dr. José-M. Lagaron, IATA-CSIC, ES**
- 17.00 – 17.30 Changes in water vapor uptake ability of xylan derivatives monitored by QCM-D humidity module; Dr. Tekla Tammelin, VTT**
- 18.00 Workshop Salad Buffet Dinner (Sponsored by VTT) and Poster:**
- The technology of antibacterial food packaging materials production;**  
Paulius P Danilovas, Dr. Ramune Rutkaite, Algirdas Zemaitaitis, Kaunas University of Technology, LT

## September 16<sup>th</sup>

### **SURFACES II – Chaired by Dr. Kalle Nättinen, VTT, FI**

- 8.45 – 9.15** **Antimicrobial surface modification of polyethylene;**  
Elena Paslaru & Cornelia Vasile, “P. Poni” Institute of Macromolecular Chemistry, RO  
Lidija Fraszemljic, University of Maribor, SI  
Dona Constantinescu, SC ECEFS-Savinesti, RO  
Gina Procope, Food Safety Department, RO
- 9.15 – 9.45** **Atmospheric plasma technology for surface modification of nanoparticles;** Dirk Vangeneugden, Annick Vanhulsel & Sofie Put, VITO, BE
- 9.45 – 10.15** **Nanoscale surface processing of extrusion coated substrates and plastic films with atmospheric plasma activation and deposition;**  
Dr. Johanna Lahti & Juho Lavonen, Tampere University of Technology, FI
- 10.15 – 10.45** **Atomic layer deposition in food packaging and barrier coatings;**  
Dr. Pirjo Heikkilä, VTT
- 10.45 – 11.30** **Lunch break**

### **COMPOSITES – Chaired by Dr. Pirjo Heikkilä, VTT**

- 11.30 – 12.00** **Characterization of nanoparticles in polymers and their impact on the morphology for films for food packing;**  
Prof. Geoffrey R Mitchell, Institute Polytechnic Leiria, PT  
Donatella Duraccio, Marilena Pezzuto & Clara Silvestre, CNR ICTP, IT
- 12.00 – 12.30** **Mechanical, Thermal and Morphological properties of Polylactide/Polyhydroxybutyrate/Nanocomposite blends;**  
Trevor W Woods, Werner J Blau, Kevin O’ Connor & Ramesh P Babu, Trinity College, IE
- 12.30 – 13.00** **Properties of PLA based micro- and nanocomposites;**  
Dr. Karol Leluk & Marek A. Kozlowski, Wroclaw University of Technology, PL
- 13.00 – 13.30** **Coffee Break**
- 13.30 – 14.00** **Antibacterial composites based on iPP for food packaging application;** Dr. Donatella Duraccio, CNR ICTP, IT
- 14.00 – 14.30** **Effect of process history on natural fibre properties in composites;**  
Dr. Kalle Nättinen, VTT

## Costs & Reimbursements

Workshop, booklet of abstracts, and coffee and refreshments during the coffee breaks are free of charge for the participants. Salad buffet served in the evening of September 15 will be sponsored by VTT. However, participants may have lunch on September 16 on their own expense. COST Action reimburses mainly the speakers and poster presenters coming from abroad or Finland outside of Metropolitan Helsinki area. Likewise, a limited number of the MC members of the Action can be reimbursed.

## Espoo

The city of Espoo is the second largest city in Finland. It is a technologically advanced city where opportunities are created by an internationally unique environment of science, art and economic innovation. Closeness to services and good traffic connections guarantee a functional living environment. In addition to a safe urban environment, everyone has access to the land, sea and forests in Espoo. Nuuksio, the largest national park in southern Finland, offers wilderness experiences right in the heart of the metropolitan capital region.

## Otaniemi Technology Hub

Many call it the Silicon Valley of Finland, others as the heart of Finland's Hi Tech. Otaniemi is situated 15 minutes west of Helsinki in Espoo. Otaniemi Technology Hub is the leading technology hub in Nordic countries, featuring a mix of world-class research organizations, academic institutions and over 800 companies from start-ups to multinational corporations. Twice selected by the EU as one of the most innovative regions in Europe, Otaniemi is a community of over 32,000 people with 16,000 students and 16,000 technology professionals.

## Transportation

### From Airport to Helsinki:

A regular service of Finnair buses between Helsinki-Vantaa airport and the Helsinki City terminal next to the Railway Station is available. You can also take a bus number 615, this bus comes also to railway station. More:

[http://www.finnair.com/finnaircom/wps/portal/Transportation/en\\_INT](http://www.finnair.com/finnaircom/wps/portal/Transportation/en_INT)

Taxis between the Helsinki centre and the Airport cost about 35-40 € and takes about 30 min. There are also three taxi operators at Helsinki Airport that offer special taxi services (like yellow AIRPORT TAXI), fixed fare shared taxi and tours and chartered drives: [http://www.airporttaxi.fi/index\\_airporttaxi\\_en.html](http://www.airporttaxi.fi/index_airporttaxi_en.html).

### From Helsinki to Otaniemi:

From Helsinki you can take bus to Otaniemi. (The distance between centre of Helsinki and Otaniemi, Espoo is about 15 km). Buses 102 and 103 leave at bus station Kamppi (Espoo terminal, platform 41 or 42) at the centre of Helsinki. Buses 194 and 195 leave at bus station Elielinaukio (platform 36) next to the Railway Station at the centre of Helsinki.

Taxis between the Otaniemi and city center cost about 20 € and take about 10 minutes.

### From Airport to Espoo:

You can take bus No 540. Change bus at Leppävaara (bridge above railways near big shopping mall, after the tunnel), and take bus No 510. This bus has a stop next to the venue. You can also take a taxi. The price of taxi is 40-50 € and it takes about 30 - 45 min from airport to Espoo.

## Accommodation in Espoo

A list of three closest hotels to the venue is provided below. Participants are asked to make their own reservations to the hotels.

**800 m / 10 min from venue**



**Radisson Blue Hotel** (<http://www.radissonblu.com/hotel-espoo>)

**Address:** Otaranta 2, FI-02150 Espoo, Finland

Hotel Tel: +358 (0)20 1234 705

Hotel Email: [info.espoo@radissonblu.com](mailto:info.espoo@radissonblu.com)

**Reservations:**

Telephone: +358 (0)20 1234 700

Fax: +358 (0)20 1234 740

Email: [reservations.finland@radissonblu.com](mailto:reservations.finland@radissonblu.com)

**Standard room 152 €,**

**Advance Purchase 20% Off Offer 121,60 €**

**1,6 km / 20 min from venue**



**Sokos Hotel Tapiola Garden**

(<http://www.sokshotels.fi/en/hotels/espoo/>)

**Address:** Tapionaukio 3, FI-02100 Espoo, Finland

Hotel Tel: +358 (0)20 1234 616

Hotel Fax: +358 (0)20 1234 617

Hotel Email: [tapiolagarden.espoo@sokshotels.fi](mailto:tapiolagarden.espoo@sokshotels.fi)

**Reservations:**

Sokos Hotels Sales Service Centre

Tel. +358 20 1234 600

<http://www.sokshotels.fi/en/hotels/espoo/>

**Standard room from 120 €**

**5,3 km (bus/taxi)**



**Hotel GLO Espoo Sello**

(<http://www.hotelglo.fi/en/glo-espoo-sello>)

**Address:** Leppävaarankatu 1, FI-02600 Espoo, Finland

Hotel Tel: +358 (0)10 3444 200

Email: [sello@hotelglo.fi](mailto:sello@hotelglo.fi)

**Reservations:**

Tel. +358 9 5840 954

Email: [sellosales@hotelglo.fi](mailto:sellosales@hotelglo.fi)

**Standard room rate 145 €**

## For more information

Dr. Mika Vähä-Nissi, Chair of Workshop, [mika.vaha-nissi@vtt.fi](mailto:mika.vaha-nissi@vtt.fi), +358 40 530 8472

Auli Rautakivi, Secretary of Workshop, [auli.rautakivi@vtt.fi](mailto:auli.rautakivi@vtt.fi)