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ActInPak COST Action FP1405

Active and intelligent (fibre-based) packaging – innovation and market introduction

NEWSLETTER

Volume 5

EDITORIAL

Welcome to the fifth newsletter of the COST Action FP 1405. Currently, 43 countries are involved in the network, with participants representing 209 academic institutions, 35 technical centres, and 83 industrial partners. We are looking forward to new members.

In the meantime, we have entered the third Grant Period, running from 1-5-2017 to 30-4-2017. Our activities are running according to plan. We would like to thank all of you for your feedback regarding the Monitoring Progress Report. With your help, it was possible to show all progress of Action and submit report in time to COST Office. Our achievements were quite impressive! Once we get the feedback of the Rapporteur the Action Chair will inform you.

Our Showroom on active and intelligent packaging is quite impressive. You are all welcomed to send us samples of active, intelligent, interactive packaging in the market you find in your country or examples in the development stage.

Some overview about our activities is shortly presented in Newsletter, more information is available at our [website](#) and [LinkedIn](#).

Sanne Tiekstra, Action Chair

Diana Gregor Svetec, Editor

UPDATES FROM THE WORKING GROUPS

All Working Groups are working actively on their publications, either in large or small groups.

During the upcoming Budapest meeting the three industry leaflets on active packaging, intelligent packaging, and legislation will be published and put to the test. Let's hope the industrial participants are as enthusiastic about it as we are!

Also, we would like translate these leaflets into local languages so it is easy accessible for industry. Please contact WG1 Leader Selçuk Yildirim (selcuk.yildirim@zhaw.ch) if you would like to help us with that.



COST Action FP1405 ActInPak

Duration:
2015-2019

More information:
www.actinpak.eu
www.linkedin.com/groups/COST-FP1405-Actinpak-8254568/about

More information:
www.actinpak.eu

WG2 is preparing a paper on market aspects to bring technologies successful to the market. Within this paper, they will reflect on the feedback from industrial participants that we received during previous meetings such as in 2015 in Utrecht, and in 2017 in Valencia.

This paper as well ideally should be ready in September in order to get the feedback from industry once more.

As for WG3, they are currently in the middle of doing preliminary inventory calculations for our demonstrator products.

The upcoming time will be used to gather as much input about specific technologies as possible to be able to finish the calculations.

Furthermore, a drawing of the A&I value chain from the perspective of sustainability is being prepared by this Working Group.

More information:
www.actinpak.eu/student-contests-scs

STUDENT CONTESTS

Our first Student Contest was not as successful as we had hoped, but we did receive applications, mainly for the economic review.

The best ones have been selected and are currently evaluated in order to invite the winner to present their work during our next network meeting in November 2017 (read more further on in the newsletter).

More information:
www.actinpak.eu/training-schools

TRAINING SCHOOLS

COST Action FP1405 (ActInPak) organised in June together with Tampere university of technology (TUT) a summer school "Active and intelligent packaging solutions", which was a success.



The summer school took place at Tampere University of Technology in Tampere, Finland, and was organised by research group of Paper Converting and Packaging Technology. Summer school brought together researchers and post-graduate students from over ten different countries across Europe delivering an introduction to active and intelligent packaging and current research themes relating to these packaging solutions. In addition to comprehensive lectures, researchers also had a chance to participate to an extrusion coating trial at TUT's unique pilot line and some laboratory exercises relating to analysis of packaging materials. Furthermore, the group visited Metsä Board TAKO mill in the city center of Tampere.

The summer school covered topics like

- Packaging materials and their production
- Active and intelligent packaging solutions (AIP)
- Preservation of food with AIP
- Potential of nanocellulose for AIP
- Food contact legislation and migration
- Multisensory evaluation of AIP
- Sustainability and LCA

Contact person: Senior Research Fellow, Dr. Johanna Lahti

EXPERT PANEL DISCUSSION (WG1)

On 7th of September, Working Group 1 organises an Expert Panel Discussion in Budapest. For this panel discussion, mostly industry is invited to discuss the technological and scale up challenges of active and intelligent packaging solutions, and the development of a roadmap for future research and development to overcome those challenges.

Up to now, we have 22 potential participants from the industry who confirmed their interest to attend. We will also have some people from research institutes and universities to present the research papers we are preparing to give an overview prior to the panel discussion. Dear members if you have any industrial partners who can contribute to the topic let us know. You can contact Selçuk Yildirim (selcuk.yildirim@zhaw.ch).

ActInPak MC/WG Conference

Next ActInPak MC/WG Meeting will take place in Israel on 7-9 November 2017. Based on the successful Bled meeting, the program will comprise a Management Committee Meeting, a conference (this time with a focus on social sciences and application/implementation), as well as a design workshop.

Within this day, the participants will be asked to envision a scenario and make a prototype as a step forward from the demonstrators that were decided upon in the previous GPs.

The workshop will be attended by different industries, scientists to be able to benefit from cross-sectoral approaches.

Also Working Group Meetings will be hosted to follow up on previous meetings and work and draft further activities. Furthermore, industry will be gathered and actively invited to participate.

You are all invited to join us!

Call for abstracts – deadline 1st September 2017

We would like to give you the opportunity to present your work in maximum 10 minutes during the meeting. Topic of the meeting is *Application and Communication of Active and Intelligent Packaging*. Deadline for the submission of an abstract is 1/9/2017, to be submitted addressed to our WG4 Leader David Ravnjak, David.RAVNJAK@papur-vevce.si. The abstracts will be reviewed and selected by ActInPak's Steering Committee.

Pre-registration for the Meeting – deadline 1st September 2017

Pre-registration has started for this meeting. In case you have not received the invitation e-mail, please contact Sanne Tiekstra (s.tiekstra@bumaga.nl)! Please register before 1/9/2017 through [our website](#).

More information:

www.actinpak.eu/actinpak-events

More information:

www.actinpak.eu/actinpak-events/mcwgs-meeting-application-communication

DISSEMINATION EVENTS

ActInPak at the EuroNanoForum 2017 in Malta (21-23th of June 2017)

During the EuroNanoForum 2017, a workshop was organised about "COST contribution to the fields of Nanotechnology and advanced materials". Seven different COST actions have been selected and presented. Julien Bras (Vice Chair of ActInPak) has explained our objectives, our organisation and some highlights related to the nanotechnology in active and intelligent packaging. This "networking event between COST networks" was very useful to share the different organizations and procedures of each action. Our STSM videos have been considered as an innovative way of sharing knowledge and will be implemented by other actions. Launching European conference or editing an e-Book could be ideas for us.

Concerning the ENF 2017, exhibitors were focusing on nanotechnology with high quality input and sessions speakers presented more about advanced materials last industry input. Main feedbacks are that strong investment in nanotechnology and advanced materials industry for the coming 3 years are expected (about 700 Million euros). An event is planned the 4 & 5th of October at Brussels to discuss future call in this topic.

Concerning packaging, some new detectors of bacteria, new plastic nanocomposite for beer bottles with high barrier, new antibacterial Ag-TiO₂ nanoparticles, essential oil encapsulation innovative process, plasma treatment for flexible biopackaging, new PEF bioplastics, new printing equipment for printed electronic or new standardization worldwide for nanosafety are good examples to inspire any ActInPak Partners"



STSM

After a very fruitful Grant Period 2, which counted 11 different STSM funded within our Action, it was decided to further increase the possibility of ActInPak to support young students in carrying on their active packaging related research in the different countries participating to the action. We are thus aiming at supporting at least 15 different STSM in GP3 thanks to the additional funding reserved for this purpose. Up to now we already had 3 requests funded for the present grant period, and we really hope to be able to fund new ones in the near future.

For those interested the suggestion is to check the ActInPack website to retrieve all the needed information.

Main information about the funded STSM in GP2 and 3 are given in Table.

Reports and video post casts are available at [our website](#).

More information:
www.actinpak.eu/general-information-about-stsm

Applicant	GP	from	to	Duration (days)	Title
Fanny Hoeng	2	Grenoble Institute of Technology, INP-Pagora (FR)	University of Pardubice (CZ)	12	Printing and integration in flexible devices of nanocellulose/silver nanowires ink
Adriane Cherpinski Correa	2	Instituto de Agroquímica y Tecnología de Alimentos IATA-CSIC (ES)	VTT Technical Research Centre of Finland (FI)	17	Characterization of Surface Properties of Multilayers of Nanocellulose
Riccardo de Leo	2	University of Modena and Reggio Emilia (IT)	Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem (IL)	60	Antimicrobial edible packaging to increase shelf-life and food safety
Lidija Slemenik Perše	2	National Institute of Chemistry (SI)	Swansea University (UK)	13	Rheology of functional materials for smart packaging
Christian Kossel	2	PTS (DE)	Bioinicia (ES)	11	Potential applications of electrohydrodynamic processes in paper and board - Use of cellulosic nanofibers for high performance papermaking products
Urška Vrabič Brodnjak	2	University of Ljubljana, Faculty of Natural Sciences and Engineering (SI)	University of Chemical Technology and Metallurgy (BG)	7	Obtaining of paper samples, containing of bio-based components and investigation on its influence over the properties of paper
Jose Ramon Diaz	2	University of Helsinki (FI)	École Nationale Supérieure des Mines de Paris (FR)	42	Rheological Characterisation of Xylan/NFC-based Hydrogels Crosslinked by Tannic Acid
Daniel Martinez Filgueira	2	University of Vigo (PT)	Paper and Fibre Research Institute (NO)	11	Hydrophobic lignocellulosic films for packaging applications
Verena Ambros	2	IFA Tulln, Institute of Environmental Biotechnology (AT)	INP – Pagora (FR)	25	Antimicrobial packagings based on enzyme-functionalized fibrillated celluloses
Damla Dag	2	Middle East Technical University (TR)	Zurich University of Applied Sciences/ZHAW (CH)	26	Investigation of the Oxygen Barrier Properties of Polyethylene Films Coated with Green Tea

					Extract Loaded Liposomes
Idalina Gonçalves	2	University of Aveiro (PT)	INP – Pagora (FR)	34	Chitosan-genipin paper coating – an alternative approach for active packaging materials
Sergio Torres Giner	3	Institute of Agrochemistry and Food Technology (IATA-CSIC) (ES)	Universidade do Minho, Braga (PT)	91	Development of PHA/fiber-based composites with antimicrobial performance for active food packaging applications
Tanja Radusin	3	Institute of food technology (RS)	Institute of Agrochemistry and Food Technology (IATA-CSIC) (ES)	15	Preparation of active packaging films based on biopolymers and bioactive extracts from plants and fungi by electrospinning technique
Raquel Requena Peris	3	Institute of Food Engineering for development (ES)	KTH Royal Institute of Technology - KTH Biotechnology Department (SE)	88	Sequential subcritical water extraction and acid hydrolysis for obtaining cellulose nanocrystals and xylans from rice husk to be used as reinforcing and active agents in food packaging materials