Deliverable 6.5

2nd Workshop

"High Performance Thermal Insulation (HPI) 2013 - Towards Near Zero Energy Buildings"

Author(s): **G. Reichenauer** **ZAE Bayern**
E. Goiti **TECNALIA**
O. Garcia **TECNALIA**

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VERSION RECORD

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V_1	2013/11/29	G. Reichenauer	Update
V_2	2013/12/05	E. Goiti, O. García	Revision
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EXECUTIVE SUMMARY

The Deliverable 6.5 is a public document delivered in the context of WP6, Task 6.3 – Workshops and International Conference, with regard to the 2nd Workshop performed at month 30 of the AEROCOINS project, on the 27th and 28th of November 2013.

The Workshop was originally scheduled for M24 at EMPA; in consultation with the other partners and the PO, the Workshop was shifted to M30 at ZAE, Würzburg, Germany. One of the reasons for shifting the Workshop was the fact that from September, 19th to 20th, 2013, the 11th International Vacuum Insulation Symposium - IVIS 2013 took place at EMPA, Dübendorf. Therefore another workshop related to high performance thermal insulation in June, i.e. right before the summer break, in the very same place seemed unrealistic in terms of acceptance. In addition, the schedule for the AEROCOINs Work Packages suggested to rather have a workshop at a date more closely related to the actual transition from materials to components and component integration.

This document describes the 2nd AEROCOINS workshop on "High Performance Thermal Insulation (HPI) 2013 - Towards Near Zero Energy Buildings", organised by ZAE and TECNALIA, at the Energy Efficiency Center (EEC), ZAE Bayern (Würzburg, Germany).

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ABBREVIATIONS

EEC	Energy Efficiency Center
PO	Project Officer

1 INTRODUCTION

This document is a report on the 2nd AEROCOINS workshop organised on the 27/28th of November 2013 at the EEC, Würzburg (Germany).

Since the AEROCOINS project is at the time of the workshop at the transition from providing large boards of newly developed material and realizing their implementation in mock-ups, the focus of the workshop was specifically more on competitive insulation systems and integration rather than materials synthesis.

In particular, the workshop aimed at bringing together the people in the field of thermal insulation, building physics and architecture to:

- Present recent developments in terms of insulation materials and components suited for building applications;
- Address problems to be solved upon integration and combination of new components towards zero energy buildings;
- Give an overview over current demo-activities;
- Discuss degradation and recycling issues related to next generation buildings.

2 DATE, VENUE AND ORGANISERS OF THE 2ND AEROCOINS WORKSHOP

Date and venue:

27/28th of November 2013, Würzburg, Germany

Organisers:

ZAE Bayern and TECNALIA

Address of Venue:

Energy Efficiency Center
Raum Planck, ZAE Bayern
Am Galgenberg 87
97074 Würzburg

Local Contacts:

Dr. Gudrun Reichenauer
Dr. Hans-Peter Ebert

ZAE Bayern
Am Galgenberg 87
97074 Würzburg
Germany

Workshop email:

HPI-2013@zae.uni-wuerzburg.de

3 WORKSHOP PROGRAM AND PARTICIPANTS

3.1 PROGRAM

Enclosed the program mailed out in the second announcement of the workshop is given. In addition to the oral presentations posters were presented during the coffee breaks.

ZAE BAYERN
Bayerisches Zentrum für Angewandte Energieforschung

High Performance Thermal Insulation (HPI) 2013 - Towards Near Zero Energy Buildings – Programme:

Wednesday, November 27th 2013

1:00 – 1:20 pm	reception and registration
1:20 – 1:30 pm	welcoming introduction from H.-P. Ebert, ZAE Bayern

Talks and discussions

SESSION 1 (Chair E. Goiti Ugarte, Tecnalia)

1:30 – 2:00 pm	Microporous silica based thermal insulation *Geisler, M. (Evonik Industries AG)*
2:00 – 2:30 pm	Development of aerogel-based next generation high-performance insulation materials: bridging the gap from laboratory to products *Koebel, M. (EMPA)*
2:30 – 3:00 pm	Saint-Gobain and High Performance Insulation *Passon, U. (Saint Gobain)*
3:00 – 3:20 pm	Coffee break

SESSION 2 (Chair M. Founti, NTUA)

3:20 – 3:50 pm	Break through super insulation materials: challenges and opportunities *Marchal, P. A. (ENERSENS)*
3:50 – 4:20 pm	2020 – Thermal Superinsulations *Ebert, H.-P. (ZAE BAYERN)*
4:20 – 4:50 pm	Novel foams as core material for VIP building applications *Chau V. Vo (Dow Europe GmbH)*
4:50 – 5:20 pm	Discussions of the day's topics
5:25 – 6:15 pm	Guided tour ZAE Bayern
7:45 pm	Conference Dinner downtown in the wine cellar of the famous Würzburg Residence

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Thursday, November 28th 2013

SESSION 3 (Chair U. Heinemann, ZAE Bayern)

8:30 – 9:00 am	New challenges on building systems with superinsulation materials *Garay, R. (Tecnalia)*
9:00 – 9:30 am	VIPs - an established high performance insulation for B&C applications *Knoll, S. (Porextherm Dämmstoffe GmbH)*
9:30 – 10:00 am	New core materials for vacuum insulation panels *Caps, R. (Va-Q-Tec AG)*
10:00 – 10:20 am	Coffee break

SESSION 4 (Chair M. Koebel, EMPA)

10:20 – 10:40 am	A new IEA-EBC Annex: Long-Term Performance of Super-Insulation in Building Components & Systems *Quenard, D. (Centre Scientifique et Technique du Bâtiment – CSTB)*
10:40 – 11:10 am	Super insulation material and aging *Zarrabi, A. (University of Goethenburg)*
11:10 – 11:40 am	Energy efficiency: from lab to building *García Ortega, M. (Acciona S.A.)*
11:40 – 12:00 am	Synergy potential in NMP-EeB and related NMP projects; Nano-E2B-Cluster *Dierselhuis M. (EU, Project Technical Advisor)* *Goiti, E. (Tecnalia)*
12:00 – 12:20 pm	Discussions of the day's topics, Closing remarks
12:20	**Coffee, End of the Workshop**

3.2 PROGRAM

90 participants from all over Europe attended the workshop. The attendees were from industries (30 companies), universities and research institutes (20). In particular, all AEROCOINs partners as well as partners from the Nano-E2B Cluster attended the workshop.

The attendees came from 16 different European countries (e.g. D,F, NL, DK, GR, N, E, B, SVN, FL,SE, CH) as well as Hong-Kong.

4 KEY POINTS ADDRESSED/IDENTIFIED AND CONCLUSIONS

The workshop attracted a lot of interest in particular from industries and partners in Nano E2B projects. The vivid podium discussions at the end of each day as well as during coffee breaks and the dinner reflected the current importance of the workshop's topics.

Non-confidential presentations and posters will be posted, with the agreement of the author, on the web. The attendees will be granted password secured access to the information for about 30 days after notification to allow for download.

During the workshop the following key points for high performance thermal insulations (HPI) were addressed; hereby high performance insulation was defined by thermal conductivities < 0.02 W/(mK):

1) performance & handling
    a) thermal conductivity
    b) costs (added values, e.g. comfort for example with respect to moisture)
    c) handling (easy to handle on construction site)
    d) installation (time needed for installation, components required for installation that reduce the overall performance of the thermal insulation material, specific training of architects and craftsmen)
2) characterization of HPI components (homogeneity, on-site measurements)
3) building regulations, standards (extensions required?)
4) long term stability of thermal and mechanical properties of nanomaterials based HPI such as VIP cores, fumed or precipitated silica boards, aerogels (high surface energies, stability of hydrophobization)
5) recycling
6) health risks, public acceptance

In the current phase, costs and handling issues are key characteristics that represent thresholds that must be overcome to allow introduction of HPI into the market. In the second phase, installation related topics, standards and long term stability as well as public acceptance have to be addressed.

ACKNOWLEDGEMENTS

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