

Date
 2017-03-09

Consortium Materials technology for thermal energy processes – minutes board meeting no 1/17

Date	March 8, meeting time 09.00-11.00	
Place	Telephone meeting	
Participants	Erik Skog (chair) Jouni Mahanen Thomas Norman Anna Jonasson Søren Aakjær Jensen Dilip Chandrasekaran Bo Jönsson Marie-Aude Porter Helena Oskarsson Annika Stålenheim Jan-Erik Svensson Bertil Wahlund (secre.)	Erik Skog AB Amec Foster Wheeler B&W Vølund E.ON Värme Sverige Dong Energy Sandvik Heating Technology Sandvik Heating Technology Siemens Siemens Vattenfall Chalmers Energiforsk
Prevented	Christoph Gruber Sebastian Kaiser Edgardo Coda Lars Mikkelsen Eva-Katrin Lindman Erik Dahlén Peter Emvin Matti Huhtakangas Jesper Ederth Johan Moverare Pamela Henderson Rikard Norling	Andritz Andritz Amec Foster Wheeler B&W Vølund Fortum värme Fortum värme GKN Aerospace MH Engineering Sandvik Materials Technology Linköpings universitet Vattenfall/KTH Swerea KIMAB
Distribution	participants, prevented and Sven Andersson Per Kallner Andreas Sundlöf Erik Westman Henrik Lindståhl Mikael Fransson Ulf Hagman Claes Sommansson Erika Antonsson Toni Holkko Lucas Enström Ulf Lindqvist Jesper Baaring Johan Thelander Magnus Eriksson Lars Hammar Patrik Schneider Erik Thornström	
		B&W Vølund/Götaverken Vattenfall Söderenergi Söderenergi Tekniska verken i Linköping AB Tekniska verken i Linköping AB Göteborg Energi AB Göteborg Energi AB Göteborg Energi AB Gävle Energi Gävle Energi Jämtkraft AB Öresundskraft Karlstads Energi AB Mälarenergi AB Kraftringen Kraftringen Swede energy

1 Agenda

The distributed agenda was approved.

2 Person to approve minutes

AS, Vattenfall, was elected to approve minutes (next present person/company on participants list).

3 Minutes from board meeting 4/16

The minutes from board meeting 4/16 was approved with the following comments.

- Item 5, Follow up of project. Project KME-720, *The effect of increased fractions of waste wood on water wall- and superheater corrosion* show some deviations, as water wall probes should have been inserted in the fins in the water wall during the summer revision 2016, but the installation was stopped on commercial basis due to uncertain erosion risks. JES and JM informed that the installation is modified and that the probe now constitutes only small erosion risks. The plan is to insert the probe by summer revision 2017.
- Item 6, Budget. BW informed that a ToR for the synthesis report is elaborated and submitted to SEA. However, no answer yet. BW will continue the dialogue.
- Item 7, The future of KME programme. The input from KME stakeholders have been limited so far.

4 Notifications

HO informed about course in Additive Manufacturing to be held at Linköping university, March 28, annex 1.

4.1 Coming dissertations

At the new web site, coming dissertations and conferences will be posted. The board members are recommended to send information to BW.

Upcoming dissertations

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Recently defended dissertations:

Erik Larsson, doctoral dissertation, January 20, Chalmers/HTC, active in the projects KME-709, KME-711, KME-720

Annika Talus, lic thesis, December 2 (or 3), KTH

4.2 Coming conferences

10th International Conference on Microscopy of Oxidation, April 3-5 2017, Loughborough University, UK,

<https://www.liverpool.ac.uk/engineering/events/microscopy-of-oxidation/>

25th European Biomass Conference and Exhibition (EUBCE), June 12-15, 2017, Stockholm, Sweden, <http://www.eubce.com/home.html>

20th European Corrosion Congress – EUROCORR, September 3-7, 2017, Prague, Czech Republic <https://eurocorr.org/>

5 Follow up of project

The project status report will be submitted at the end of this month. No new deviations reported.

Finalised project:

- KME-708, *High temperature corrosion in waste-wood fired boilers*, is finalised and a final report is under development. Based on the open report to Swedish Energy Agency, a short report in Swedish is put together, annex 2. As the report is based on open results (does not include confidential information), the report will be distributed outside KME. It will be a good marketing of the programme. Results in brief:
 - o High corrosion rates on low alloy steels, while stainless steels, FeCrAl and Ni based alloys shows much better performance.
 - o Small amounts of Cl and Pb increases the corrosion significantly
 - o Lab and field exposures showed the same result.
 - o Advanced steels were identified with similar corrosion resistance as Ni based alloys, but 30-50% cheaper.
 - o Changing the fuel chemistry with sewage sludge as additive reduces the initial corrosion in all test (prevented attacks by K, Na, Cl and Pb.) These tests will continue and be further developed in project KME-718, *High temperature corrosion in used-wood fired boilers – fuel additives and coatings*.

6 Budget

BW showed the updated budget follow. Follow up is made of funds used, requested cash and reported in-kind. The reporting follows the plan and two projects reports in-kind contribution over 100 %.

BW reminded about the reporting dates for industry in-kind:

- March 31 the following year for the period July-December
- September 30 for the period January-June

Draft ToR for the synthesis report elaborated and provided to SEA, but no clear answer yet. **BW will continue the dialogue.**

7 The future of KME programme

BW and ES informed that a meeting with SEA is planned to 31 March.

The KME-programme could in the next stage be more comprehensive and wider, and include not only materials, but also combustion, flue gas cleaning, process technology solutions and similar topics, however related to materials. Besides wider scoop, projects could have different integrated parts:

- Part with fundamental research, 100 % financed from Energy agency
- Part with applied research, like "normal KME" 40/60 financing (core of project)
- Part with very applied development, 20/80 financing, consultants work

At last board meeting, all KME stakeholders got the task to send their research question to BW before this meeting, 1/2017. The input from KME stakeholders have however been limited so far. Any input on the programme plan/description is appreciated. This programme plan/description will then be

provided to the Swedish Energy Agency. ES and BW continues the dialogue with stakeholders within the future groups as well as stakeholders not represented in the future group. Besides, a workshop with Energy companies and plant owners is planned (discussed below in item 9.2).

Comments:

- To the meeting with Swedish Energy Agency there are mainly two questions:
 - o How will SEA finance the forum and platform, and how will they finance the research as such, i.e programme set up.
 - o What research topics will they finance. KME can provide industry relevant research topics.
- Other important aspect: industry has a long planning horizon for research and budgeting; the industry perspective is long term and the internal planning process is long.

8 Programme conference HTC/KME 2017

The conference will be held in Gothenburg, at Lindholmen conference centre, **March 21-22**. Key note speeches will be made by HTC advisory committee, Professor John Nicholls and Mathias Galetz, DECHEMA. Presently 72 participants. Registration is made at:
<http://www.energiforsk.se/konferenser/kme-htc-research-symposium-2017/>

9 Others

9.1 Workshop Energy utilities and plant owners

A workshop with Energy companies and utilities (plant owners), in order to get input on relevant problem areas to work with, is planned during the spring. The aim is to identify problem areas and challenges and how the research can contribute to find solutions. The outcome from the workshop shall be incorporated in the programme plan.

9.2 Celebration of KME 20 years

KME is turning 20 years 2017. The revised suggestion is that the celebration is held after the next board meeting, May 9, Stockholm. Preliminary programme presentations 15.30-17, after that social activities and dinner at Energiforsk.
BW elaborates the programme.

Comments from board:

- SEA should be invited and preferably give a talk; they have funded the programme in all 20 years
- In presentations, it should be shown what have been achieved and how successful the programme has been over 20 yrs.

10 Next meetings

2017 meetings and conference:

- Physical meeting in May 9, Stockholm, 13-15, to be combined with the celebration of KME 20 yrs
- Telephone meeting in September/October, date defined later
- Physical meeting in November/December, Gothenburg, date defined later

- KME/HTC programme conference 2017, 21-22 March, Gothenburg

Minutes by

Bertil Wahlund

Minutes approval

A handwritten signature in blue ink, appearing to read 'Annika Stålenheim'.

Annika Stålenheim, Vattenfall

Minutes approval

Erik Skog, chairperson

OPTIPAM

Forskningsresultat och framtida möjligheter

Additiv tillverkning i metall

– Från design till produktion

Additiv Tillverkning (AT) har utvecklats från prototyp tillverkning till att bli konkurrenskraftig i förhållande till traditionella tillverkningstekniker. Nu har du möjlighet att lära dig mer om grunderna för AT i metall!

Flera initiativ har lanserats i andra länder för att främja additiv tillverkning, där erfarenheten visat att utökad kunskap är nyckeln till att maximera teknikens potential. Nu presenterar vi de senaste resultaten från projektet och diskuterar vad det kan innebära för er. Projektet är en del i Vinnovas satsning, "Produktion 2030".

ANMÄLAN & INFO

Plats: Linköpings universitet, Hus A, Sal ACAS

Tid: Tisdagen 28:e mars, kl 9.00-16.00

Anmäl att du kommer till:

lars-erik.rannar@miun.se

senast tisdag 21:e mars 2017. Lunch finns att köpa på egen bekostnad.

Kostnadsfritt i övrigt, begränsat antal platser.

PROGRAM Tisdagen 28/3, 9.00-16.00

Session I 9.00-11.30

> 9.00-09.30

Introduktion till additiv tillverkning i metall

Lars-Erik Rannar, Mittuniversitetet

> 09.30-10.00

Introduktion till design för additiv tillverkning

Lars Pejryd & Sebastian Hällgren, Örebro universitet

> Kaffe

> 10.15-11.30

Vad kostar det att printa ut i metall? Vilka materialegenskaper kan man förvänta sig? Hur kvalitetssäkrar vi materialet? – en kavalkad

Örebro universitet och RISE/SP

LUNCH – med möjlighet till diskussioner

Session II 13.00-14.30

Presentation av demonstratorer

> 13.00-13.20

SAAB Aeronautics, Magnus Kahlin

> 13.20-13.40

Siemens Industrial Turbomachinery, Håkan Brodin

> 13.40-14.00

SAAB Bofors Dynamics, Sebastian Hällgren

> Kaffe

Session III 14.30-16.00

> 14.30-15.30

Design för additiv tillverkning – några praktiska exempel, Örebro universitet, Mittuniversitetet, Arcam

> 15.30-16.00

Frågestund, paneldiskussion



Med stöd från:



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