



European Cooperation in the field of Scientific and Technical Research


Building Integration of Solar Thermal Systems – TU1205 – BISTS

# Working Group Meeting of COST Action TU1205


## 8-9 September 2016-Warsaw

### “Building Integration of Solar Thermal Systems (BISTS)”

#### Soteris Kalogirou Action Chair



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Building Integration of Solar Thermal Systems – TU1205 – BISTS

# Agenda

- Welcome to participants
- Adoption of agenda
- Minutes of Barcelona meeting (Spain, April 2016)
- Report from the COST Office
  - News from the COST Office
  - Status of Action, including participating countries
  - Budget status, budget planning and allocation process
  - Non-COST countries
- Critical managerial issues
- Progress report of working groups
- STSM status, planning of activities
- Publications, dissemination and outreach activities
- Web news
- AOB



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Institute of Heat Engineering  
Institute of Heat Engineering


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## Welcome to participants

- Warm welcome to all.
- COST is based on willingness to contribute (**this is very important especially at this stage....**).
- No research is funded but networking activities.
- **Purpose of the meeting:** To coordinate the activities remaining until the end of the Action for:
  - Deliverables/Projects
  - Handbook
  - End of Action Conference
- Welcome from Dorota, Institute of Heat Engineering, Warsaw University of Technology.

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## Report from the COST Office

- Remember with new of e-COST system:
  - Submit everything electronically to the system – no paper copies are accepted any more.
  - Need to sign the presence form as before.
  - Need to be careful to upload all documents properly
  - No chance is given to carry out corrections.
- Unfortunately the rules change very often:
  - Last year period ended 30/6 (instead of 31/5)
  - New budget reduction by 16%
- Scientific officer Dr. Michael Pero invited but couldn't participate.

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## Status of the Action


- Status of Action, including participating countries:
  - 22 COST countries participating (next slide)
  - 32 MC members (+14 substitute members)
- Non-COST countries:
  - Two non-COST countries participating:
  - USA (James Russell-Appalachian State University)
  - Canada (Andreas Athienites-Concordia University)
  - They promise to send work to the Final Action Conference.

→ 24 months report just received. Generally positive evaluation ... show



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**Parties**

**Action details**

MoU	TU1205-MoU
CSD Approval date	21/11/2012
Start of Action	05/04/2013
End of Action	04/04/2017

**Participations**

Country	Date	Status
Austria	14/07/2013	Confirmed
Belgium	17/01/2013	Confirmed
Bulgaria	10/06/2013	Confirmed
Cyprus	30/11/2012	Confirmed
Denmark	01/02/2013	Confirmed
France	23/01/2013	Confirmed
Germany	17/01/2013	Confirmed
Greece	04/02/2013	Confirmed
Hungary	25/02/2016	Confirmed
Ireland	14/12/2012	Confirmed
Israel	29/10/2013	Confirmed
Italy	29/08/2013	Confirmed
Lithuania	03/07/2013	Confirmed
Malta	05/04/2013	Confirmed
Netherlands	18/02/2013	Confirmed
Poland	03/01/2013	Confirmed
Portugal	11/01/2013	Confirmed
Romania	25/02/2016	Confirmed
Serbia	20/12/2012	Confirmed
Spain	07/12/2012	Confirmed
Turkey	10/04/2013	Confirmed
United Kingdom	29/11/2012	Confirmed
<b>Total:</b>	<b>22</b>	


Facts

←


↓


**COST International Partner Countries**

Institution Name	Country
Appalachian State University	United States of America
Concordia University	Canada



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## Budget status, budget planning and allocation process

- Forth year budget 101,750 Eur.
- Main expenses:
  - Total for meetings 62,000 Eur.
  - Training schools = 21, 940 Eur
  - 4 STSM planned = 4,000 Eur. (1 carried out 1300 Eur)
  - Dissemination 1,500 Eur. (webpage)
  - Other = 2000 Eur. (Bank charges)

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## Meetings

- **YEAR 3**
- MC & WG First meeting – Guimaraes (July 2015)
  - Combined with Action Symposium
- MC & WG Second meeting – Barcelona (April 2016)
  - Combined with training school

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## New Budget reduction

- The COST Association has allocated a budget of 101,750 EUR for COST Action TU1205 for Grant Period 4 (2016-05-01 to 2017-04-04)
- New overall reduction of about 15% to all Actions.
- More later....

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## Critical managerial issues

- Pay more attention to emails received concerning deadlines (**very important**).
- Emphasis on managerial issues concerning payments.
  - Make a note and when we are late in paying - send an email (maybe something goes wrong) → 1-2 emails only please....
- Reimbursement procedure
  - All payments will be carried out simultaneously, so the sooner will complete the missing items the sooner all participants will get paid.

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## Procedures:

- Proof of participation is the attendance list.
  - Make sure you sign this list both days.
- Reimbursement claims are now send electronically through e-cost system.
- Mr. Charalambos Tsioutis and myself can answer questions concerning details.

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## Always remember .....

- Communicate to me any projects submitted/organised based on the Action, like:
  - New PhDs
  - New local funded research
  - New H2020 proposals, etc.
- Very important for the progress of the Action
- I need to know this even if the proposal was not successful.

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## Critical items:

- We are at the beginning of Year 4 (final) and we have a lot of items to prepare/deliver....
- Need commitment from everybody to deliver things on time.
- Please try to keep promises made and timetables agreed.... **Not done by most people so far.** There is no more time to correct things....
- We all need to complete the Action successfully.

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## WG1: Development and characterisation of new BISTS

- Task 1.1 Review of the state of the art **✓ DONE**
- Task 1.2 Development of new BISTS solutions (Year 3 & 4)
- Task 1.3 Characterisation of BISTS developed in Task 1.2 (Y 3 & 4)
- D.1.1. Review of current STS and identification of problems associate with their building integration. This review will also be submitted as a joint partner publication in a peer reviewed journal (Month 12) **✓ DONE**
- D.1.2. Annual STSM on BISTS development and characterisation for PhD students and Early Stage Researchers (Month 6, 18, 30, 42) **ON-GOING**
- D.1.3. Annual Training School for dissemination of expertise on BISTS development and characterisation techniques and new architectural solutions to PhD students and Early stage researchers (Month 18, 30, 42) **✓ JUST FINISHED**
- D 1.4. Report on the evaluation technologies available for BISTS characterisation (Month 24) **✓ DONE.**

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## WG2: Modelling and Simulation


- Task 2.1 Development of new mathematical and numerical models for BISTS (Years 3 & 4)
- Task 2.2 Validation and implementation of codes developed in 2.1
- D 2.1. Review of current STS modelling techniques. This review will also be submitted as a joint partner publication in a peer reviewed journal (Month 12) **✓ DONE**
- D.2.2. Annual STSM for PhD students and Early Stage Researchers on theoretical modelling and numerical simulation of thermal behaviour of BISTS (Month 6, 18, 30, 42) **ON-GOING**
- D.2.3. Annual Training School for dissemination of expertise to PhD students and Early Stage Researchers (Month 18, 30, 42) **✓ JUST FINISHED**
- D 2.4. Report on the validation of developed codes, both thermal and optical **✓ DONE**
- D 2.5. Report on the new models developed during the project and potential for adaptation for RES (Month 42).
- D.2.6. Report on the development of new models for innovative integrated STS applications (Month 46)



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## WG3: Investigation of new applications for innovative BISTS


- Task 3.1 Design of innovative BISTS designs
- Task 3.2 Fabrication of BISTS prototypes
- Task 3.3 Characterisation of novel BISTS indoors and outdoors to assess the actual performance in real conditions
- D.3.1. Review of current STS and the suitability of integration onto building structures for domestic, commercial and industrial buildings (Month 12). **✓ DONE**
- D.3.2. Annual STSM for PhD students and Early-stage researchers on design, fabrication and characterisation of innovative integrated STS/ RES (Month 6, 18, 30, 42) **ON-GOING**
- D.3.3. Annual Training School to disseminate expertise to PhD students and Early Stage Researchers (Month 18, 30, 42). **✓ JUST FINISHED**



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## WG3 continue...

- D.3.4. Report on fabricated integrated STS prototypes optimised for increased efficiency and low cost. Full building services integration (e.g. into existing heating, cooling, hot water) or stand-alone operation but integral to the structure. This will depend on the extent of own research funding allows (**Month 36**). **Need a report ASAP (collaboration between WG1 and WG3)**
- D.3.5. Report on the performance of new integrated STS/RES prototypes: A country performance comparison with geographic diversity (South, Central and North Europe), (**Month 42**).
- D.3.6. Handbook for architects and building services engineers on the developed BISTS solutions for the design market ready products. (**Month 46**). Discuss this in a dedicated session.

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## More on Handbook

- This will include new prefabricated products, a variety of mounting surfaces (vertical, sloped, horizontal) and the use of new materials, like PCM. The handbook will also include the development of BISTS through novel modelling techniques, fabrication and assembly of BISTS prototypes specifically tailored to building element integration, performance measurement of novel BISTS and the suggestion of standardised procedures and the determination of a range of applications for BISTS.

→ WG 3 to coordinate HB not to write it!!

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## Short Term Scientific Missions (STSM)

- Duration 5 days to 3 months (max. 6 month for ESR)
- Overall cost:
  - Max 2500 EUR for STSM up to 3 months
  - Max 3500 EUR over 3 months (ESR)
- Calculation based:
  - Daily allowance: 60-90 EUR
  - Travel: 300 EUR

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## In our Action:

- 4 STSM are planned for fourth year.
  - **ONE carried out.**
  - **One application received 2500 Eur (?) [too much]**
- Total Budget 4,000 EUR (1000/stsm).
  - **Already spent 1300 Eur.**
- Use STSM almost exclusively to prepare Action deliverables.
- Any applications to STSM manager first.
- Then application should proceed through the e-cost system.
- Needs to be completed by March next year.



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## Publications, dissemination and outreach activities

- These will also be discussed in following sessions.
- Next major event is **Action Conference**
  - Everybody should participate – normal activity of the Action
  - Need at least a paper by each group on BISTS.
  - More on this later on dedicated session...
  - Modifications for this meeting to leave more money for the conference invite more people), BUT
  - **No paper in conference means no invitation.....**

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## Handbook publication

- Need to have state-of-the-art material.
- Need to deliver **on time**. This is a serious commitment – to produce something valuable.
- Work already allocated from previous meeting-progress to be discussed in detail in following sessions..
- **Now is NOT too early any more.... Need to proceed with a fast pace....**

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## Web Page

- 1. COST official web page
  - [http://http://www.cost.eu/domains\\_actions/tud/Actions/TU1205](http://http://www.cost.eu/domains_actions/tud/Actions/TU1205)
- 2. Action web page
  - Web site: <http://www.tu1205-bists.eu/>
  - Password: cost 1234!
- **Now includes all deliverables produced so far in PDF**
  - Done to ease evaluation
- Any documents should be sent to Mr. Costas Christofi. Email: [c.christofi@cut.ac.cy](mailto:c.christofi@cut.ac.cy)

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## Closing – rest of meeting – Day 1

- Coffee break (11.00-11.30)
- **Status of deliverables discussion (11.30-12.30).**
- **Status of Projects and Projects Reports (12.30-13.30).**
- Lunch (13.30-14.30)
- **Handbook Discussion (14.30-17.30).**
- Coffee break (16.00-16.30)
- **Official dinner (20.00).**
- **Restaurant “BARBAKAN”, Freta 1. It is at the Old City (exactly at the gate to old city).**

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## Closing – rest of meeting – Day 2


- **Conference Planning** (9.00-10.30)
- Coffee break (10.30-11.00)
- **Future Planning meeting** (11.00-12.30)
- **Visit to Institute of Heat Engineering Labs** (12.30-13.30)
- 13:30 – 14:30: Lunch
- **14.30 End of meeting.**
- **If necessary continue discussion on Handbook, projects, deliverables and conference planning during the afternoon....**



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## Practical details

- To cover the cost of dinner tonight (coffee breaks and two light meals covered by LOS) you need to pay **20 Eur** each to Charalambos during coffee break.
- You will get refund for this expense on the OTTR form.



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## Please allow a little advertisement...

**Thermal Solar Desalination: Methods and Systems**  
Vassilis Belessiotis  
Soteris Kalogirou  
Emmy Delyannis



**This comprehensive book outlines the fundamental principles of how to obtain fresh water from seawater using solar thermal desalination technologies and applications**

**KEY FEATURES**


- Includes detailed descriptions and design of all types of solar thermal desalination systems
- Lists a comprehensive record of seawater and fresh water thermophysical properties required in the design of desalination systems
- Contains equations to calculate and analyze the performance of the processes examined and assesses their practicality and application

**DESCRIPTION**

*Thermal Solar Desalination: Methods and Systems* presents numerous thermal seawater desalination technologies varying from the very simple, easy to construct and operate solar stills, to the more advance membrane and indirect distillation methods. All types of solar thermal desalination technologies are presented in detail to enable readers to comprehend the subject, from design details to enabling further research to be carried out in this area.

The various units used in desalination are outlined, along with diagrams of all detailed working principles of desalination methods and systems. The authors consider the economic aspects of these processes, demonstrating successful implementation of desalination units suitable for areas where supplies of fresh water in natural ways is limited or non-existent.





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