



Meeting of the Management Committee & Working Groups of COST Action TU1205
"Building Integration of Solar Thermal Systems (BISTS)"

10 March 2017-Dublin, Ireland

Place:

Dublin Institute of Technology (DIT)
Room 446
DIT Bolton street campus
Dublin 1.

Participants

| Number | Name | Country | 10-3-2017 | WG |
|--------|------------------------|----------|-----------|-----|
| 1 | Aelenei Laura | Portugal | √ | WG1 |
| 2 | Agathocleous Rafaella | Cyprus | | WG3 |
| 3 | Almeida Manuella | Portugal | | WG1 |
| 4 | Ayompe Lacour Mody | IE | | |
| 5 | Belis Jan | BE | | |
| 6 | Blagojevic Mirko | Serbia | √ | |
| 7 | Bojic Milorad | Serbia | | |
| 8 | Bonnet Jean | France | | |
| 9 | Borg Simon Paul | Malta | √ | WG3 |
| 10 | Braganca Luis | Portugal | | |
| 11 | Buhagarian Vincent | Malta | √ | WG1 |
| 12 | Buonomano Annamaria | Italy | √ | WG2 |
| 13 | Cabeza Luisa | Spain | √ | WG3 |
| 14 | Cappol Christoph | Germany | | WG2 |
| 15 | Chemisana Daniel | Spain | √ | WG2 |
| 16 | Christofi Constantinos | Cyprus | √ | WG2 |
| 17 | Chwieduk Dorota | Poland | √ | WG1 |
| 18 | Coronas Alberto | Spain | | |
| 20 | Cristofari Christian | France | √ | WG1 |

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|----|-----------------------------|-----------|---|-----|
| 21 | Deb Mondol Jayanta | UK | √ | WG2 |
| 22 | Farkas Istvan | Hungary | √ | |
| 23 | Fedrizzi Roberto | Italy | | WG2 |
| 24 | Florides Georgios | Cyprus | √ | WG1 |
| 25 | Ford Andy | UK | | WG1 |
| 26 | Georgiev Aleksandar | Bulgaria | √ | |
| 27 | Ghosh Aritra | Ireland | | |
| 28 | Goger Thierry | Belgium | | |
| 29 | Grobman Yasha Jacob | Israel | | |
| 30 | Hyde Trevor | UK | | |
| 31 | Kalogirou Soteris | Cyprus | √ | |
| 32 | Kennedy David | Ireland | √ | WG1 |
| 33 | Keys Donal | Ireland | √ | |
| 34 | Kilik Muhsin | Turkey | | |
| 35 | Kosic Tatjana | Serbia | √ | WG3 |
| 36 | Kramer Korbinian | Germany | | |
| 37 | Krstic Furundzic Aleksandra | Serbia | √ | WG1 |
| 38 | Lamnatou Chrysovalanto | Spain | √ | WG1 |
| 39 | Leindecker Gerald | Austria | | WG3 |
| 40 | Lollini Roberto | Itali | | |
| 41 | Lopez Lorenzo Jose | Spain | | |
| 42 | Mateus Ricardo | Portugal | | WG2 |
| 43 | Maurer Christoph | Germany | √ | WG3 |
| 44 | McCormack Sarah | Ireland | √ | WG3 |
| 45 | Miletic Ivan | Serbia | √ | WG1 |
| 46 | Monteiro Da Silva Sandra | Portugal | | WG3 |
| 47 | Moreno Alex | | √ | |
| 48 | Nikolic Danijela | Serbia | √ | WG2 |
| 49 | Norton Brian | Ireland | | WG4 |
| 50 | Norvaisiene Rosita | Lithuania | √ | WG1 |
| 51 | Notton Gilles | France | √ | WG1 |
| 52 | O'Hegarty Richard | Ireland | | |
| 53 | Ochoa Carlos | Israel | | WG3 |
| 54 | Oleary Tim | Ireland | √ | |
| 55 | Palombo Adolfo | Italy | √ | WG1 |
| 56 | Platzer Werner | Germany | | |
| 57 | Popov Rumen | Bulgaria | | |
| 58 | Radulovic Jasna | Serbia | √ | WG3 |
| 59 | Ramke Stefan | Spain | | WG3 |
| 60 | Riverola Alberto | Spain | | WG3 |

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|----|-----------------------------|------------|---|-----|
| 61 | Rusowicz Artur | Poland | | WG3 |
| 62 | Savvides Andreas | Cyprus | √ | WG1 |
| 63 | Shiff Galit | Israel | | WG1 |
| 64 | Smyth Mervyn | UK | √ | WG1 |
| 65 | Tamasauskas Rokas | Lithuania | | WG2 |
| 66 | Tripanagnostopoulos Yiannis | Greece | √ | WG1 |
| 67 | Tsioutis Charalambos | Cyprus | √ | WG3 |
| 68 | Vassiliades Costantinos | Cyprus | √ | WG1 |
| 69 | Visa Ion | Romania | √ | |
| 70 | Vittoriosi Alice | Italy | | WG1 |
| 71 | Wansdronk Rene | Netherland | | WG3 |
| 72 | Zacharopoulos Aggelos | UK | √ | WG3 |

Introductory meeting (all participating)

1. Welcome to participants

Prof. Kalogirou welcomed the participants and thank David Kennedy for organising the meeting. David also welcomed the participants.

2. Adoption of agenda

The agenda of the meeting circulated by email to all members was adopted.

3. Minutes of eighth meeting (8-9 September 2016, Warsaw, Poland)

The minutes of the eighth meeting at Warsaw, Poland, were approved without any modification.

4. Report from the COST Office

The OTRR forms should be electronically handled, submitted and signed as soon as possible since the action is at its end. All documents should be uploaded properly and there is no chance for the management to do any corrections.

5. The purpose of the meeting is to evaluate the activities carried out and any remaining issues, especially those concerning the Deliverables and the End of Action Evaluation.

6. Participating countries: 22 COST countries are now participating with 32 MC members (+14 substitute members) and with two non-COST countries.

7. Budget status, budget planning and allocation process

The New budget is 101,750 Eur and is reduced from previous years by a further 16.5% (last year it was 122k). The Main expenses are: – Total for meetings 62,000 Eur.

– Training schools = 21, 940 Eur

- 4 STSM = 4,000 Eur.
- Dissemination 1,500 Eur. (webpage)
- Other = 2000 Eur. (Bank charges)

8. **Progress report of working groups** (in red is work to be done).

The following revision of the work of each group was presented:

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) -**DONE**
- 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) - **DONE**
- D 1.4. Report on the evaluation technologies available for BISTS characterisation (Month 24) - **DONE**.

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) - **DONE**
- D.2.3. Annual Training School for dissemination of expertise to PhD students and Early Stage Researchers (Month 18, 30, 42) - **DONE**
- 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). X STILL PENDING**
- **D.2.6. Report on the development of new models for innovative integrated STS applications (Month 46). X STILL PENDING**

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) - **DONE**
- D.3.3. Annual Training School to disseminate expertise to PhD students and Early Stage Researchers (Month 18, 30, 42). - **DONE**
- 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**). - **DONE**
- **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). X STILL PENDING**
- D.3.6. Handbook for architects and building services engineers on the developed BISTS solutions for the design market ready products. (**Month 46**). - **DONE**

9. Handbook

The handbook is ready and was disseminated to the attendees.

Overall a good piece of work. There was no review of its chapters, as agreed, because there was no time. Most authors did not follow the guidelines and much work was required to bring them to the appropriate shape/format. Prof. Kalogirou thanked David and Mervyn for proofreading all chapters and corrected the language.

Some chapters were problematic and did not pass the authenticity test. For this reason the following note was added so indicate responsibility:

- ***Notice:*** *The compilation of the various chapters contained within this handbook have been produced by COST Action TU1205 members having sole responsibility of the material presented therein.*

Some chapters were also co-authored with non-cost members and for this a note was added both on the first page of contribution as footnote and to the list of contributors.

More on the book:

- A total of 250 copies of the book were printed and the expense was covered by COST.

- 90 copies were sent to David (Postage ~ 450€)
- All BIRES conference paid participants received a copy plus all other members participating in this meeting since this was considered as a good dissemination method.
- More copies are available and can be sent to anybody at the postage cost of 15 Eur for one book, 25 Eur for two books and 35 Eur for three books (clear amount, with no bank fees).
- If more copies are required in the future (after the stock is exhausted), 50 Eur per book to the above prices should be added, covering the actual printing cost for smaller quantity of books.
- The complete copy of the book is on website as PDF.

Finally, Prof. Kalogirou asked to be informed of any mistakes, to be corrected at least on the website.

10. Short Term Scientific Missions (STSM)

4 STSM are planned for the fourth year. All of them were carried out. The Total Budget paid was 4,000 EUR (1000/stsm). The STSM were used almost exclusively to prepare the Action deliverables.

11. Publications, dissemination and outreach activities

- **The following publications were prepared by the Action:**
 - Overview of BISTS state of the art, models and applications
 - Proceedings of COST Action TU1205 Symposium
 - BIRES book of abstracts
 - BIRES proceedings (on the web only)!
 - BISTS design and applications handbook
- All books have an ISBN
 - Many members publish papers in scientific journals related to the Action. The authors should acknowledge cost and send details to Prof. Kalogirou to be included in final evaluation
- **All publications (books and deliverables) will remain on the WEB for some time.**

12. BIRES conference

- No review of papers was carried out as planned because there was no time
- Many submissions were very late.
- Evaluation will be done for the papers selected for the RENE Special Issue.
- Not all papers will appear in the Special Issue.
- Papers for the Special Issue will pass through a normal review by Guest Editors
- Planned to repeat the **BIRES conference** on a bi-annual basis
- Next one hopefully in Cyprus

- Prof. Kalogirou plans to develop it as the main RENE supported conf.

13. Appreciations for the BIRES conference

Prof. Kalogirou thanked all COST members who supported the conference with papers. Especially he thanked David Kennedy and all the members of the organising committee and Brian Norton, president of DIT for accepting to host the conference.

14. General

- Any NEW documents should be sent to Mr. Costas Christofi. Email: c.christofi@cut.ac.cy
- The Website includes all deliverables produced in PDF and all books produced in PDF.

Targets Achieved

The Working group leaders presented the achievements of their WG including deliverables, models, demonstrations, projects, etc

- Mervyn and Aleksandra presented the work of WG1: Development and characterisation of new BISTS in regards with the scope, tasks, collaboration and deliverables.
- Daniel, presented the work of WG2: Modelling and Simulation of BISTS and
- Angelos, presented the work of WG3: Investigation of new applications for innovative BISTS

Closing the Action

- Prof. Kalogirou in a presentation full of memories, showed photos of all the meetings and mentioned the main events that took place during the Action
- Honor of key persons (Working group leaders):

As a sign of appreciation Prof. Kalogirou offered a certificate to people that provided considerable help to carry out the Action successfully, together with CUT gifts.

Discussion of the way forward

Prof. Kalogirou introduced the ideas discussed in the previous meeting for applying for new actions and Laura in collaboration with Annamaria and Adolfo presented theirs. Many ideas were also exchanged and they undertook to form a Core group to organise and write a new proposal.