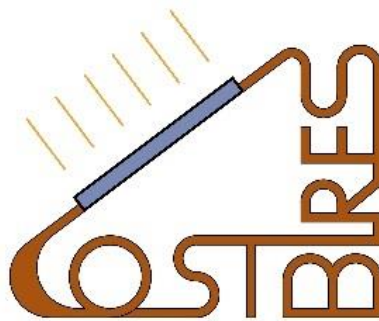


**First International Conference on Building Integrated Renewable Energy
Systems**

**Conference organized in collaboration
with COST Action TU 1205-BISTS**



**6th - 9th March 2017
Dublin Institute of Technology (DIT) Ireland
DIT Grangegorman**



BIRES 2017 - PROCEEDINGS

Edited by: Soteris A. Kalogirou and David Kennedy



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Conference organized in collaboration
with COST Action TU1205



Conference Themes

Building Integration of:

- Solar thermal systems (STS)
- Photovoltaic / Thermal (PV/T)
- Thermal Storage (TS)
- Hybrid systems (HS)
- Renewable and Sustainable Energy Systems

Sponsors



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Book Edited by: Soteris A. Kalogirou, David Kennedy

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Programme
St. Laurence, DIT Grangegorman

Monday 6th March: Registration and Welcome Reception 6pm to 8pm.

POSTER SESSION

ART EXHIBITION environmental matrix view
(Prof. Yiannis Tripanagnostopoulos)

Tuesday 7th March:

Registration 8.30am - 9am. St. Laurence, DIT Grangegorman

Tuesday 7th March 9am-9.20am.: Opening Address by:

Professor Brian Norton, President DIT and Conference Chair and
Professor Soteris Kalogirou, Chair of COST Action TU1205

Tuesday 7th March: 9.20am to 11am. Paper Presentations: Session 1.(5 papers)

Tuesday 7th March: 11.20am to 12.50pm. Paper Presentations: Session 2.(5 papers)

Tuesday 7th March: 2pm to 3.30pm. Paper Presentations: Session 3.(6 papers)

Tuesday 7th March: 3.45pm to 5.30pm. Paper Presentations: Session 4.(5 papers)

POSTER SESSION & ENERGY in ART EXHIBITION

(Prof. Yiannis Tripanagnostopoulos)

Wednesday 8th March:

Registration 8.30am - 9am. St. Laurence, DIT Grangegorman

Wednesday 8th March: 9.00am to 11am. Paper Presentations: Session 5. (7 papers)

Wednesday 8th March: 11.20am to 12.50pm. Paper Presentations: Session 6. (5 papers)

Wednesday 8th March: 2.00pm to 3.30pm. Paper Presentations: Session 7. (6 papers)

Wednesday 8th March: 3.45pm to 5.30pm. Paper Presentations: Session 8. (5 papers)

POSTER SESSION & ENERGY in ART EXHIBITION

(Prof. Yiannis Tripanagnostopoulos)

Thursday 9th March:

Registration 8.30am - 9am. St. Laurence, DIT Grangegorman

Thursday 9th March: 9.00am to 11am. Paper Presentations: Session 9. (7 papers)

Thursday 9th March: 11.20am to 12.50pm. Paper Presentations: Session 10. (5 papers)

Thursday 9th March: 2pm to 3.30pm. H2020 Meeting

Thursday 9th March: 3.30pm. Close of Conference:

Prof. Brian Norton & Prof. Soteris Kalogirou

Note: The Authors shown in the following list are the authors specified in the system on submission. The full list of the authors can be seen in the full papers.

Tuesday 7th March Paper Session 1: St. Laurence's

Chairs: Prof. Soteris Kalogirou and Dr. Mervyn Smyth

Achievements of BFIRST EU funded project on BIPV technology (Paper 90)

1. Dr. Eduardo Roman - Tecnalia, Spain, Solar area, Energy and Environment division (TECNALIA)
2. Prof. Soteris Kalogirou - Cyprus University of Technology (CUT)
3. Dr. Maider Machado - Tecnalia Research and Innovation, Energy and Environment.

A Building Integrated Photovoltaic (BIPV) demonstration building in Belgium with new Fibre Reinforced Solar Technology PV modules: Analysis with Simulation and Monitoring data (Paper 92)

1. Dr. Rafaela Agathokleousa - Cyprus University of Technology, Limassol, Cyprus
2. Prof. Soteris Kalogirou - Cyprus University of Technology, Limassol, Cyprus
3. Dr. Stephane Pierret - Optimal Computing, Mons, Belgium

Thermal testing of new photovoltaic (PV) modules for building integration, encapsulated with glass fibre reinforced composite materials and comparison with conventional Photovoltaic (Paper 91)

1. Prof. Soteris Kalogirou - Cyprus University of Technology, Limassol, Cyprus
2. Dr. Rafaela Agathokleousa - Cyprus University of Technology, Limassol, Cyprus

Evaluation of performance at experimental buildings and real demonstration sites in BFIRST project: Theoretical and practical aspects for BIPV monitoring system (Paper 25)

1. Dr. michele pellegrino - enea
2. Dr. Eduardo Roman - tecnalia
3. Dr. Stephane Pierret – optimal computing
4. Mr. Vangelis Mathas - Center for Renewable Energy Sources (CRES)
5. Prof. Soteris Kalogirou - Cyprus University of Technology (CUT)
6. Mr. Giovanni Flaminio - enea
7. Dr. Arturo Matano - enea
8. Dr. Martinez Asier - tecnalia
9. Dr. Anastasios Kyritsis - Center for Renewable Energy Sources (CRES)

Energy investigation on households with BIPV modules under Net Metering Scheme (Paper 23)

1. Dr. Anastasios Kyritsis - Center for Renewable Energy Sources (CRES)
2. Dr. Efstathios Tselepis - Center for Renewable Energy Sources (CRES)
3. Mr. Vangelis Mathas - Center for Renewable Energy Sources (CRES)
4. Mr. John Nikolettatos - Center for Renewable Energy Sources (CRES)
5. Ms. Rafaela Agathokleous - Cyprus University of Technology (CUT)
6. Prof. Soteris Kalogirou - Cyprus University of Technology (CUT)

Tuesday 7th March Paper Session 2: St. Laurence's

Chairs: Professor Cristofari Christian and Dr. Deb Mondol Jayanta (UK)

Building façade integrated solar thermal collectors for water heating: simulation model and case studies (Paper 09)

1. Dr. Annamaria Buonomano - University of Naples Federico II
2. Mr. Cesare Forzano - University of Naples Federico II
3. Prof. Soteris Kalogirou - Cyprus University of Technology
4. Mr. Charalambos Kyriakou - Cyprus University of Technology
5. Prof. Adolfo Palombo - University of Naples Federico II

A building integrated solar air heating thermal collector prototype: modelling, validation and case studies (Paper 06)

1. Dr. Annamaria Buonomano - University of Naples Federico II
2. Mr. Claudio Esposito - University of Naples Federico II
3. Prof. Soteris Kalogirou - Cyprus University of Technology
4. Mr. Aggelos Mosphiliotis - Cyprus University of Technology
5. Prof. Adolfo Palombo - University of Naples Federico II
6. Mr. Zacharias Symeou - Cyprus University of Technology

Exergetic and energy-economic analysis of a Building Integrated PhotoVoltaic and Thermal system (Paper 05)

1. Dr. Annamaria Buonomano - University of Naples Federico II
2. Prof. Francesco Calise - University of Naples Federico II
3. Prof. Adolfo Palombo - University of Naples Federico II
4. Ms. Maria Vicidomini - University of Naples Federico II

Technical and economic analysis of a micro photovoltaic/thermal system working in Polish climatic conditions (Paper 60)

1. Mr. Jarosław Bigorajski - Warsaw University of Technology
2. Prof. Dorota Chwieduk - Warsaw University of Technology

A novel approach towards investigating the performance of different PVT configurations integrated on test cells: an experimental approach (Paper 95)

1. Mr. Vivek Tomar - Centre for Energy Studies, Indian Institute of Technology (IIT) Delhi, New Delhi, India.
2. Prof. Brian Norton - Dublin Institute of Technology
3. Prof. G.n. Tiwari - Centre for Energy Studies, Indian Institute of Technology

Tuesday 7th March Paper Session 3: St. Laurence's

Chairs: Dr. Annamaria Buonomano and Prof. Andreas Savvides

Aesthetic aspects for building integrated solar and wind energy systems (Paper 89)

1. Prof. Yiannis Tripanagnostopoulos - Dept of Physics, Univ. of Patras, Patra

Integration aspects of solar energy systems to renovated buildings (Paper 88)

1. Mr. Georgios Trypanagnostopoulos - Univ. of Patras, Patra 26500, Greece
2. Mrs. Eleni Karantagli - University of Patras, Patra 26500, Greece
3. Mr. Athanasios Koskinas - Univ. of Patras, Patra 26500, Greece
4. Prof. Yiannis Tripanagnostopoulos – Univ. of Patras, Greece

Single-Axis Mechanisms with Limited Stroke for Tracking Solar Thermal Collectors and Photovoltaic Modules Integrated in Building Façades (Paper 87)

1. Prof. Mircea Neagoe - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
2. Assoc Prof. Bogdan Burduhos - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
3. Assoc Prof. Mihai Comsit - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
4. Dr. Nadia Cretescu - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

Trapeze solar-thermal collectors: implementation prerequisites and solutions (Paper 86)

1. Prof. Ion Visa - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
2. Dr. Mihai Comsit - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
3. Prof. Macedon MOLDOVAN - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

Nearly Zero Energy Community – an affordable and feasible transition concept towards sustainable cities (Paper 85)

1. Prof. Ion Visa - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
2. Dr. Anca Duta - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

Application Possibilities of Building Integrated Solar Tile Collectors (Paper 11)

1. Dr. Istvan Fekete - Faculty of Mechanical Engineering and Automation, PA University
2. Prof. Istvan Farkas - Szent Istvan University, Godollo

Tuesday 7th March Paper Session 4: St. Laurence's

Chairs: Prof. Brian Norton and Prof. Dorota Chwieduk

Outdoor performance of a trapeze solar-thermal collector for facades integration (Paper 84)

1. Dr. Anca Duta -Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
2. Prof. Ion Visa - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
3. Prof. Macedon Moldovan - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

Experimental evaluation of the efficiency of Photovoltaic / Thermal (PV/T) modules integrated in the built environment (Paper 83)

1. Prof. Macedon MOLDOVAN - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
2. Prof. Ion Visa - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
3. Dr. Anca Duta - Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

The importance of the solar systems to achieve the nZEB level in the energy renovation of southern Europe's buildings ((Paper 82)

1. Dr. Chemisana Mateus - University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal.
2. Dr. Sandra Monteiro da Silva - University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal.
3. Dr. Manuela Almeida - University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal.

Optimization of a Building Integrated Solar Thermal System with Seasonal Storage (Paper 81)

1. Dr. Georgios Martinopoulos - International Hellenic University/School of Science
2. Mr. C Antoniadis - International Hellenic University/School of Science and Technology, Thessaloniki, Greece

Integration of PV Modules into the Building Envelope in Aim to Achieve Energy and Environmental Benefits (Paper 13)

1. Prof. Aleksandra Krstic-Furundzic - Faculty of Architecture, University of Belgrade,
2. Dr. Budimir Sudimac - Faculty of Architecture, University of Belgrade,
3. Mrs. Andjela Dubljevic - Faculty of Architecture, University of Belgrade,

POSTER SESSION & ART EXHIBITION (Prof. Yiannis Tripanagnostopoulos)

Wednesday 8th March Paper Session 5: St. Laurence's

Chairs: Dr. Laura Aeleni and Dr. Ricardo Mateus

Environmental Impact and Economic Analysis of a LED Lighting Products (Paper 80)

1. Prof. Christopher J. Koroneos - University of Western Macedonia, Bakola and Salviera, 50100, Kozani
2. Dr. Eva Nanaki - University of Western Macedonia, Bakola and Salviera

Performance and stability of semitransparent OPVs for building integration: A benchmarking analysis (Paper 78)

1. Dr. Daniel Chemisana - 1Applied Physics Section of the Environmental Science, University of Lleida

A Review of New Materials Used for Building Integrated Systems (Paper 77)

1. Dr. Jasna Radulovic - Faculty of Engineering, University at Kragujevac, Serbia
2. Dr. Danijela Nikolic - Faculty of Engineering, University at Kragujevac, Serbia

3. Dr. Mirko Blagojevic - Faculty of Engineering, University of Kragujevac, Serbia
4. Dr. Ivan Miletic - Faculty of Engineering, University at Kragujevac, Serbia
5. Dr. Mina Vasković - Faculty of Engineering, University at Kragujevac, Serbia

Experimental and numerical analysis of overheating in test houses with PCM in Latvian climate conditions (Paper 76)

1. Mr. Janis Ratnieks - University of Latvia, Riga Technical university
2. Dr. Andris Jakovičs - University of Latvia, Riga Technical university
3. Dr. Staņislavs Gendelis - University of Latvia
4. Prof. Diāna Bajāre - Riga Technical University

A new approach on corrosion tests for building materials with PCM (Paper 74)

1. Prof. Halime Paksoy - Çukurova University, Chemistry Department, 01330, Adana, Turkey
2. Prof. Gulfeza Kardas - Chemistry Department, Cukurova University, Turkey
3. Dr. Kemal Cellat - Chemistry Department, Cukurova University, Turkey
4. Dr. fatih tezcen - Chemistry Department, Cukurova University, Turkey

Benchmarking of energy demand of domestic and small business buildings (Paper 73)

1. Prof. Luisa F. Cabeza - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida
2. Dr. Julia Coma - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida
3. Mr. Jose Miguel Maldonado - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida, Spain
4. Dr. Alvaro De Gracia - Universitat Rovira i Virgili, Av. Paisos Catalans 26, 43007 Tarragona, Spain.
5. Mr. Toni Gimbernat - SINAGRO ENGINYERIA S.L.P, Av. Estudi General 7, Altell 5, 25001, Lleida, Spain
6. Mrs. Teresa Botargues - USERFEEDBACK PROGRAM SL, Sant Jaume Apòstol

Building-integrated photovoltaic/thermal (BIPVT) prototype: Environmental assessment focusing on material manufacturing (Paper 07)

1. Dr. Chrysovalantou Lamnatou - University of Lleida
2. Dr. Mervyn Smyth - Ulster University
3. Dr. Daniel Chemisana - University of Lleida

Wednesday 8th March Paper Session 6: St. Laurence's

Chairs: Prof. Soteris Kalogirou and Prof. Luis Braganca

Two active integrated storage systems: Double skin facade and active slab with PCM (Paper 72)

1. Prof. Luisa F. Cabeza - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida
2. Dr. Lidia Navarro - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida
3. Dr. Alvaro De Gracia - Universitat Rovira i Virgili, Av. Paisos Catalans 26, 43007

Innovative Pathways to Thermal Energy Storage (INPATH- TES) project (Paper 71)

1. Prof. Luisa F. Cabeza - University of Lleida
2. Dr. Gabriel Zsembinszki - Universitat de Lleida, Edifici CREA, Pere de Cabrera s/n, 25001, Lleida
3. Ms. Gundula Weber - Austria Institute of Technology

Financial return of Solar Thermal Heating with Seasonal Thermal Energy Storage - a Swedish case study (Paper 70)

1. Dr. Shane Colclough - University of Ulster
2. Dr. Philip Griffiths - University of Ulster
3. Prof. Neil Hewitt - University of Ulster, Newtownabbey, Co Antrim, Ireland

Power Quality Analysis using Harmonic Heating factor by Multiple Energy Efficient Appliances in Smart Building (Paper 68)

1. Mr. Chittesh Veni Chandran - Dublin Institute of Technology
2. Dr. Malabika Basu - Dublin Institute of Technology

3. Dr. Keith Sunderland - Dublin Institute of Technology

Investigation of Joule heating effect on Performance of PV modules based on equivalent Thermal-Electrical Model (Paper 67)

1. Ms. Houda Morchid - Dublin Institute of Technology
2. Prof. Michael Conlon - Dublin Institute of Technology

Wednesday 8th March Paper Session 7: St. Laurence's

Chairs: Prof. Rosita Norvaisiene and Prof. Gilles Notton

Performance Evaluation of the Senergy Polycarbonate and Asphalt Carbon Nano-Tube Solar Water Heating Collectors for Building Integration (Paper 65)

1. Mr. Adrian Pugsley - Ulster University
2. Dr. Aggelos Zacharopoulos - Ulster University
3. Dr. Mervyn Smyth - Ulster University
4. Dr. Jayanta Mondol - Ulster University

Investigation of the thermal performance of a Concentrating PV/Thermal Glazing Façade Technology (Paper 64)

1. Dr. Aggelos Zacharopoulos - Ulster University
2. Dr. Jayanta Mondol – Ulster University
3. Dr. Mervyn Smyth - Ulster University
4. Dr. Trevor Hyde - Ulster University
5. Mr. Adrian Pugsley - Ulster University

Reactive power control for smarter (urban) distribution network management with increasing integration of renewable prosumers (Paper 59)

1. Mr. Arsalan H Zaidi - Dublin Institute of Technology
2. Dr. Keith Sunderland - Dublin Institute of Technology
3. Dr. Massimiliano Coppo - University of Padova
4. Prof. Michael Conlon - Dublin Institute of Technology
5. Dr. Roberto Turri - University of Padova

Double skin façades integrating photovoltaics and active shadings: a case study for different climates (Paper 10)

1. Prof. Andreas Athienitis - Concordia University
2. Dr. Annamaria Buonomano – Concordia University, University of Naples Federico II
3. Mr. Zissis Ioannidis - Concordia University
4. Dr. Konstantinos Kapsis - Concordia University
5. Prof. Ted Stathopoulos - Concordia University

Experimental performance comparison of a Hybrid Photovoltaic/Solar Thermal (HyPV/T) Façade Module with a flat ICSSWH module (Paper 56)

1. Dr. Mervyn Smyth - Ulster University
2. Mr. Adrian Pugsley - Ulster University
3. Mr. George Hanna - Ulster University
4. Dr. Aggelos Zacharopoulos - Ulster University
5. Dr. Jayanta Mondol - Ulster University
6. Dr. Ahmad Besheer - Ulster University

Numerical study of PCM integration impact on overall performances of a highly building integrated solar collector (Paper 04)

1. Dr. Fabrice Motte - University of Corsica
2. Dr. Gilles Notton - University of Corsica
3. Dr. Chrysovalantou Lamnatou - University of Lleida

4. Prof. Christian Cristofari - University of Corsica
5. Prof. Daniel Chemisana – University of Catalonia

Wednesday 8th March Paper Session 8: St. Laurence's

Chairs: Prof. Adolfo Palombo and Dr. Jasna Radulovic

The Potential of Concrete Solar Thermal Collectors for Energy Savings (Paper 55)

1. Mr. Richard O'Hegarty - Trinity College Dublin
2. Dr. Oliver Kinnane - University College Dublin
3. Dr. Sarah McCormack - Trinity College Dublin

Optimization assessment of the energy performance of a BIPV/T-PCM system using Genetic Algorithms (Paper 54)

1. Mr. Ricardo Pereira - LNEG
2. Dr. Laura Aelenei - LNEG

Investigating the potential for flexible demand in an office building with a BIPV façade and a PV roof system (Paper 53)

1. Prof. Daniel Aelenei - Nova University of Lisbon-Faculty of Cience and Technology
2. Mr. Miguel Santos - Nova University of Lisbon-Faculty of Cience and Technology
3. Dr. Laura Aelenei - LNEG

Building Integrated Photovoltaics in the overall building energy balance: Lithuanian Case (Paper 49)

1. Mr. Rokas Tamasauskas - Institute of Architecture and Construction of Kaunas University of Technology, Lithuania
2. Dr. Rosita Norvaisiene - Kaunas University of Applied Engineering Sciences, Tvirtoves al., Kaunas, Lithuania
3. Dr. Vytautas Sucila - Faculty of Electrical and Electronics Engineering of Kaunas, Lithuania

Modular Building Intergraded Solar-Thermal Flat Plate Hot Air Collectors (Paper 43)

1. Prof. Soteris Kalogirou - Faculty of Engineering and Technology, Cyprus University of Technology
2. Dr. Georgios Florides - Faculty of Engineering and Technology, Cyprus University

POSTER SESSION & ART EXHIBITION (Prof. Yiannis Tripanagnostopoulos)

Thursday 9th March: Paper: Session 9. St. Laurence's

Chairs: Prof. Aleksandra Krstic Furundzic and Dr. Chrysovalanto Lamnatou

Modular Building Intergraded Solar-Thermal Flat Plate Hot Water Collectors (Paper 42)

1. Prof. Soteris Kalogirou - Faculty of Engineering and Technology, Cyprus University of Technology
2. Dr. Georgios Florides - Faculty of Engineering and Technology, Cyprus University

Passive Solar Floor Heating in Buildings utilizing the Heat from an Integrated Solar Flat Plate Collector (Paper 41)

1. Dr. Georgios Florides - Faculty of Engineering and Technology, Cyprus University of Technology
2. Prof. Paul Christodoulides - Faculty of Engineering and Technology, Cyprus University of Technology
3. Prof. Soteris Kalogirou - Faculty of Engineering and Technology, Cyprus University

Adaptive solar building envelope with thermal energy storage (Paper 39)

1. Ms. Shauli Chakraborti - Ulster University
2. Dr. Jayanta Mondol - Ulster University

3. Dr. Mervyn Smyth - Ulster University
4. Dr. Aggelos Zacharopoulos - Ulster University
5. Mr. Adrian Pugsley - Ulster University

Geometrical Optimization of the Urban Fabric in order to ensure the Viability of Building Integration of Active Solar Systems (Paper 31)

1. Dr. Andreas Savvides - University of Cyprus
2. Mr. Constantinos Vassiliades - University of Cyprus
3. Dr. Aimilios Michael - University of Cyprus

A Review of Possible Pathways for Avoiding Snow and Ice Formation on Building Integrated Photovoltaics (Paper 29)

1. Mr. Per-Olof Andersson - Norwegian University of Science and Technology (NTNU)
2. Prof. Bjørn Petter Jelle - Norwegian University of Science and Technology (NTNU) and SINTEF Building and Infrastructure
3. Dr. Tao Gao - Norwegian University of Science and Technology (NTNU)
4. Dr. Serina Ng - SINTEF Building and Infrastructure
5. Dr. Josefine Selj - Institute for Energy Technology (IFE)
6. Dr. Sean Erik Foss - Institute for Energy Technology (IFE)
7. Prof. Erik Stensrud Marstein - Institute for Energy Technology (IFE) and University of Oslo (UiO)
8. Dr. Tore Kolås - SINTEF Materials and Chemistry

Economics of building-integrated solar thermal systems (Paper 26)

1. Dr. Christoph Maurer - Fraunhofer Institute of Solar Energy Systems ISE
2. Dr. Mervyn Smyth - Ulster University

Design of an inverted absorber compound parabolic concentrator for solar air heating (Paper 58)

1. Mr. Fernando Guerreiro - Dublin Institute of Technology
2. Prof. David Kennedy - Dublin Institute of Technology
3. Prof. Michael Mc Keever - Dublin Institute of Technology
4. Prof. Brian Norton - Dublin Institute of Technology

Thursday 9th March: Paper: Session 10. St. Laurence's

Chairs: Prof. Yiannis Tripanagnostopoulos and Prof. Ion Visa

A Review of Materials Science Research Pathways for Building Integrated Photovoltaics (Paper 21)

1. Prof. Bjørn Petter Jelle - Norwegian University of Science and Technology (NTNU) and SINTEF Building and Infrastructure
2. Mr. Per-Olof Andersson - Norwegian University of Science and Technology (NTNU)
3. Ms. Anna Fedorova - Norwegian University of Science and Technology (NTNU)
4. Dr. Tao Gao - Norwegian University of Science and Technology (NTNU)
5. Dr. Serina Ng - SINTEF Building and Infrastructure
6. Dr. Josefine Selj - Institute for Energy Technology (IFE)
7. Dr. Sean Erik Foss - Institute for Energy Technology (IFE)
8. Prof. Erik Stensrud Marstein - Institute for Energy Technology (IFE), and, University of Oslo (UiO)
9. Dr. Tore Kolås - SINTEF Materials and Chemistry (NTNU)

Building Integration of Solar Thermal Systems - Exemple of a Refubirshment of a Church Rectory (Paper 19)

1. Prof. Christian Cristofari - University of Corsica
2. Dr. Mihail-Bogdan Carutasiu - University Politehnica of Bucharest
3. Dr. Jean-louis Canaletti - University of Corsica -IUT
4. Dr. Rosita Norvaisiene - Kaunas University of Applied Engineering Sciences
5. Dr. Fabrice Motte - University of Corsica
6. Dr. Gilles Notton - University of Corsica

The Pilot Photovoltaic/Thermal Plant at the University of Catania: description and preliminary characterization (Paper 17)

1. Prof. Giuseppe Tina - University of Catania
2. Prof. Antonio Gagliano - University of Catania
3. Prof. Francesco Nocera - University of Catania
4. Prof. Alfio Dario Grasso - University of Catania

Thermal mass performance of concrete panels incorporated with phase change materials (Paper 16)

1. Ms. Dervilla Niall - Dublin Institute of Technology
2. Dr. Oliver Kinnane - University College Dublin
3. Dr. Roger West - Trinity College Dublin
4. Dr. Sarah McCormack - Trinity College Dublin

Multicriterial Optimization of Procedures for the Selection the Best Measures for Energy Performances Improvement of the Multifamily Housing in Belgrade (Paper 14)

1. Prof. Aleksandra Krstic-Furundzic - University of Belgrade, Faculty of Architecture
2. Dr. Tatjana Kosic - University of Belgrade, Faculty of Architecture

Large-Scale Laboratory Investigation of Building Integrated Photovoltaics –A Review of Methods and Opportunities (Paper 30)

1. Ms. Anna Fedorova - Norwegian University of Science and Technology (NTNU)
2. Prof. Bjørn Petter Jelle - Norwegian University of Science and Technology (NTNU), and, SINTEF Building and Infrastructure
3. Mr. Erlend Andenæs - Norwegian University of Science and Technology (NTNU)
4. Dr. Anne Gerd Imenes - Teknova, and, University of Agder (UiA)
5. Mr. Ole Aunrønning - Norwegian University of Science and Technology (NTNU)
6. Dr. Christian Schlemminger - SINTEF Building and Infrastructure
7. Prof. Stig Geving - Norwegian University of Science and Technology (NTNU)

Thursday 9th March: Paper: 2pm to 3.30pm H2020 MEETING. St. Laurence's
Presented by Philip Cheasty, Irish National Contact Point, H2020 (Energy), Enterprise Ireland and
Mrs. Katherine Eve., Renewable Energy Journal.

Thursday 9th March: 3.30pm. Close of Conference: Prof. Brian Norton & Prof. Soteris Kalogirou

POSTER PAPERS

Solar Photovoltaic System Inverter Configuration Performance Analysis for a Building Integrated System Experiencing Shade (Paper 97)

Ms. Lynette O'Callaghan – DIT, Dr. Michael Mckeever - Dublin Institute of Technology,
Prof. Brian Norton - Dublin Institute of Technology

Building Integrated Compound Parabolic Photovoltaic Concentrator: A review (Paper 94)

Dr. Sarah McCormack - Trinity College Dublin, Ms. Anita Ortega - Department of Civil, Structural and Environment Engineering, Trinity College Dublin, College Green, Dublin 2, Ireland, Ms. Hoda Akbari - Department of Civil, Structural and Environment Engineering

Modelling of Synthetic Natural Gas Production via Biomass Gasification for Renewable Gas Grid Injection (Paper 93)

Dr. Wayne Doherty - Mechanical Engineering Dublin Institute of Technology

Integration and replication of the Bfirst BIPV products, from the perspective of a Global General Contractor Company (Paper 98)

Jose C. Esteban, Acciona.

Solar Air Shutter with Split-System (Paper 99)

JL. Canaletti, Université de Corse, U.M.R. CNRS 6134 SPE, Route des Sanguinaires, F-20000 AJACCIO, France

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Smart Façade Air Solar Collector System – SFA SCSys (Paper 100)

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COST Action TU1205: Building Integration of Solar Thermal Systems (BISTS)



Overview of the Action:

Energy use in buildings represents 40% of the total primary energy used in the EU and therefore developing effective energy alternatives is imperative. Solar thermal systems (STS) will have a main role to play as they contribute directly to the heating and cooling of buildings and the provision of domestic hot water. STS are typically mounted on building roofs with no attempt to incorporate them into the building envelope, creating aesthetic challenges and space availability problems. The Action will foster and accelerate long-term development in STS through critical review, experimentation, simulation and demonstration of viable systems for full incorporation and integration into the traditional building envelope. Viable solutions will also consider economic constraints, resulting in cost effective Building Integrated STS. Additionally, factors like structural integrity, weather impact protection, fire and noise protection will be considered. The most important benefit of this Action is the increased adoption of RES in buildings. Three generic European regions are considered; Southern Mediterranean, Central Continental and Northern Maritime Europe, to fully explore the Pan-European nature of STS integration. The Action consortium presents a critical mass of European knowledge, expertise, resources, skills and R&D in the area of STS, supporting innovation and conceptual thinking.

Action web page: <http://www.tu1205-bists.eu/>

Domain: Transport and Urban Development (TUD).

http://www.cost.eu/COST_Actions/tud/Actions/TU1205

Countries participating: Austria, Belgium, Bulgaria, Cyprus, Denmark, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Lithuania, Malta, Netherlands, Poland, Portugal, Romania, Serbia, Spain, Turkey, United Kingdom.



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