International Brokerage Event
Brussels, 26-27/10/2017

CITIES OF THE FUTURE
BRUSSELS 2017

AIMPLAS

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Description of the Organization

- **AIMPLAS, Plastics Technology Centre**, Valencia (Spain), is a private, non-profit Association with more than 500 associated companies created in 1990. AIMPLAS is formed by +125 highly skilled professionals.
- AIMPLAS has **state-of-the-art 8500 m² facilities**, including thermoplastics and thermoset pilot plants, analysis, polymer and nanoparticles synthesis and testing laboratories (physical-mechanical, chemical, packaging, automotive and construction) and training areas.
- AIMPLAS has a **broad expertise** in the fields of petrol based plastic/composites, nanocomposites, high performance coatings, 3D printing, printed electronics, biopolymers and renewable source materials, etc..
- AIMPLAS has participated in **>100 projects** in FP5, FP6, FP7, LIFE+, CIP-EcoInnov., SUDOE, H2020… **EU Programmes**, coordinating 40% of them.
- **What AIMPLAS could offer**? Global expertise across the whole plastics/materials value chain:

Description of the your research interest

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Twenty H2020 projects (coordinating 9).

Energy Harvesting at Building scale via Solar and thermal hybrid Generators

The proposal will provide a combination of different renewable energy technologies to cover the highest possible share of electricity, heating and cooling needs of a multi-family residential or commercial or public or industrial building.

The project proposes to innovatively combine solutions to maximize energy harvesting (for heating, cooling, electricity, etc.) at building scale to reach nearly-zero energy solutions in existing and new buildings, based on the integration of Seebeck Termoelectric Generators (TEG) supported by other technologies such as special cool and warm coatings, thin film photovoltaic panels and bonding on command adhesives.

The project will design and engineer new hybrid harvesting systems to maximize proposed RES efficiency and synergy (solar power concentrator, solar collectors, geothermal and heat pipe solar roofs) and recover waste heat from RES devices to produce electricity. These hybrid RES will validate the technology by full scale demonstration in real production conditions in building facilities.

LC-SC3-RES-4-2018: Renewable energy system integrated at the building scale (RIA)

Energy Harvesting at Building scale via Solar and thermal hybrid Generators

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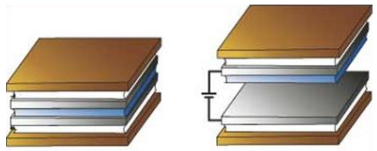
Flexible RES hybrid technologies

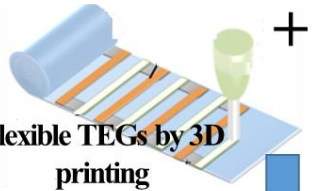
Perovskite cell.

Cool & warm coatings.

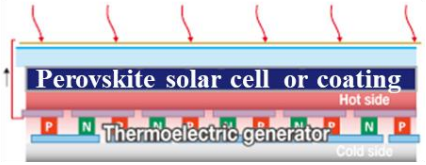


Adhesive with de-bonding on command.

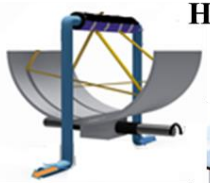
+



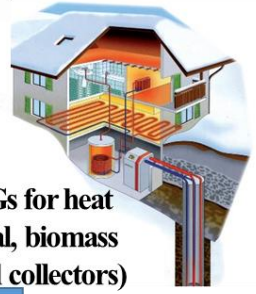
Flexible TEGs by 3D printing



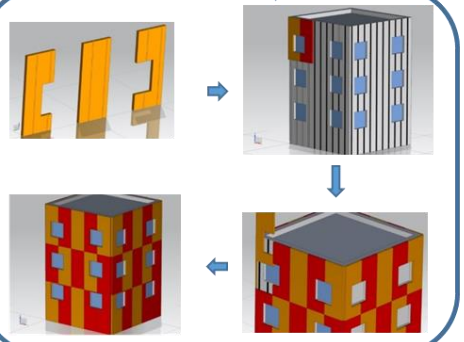
Rigid RES hybrid technologies



Hybrid concentrator and TEGs



Plug & Play TEGs for heat pipes (Geothermal, biomass heaters or thermal collectors)



Assembly & installation of RES in roof & Envelope.

Validation in real installation conditions at building & district scale.

Building & District Information Model

EUROPEAN LEVEL

- BIM REPLICATION
- Four scenarios:
  - South-Europe
  - East-Europe
  - North-Europe
- GUIDES
- CONTRIBUTION TO STANDARDS
- COMMUNICATION & DISEMINATION

Consortium - required partners

No	Expertise	Type	Country	Role in the project
01-03	Specialist in RES technologies	No defined	No defined	Company/research centre/university specialist in alternative RES technologies to be integrated at building level.
04	Non-residential building	No defined	North country	Demonstrator of non-residential building in a north country
05	Building modeling	No defined	No defined	Company/research centre/university specialist in building modeling mainly heat/cool.
06	Specilist in flexible TEGs	No defined	No defined	Company/research centre/university specialist in flexible TEGs.
07	Batteries specilist	No defined	No defined	Evaluate the best storage technology to connect and distribute the electricity generated for each devices.

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AIMPLAS

PLASTICS TECHNOLOGY CENTRE

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THERMOPLASTICS

- COMPOUNDING
  - CO-ROTATING TWIN SCREW
  - COUNTER-ROTATING TWIN SCREW
  - PLANETARY ROLLER EXTRUDER
- EXTRUSION
  - FILM BLOWING
  - FLAT SHEET
  - FOAMS
  - PIPE
  - PROFILE
  - LAMINATION
  - COATING
  - THERMOFORMING
  - GRAVURE
- INJECTION
  - CONVENTIONAL
  - MULTICOMPONENT
  - MICRO-INJECTION
- BLOW MOULDING
  - EXTRUSION BLOW MOULDING
  - PREFORM BLOWING
- COMPRESSION
- RECYCLING

COMPOSITES

- PULTRUSION
- RTM - INFUSION
- PU FOAMING RIM
- SOLID SURFACE
- MICROWAVE CURING
- SMC
- COMPRESSION