UncorrelaTEd

Solid-liquid thermoelectric systems with uncorrelated properties

Deliverable 6.2

Dissemination plan

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FETOPEN-01-2018-2019-2020 - FET-Open Challenging Current Thinking

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Project partners

LOGO	Partner full name	Acronym
	Universitat Jaume I	UJI
	Institut de Recerca en Energia de Catalunya	IREC
	Kungliga Teksniska Hoegskolan	KTH
	University of Warwick	UW
	Solvionic	SOLV
	Intenanomat	INM

Deliverable Name: Dissemination plan

Led by: UJI

Partners: All

Index

1 Introduction 3
2 Objectives 3
3 Target Groups/Audience 3
4 Image and layout 4
4.1 Templates 4
4.2 Logo 4
4.3 Language 5
5 Dissemination channels 5
5.1 Dissemination to the scientific community 5
5.1.1 Conferences 5
5.1.2 Scientific publications 6
5.1.3 PhD and Master Theses 7
5.1.4 Organisation of Workshops and Conferences 7
5.2 Dissemination and communication to the general public 7
5.2.1 Website 8
5.2.2 Social networks 8
5.2.3 Short Videos 9
5.2.4 Cross-fertilisation with related European projects and platforms 9
5.2.5 Outreach activities 9
5.2.6 Other actions 9
5.3 Dissemination to industry 9
6 Impact evaluation 10
7 Consortium responsibilities 12
7.1 Lead partner (UJI) 12
7.2 Other partners 12
8 Dissemination rules 12
8.1 General rules 12
8.1.1 Obligation to disseminate the results 12
8.1.2 Obligation to inform to other partners 13

8.1.3 Obligation to provide open access to research data and scientific publications 13
8.2 EU visual identity 13
8.2.1 Display the EU emblem without first obtaining approval from the Agency 13
8.2.2 Include the following text 14
8.2.3 Include the following disclaimer 14
9 Conclusions 14
10 Next updates 14

Figure index

Figure 1. The final version of the UncorrelaTEd logo 4
Figure 2. EU emblem 13

Table index

Table 1. Plan of attendance to different events for dissemination activities 5
Table 2. Examples of scientific journals that match the project topics. 6
Table 3. Number of article publications and dissemination activities per partner 7
Table 4. Link to the social networks and website of the project partners 8
Table 5. Summary of impact evaluation 10
Table 6. Next updates of the dissemination plan 14

1 Introduction

The novel hybrid device of UncorrelaTEd comes from the combination of thermoelectrics (TEs) and electrochemistry and will set the scientific foundations of electrochemically activated high-efficiency TE energy conversion by correlating for the first-time electrochemical effects with TE performance. The set of theoretical and experimental data will improve our currently very poor understanding of the mechanisms governing energy conversion in these new systems. Therefore, among others, UncorrelaTEd will generate:

- new hybrid solid-liquid devices with unprecedented TE efficiency in the heat-to-electricity energy conversion,
- new knowledge by studying phenomena and manipulating matter at the nanoscale, and particularly at solid-liquid interphases,
- new materials with tuneable nanoscale composition and porosity,
- and a simulator to model the hybrid devices and simulate their performances, bridging TE material and electronic device concepts.

In order to maximise the scope of the conclusions of the project in the society, scientific community, and industry, UncorrelaTEd needs an appropriate dissemination and communication plan. The dissemination plan envisages the UncorrelaTEd project dissemination and communication strategy as well as the plan for the related actions through the project website and social networks, scientific publications, presentations at industrial fairs and conferences, organisation of a workshop and many other activities. This document extends the information presented in the D6.1. “Project website and social media profiles” (delivered on M2) and will be updated periodically, at M12, M30, M48. All these deliverables are public and available in the project’s website and Cordis.

2 Objectives

This document relates to Task 6.1, included in Work Package 6 (WP6).The main purpose of this task is the implementation of the dissemination and communication activities, according to the dissemination plan, and to contribute to the societal awareness of the new technological results developed by UncorrelaTEd. Therefore, this document contains the strategic actions to be performed for an effective communication of the project outcomes. The document also identifies the main communication tools and outreach activities to be implemented during the project according to the target audiences at different levels. Finally, this plan will indicate the responsibilities of the partners and the key messages to be communicated.

3 Target Groups/Audience

The identified potential audiences to communicate the project’s results have been classified into three different levels:

- **Level 1.** Dissemination activities towards the scientific community, to promote research exchange, share knowledge, and identify suitable collaboration projects relevant to UncorrelaTEd.
- **Level 2.** Dissemination activities towards society, to identify stakeholders who would benefit from the knowledge and the new technology generated by UncorrelaTEd.
- **Level 3.** Dissemination activities towards industry, establishing contact with industries from relevant sectors (energy, sensors, Internet of Things (IoT), TEs) to gather their feedback and attract their interest as potential investors, consumers or end-users.

4 Image and layout

Visual identity of the project has been planned for all the dissemination activities and includes creating datasheets and documents templates, the utilisation of the logo for recognition of activities, etc. The visual identity will be used for both electronic and printed documents.

4.1 Templates

UJI will share and upload to the project intranet templates for text documents, presentations, posters, etc. to keep a uniform project image. Partners will be encouraged to use these templates when presenting UncorrelaTEd results.

4.2 Logo

As it has been reported in the deliverable D6.1. "Website and social media", after evaluating different options and improving the chosen one, UncorrelaTEd has completed the definitive logo that will be used for the heading and the front page of documents, and for the profile image of the social networks, website, etc. The logo (Figure 1) is available at the intranet of the project in different qualities (high/low) and formats (TIFF/JPEG), so all partners can download it and use it.

Figure 1. The final version of the UncorrelaTEd logo

The idea behind the logo design was to include a plug (with the Seebeck coefficient *S* and electrical conductivity *σ* symbols printed in each part) being disconnected in addition to the project acronym (UncorrelaTEd). The disconnected plug represents the key aim of the project, to break the correlation between the Seebeck coefficient and the electrical conductivity to enable unprecedented TE efficiencies. Two colours were selected for the project acronym, blue and red, which represent the temperature difference (hot and cold sides) required to generate electricity using TE devices. The TE characters are in red in the logo to highlight the "Thermoelectric" technology.

4.3 Language

The dissemination of the project will be performed in English, as the official language of the project. Therefore, all communication actions, deliverables, documents and the UncorrelaTEd's social networks will use this language. However, the official languagues spoken at each of the partner's countries could be also used for dissemination and communication activities with no international character.

5 Dissemination channels

The dissemination activities will be performed using different channels to reach a wide audience and try to ensure that any person interested in the project outcomes and news will be reached. UJI will be the partner that will lead and coordinate the dissemination, but all partners are involved in this part of the project, included in WP6.

5.1 Dissemination to the scientific community

5.1.1 Conferences

UncorrelaTEd targets at attending to at least four scientific conferences per year on TEs and with a more general focus on Energy and Materials Science. UncorrelaTEd partners will present the last results of the project, exchange ideas with the different types of audience, create new synergies, and receive feedback to improve or extend the project results. Table 1 contains the events planned to attend during the first part of the project.

Table 1. Plan of attendance to different events for dissemination activities

Event description	Year	Place	Audience	Attendants	Involvement
Destaca Fair	2020	Castellon (Spain)	Scientific, industry	<500	Oral
E-MRS Autumn meeting	2020	TBD[a]	Scientific, industry	<500	Oral
European Conference on Thermoelectrics	2020	Barcelona (Spain)	Scientific, industry	<500	Oral and poster
FirUJICiencia	2020	Castellon (Spain)	General public	<500	Exhibitior
International Battery Association	2020	Bled (Slovenia)	Scientific, industry	250	Poster or Oral
International Conference on Thermoelectrics	2020	Seattle (USA)	Scientific, industry	500-1000	Oral
UK Thermoelectric Network	2020	UK	Scientific, industry	<500	Oral
14th International Conference on Ceramic Processing Science	2021	Luleå (Sweden)	Scientific, industry	<500	Oral and poster

2nd International Conference on Aerogels Inspired Materials	2021	Shanghai (China)	Scientific, industry	<500	Oral and poster
E-MRS Spring meeting	2021	Strassburg (France)	Scientific, industry	<500	Oral
Iberian Thermoelectric Workshop	2021	Lisbon (Portugal)	Scientific, industry	<500	Oral
International Conference on Advanced Ceramics and Composites	2021	Daytona Beach (USA)	Scientific, industry	500-1000	Oral and poster
IDTech show	2021	Berlin (Germany)	Scientific, industry	500-1000	Exhibitor
International Conference on Thermoelectrics	2021	Warsow (Poland)	Scientific, industry	500-1000	Oral
NanoSpain	2021	TBD[a]	Scientific, industry	<500	Oral and poster
UK Thermoelectric Network	2021	UK	Scientific, industry	<500	Oral

[a] to be determined

5.1.2 Scientific publications

It is expected that the results of the project will generate at least 22 scientific publications. Among them, 4 will target journals of impact factor (IF) above 10. For the selection of the journals, the open-access policy will be considered. Gold open access publication will be chosen as a general rule. Green open access will be selected only if gold is not possible. A list of journals considered to submit the publications is included in Table 2.

Table 2. Examples of scientific journals that match the project topics.

Journals with IF<10	Journals with IF>10
ACS Applied Energy Materials, ACS Applied Materials & Interfaces, Journal of Physical Chemistry, Journal of Applied Physics, Applied Energy, Electrochimica Acta, Chemical Communications, Langmuir, Nanoscale, Small, Journal of Chemistry A, Composites Science and Technology, Microporous and Mesoporous Materials, MDPI Nanomaterials, Applied Sciences; Frontiers in Chemistry, Frontiers in Materials, Journal of American Ceramic Society, Applied Physics Letters, Physical Review B, Physical Review Materials.	Nature, Science, Energy & Environmental Science, Advanced Materials, Advanced Energy Materials, Nano Letters, Chemistry of Materials, Advanced Functional Materials, Nature Communications, Nano Energy, ACS Nano.

When the project budget was established in the grant agreement, an approximate minimum number of publications and scientific actions per partner was determined as shown in Table 3.

Table 3. Number of article publications and dissemination activities per partner

Partner	Open access articles[a]	Dissemination activities
UJI	11	24
IREC	2	6
KTH	2	6
WU	6	14
SOLV	0	4
INM	1	2
Total	**22**	**44**

[a] The small number of articles of IREC, KTH and INM compared to UJI are due to the common publications expected.

5.1.3 PhD and Master Theses

An additional output of the project will be PhD and Master Theses related to UncorrelaTEd tasks. Dissemination Plan Updates will include updated information about finished or ongoing PhD and Master Theses associated with the project.

5.1.4 Organisation of Workshops and Conferences

A 2-day workshop will be organised by UncorrelaTEd in M45 addressed to researchers and companies in the areas of thermoelectricity and electrochemistry. This workshop will be a good opportunity to show the final UncorrelaTEd results and identify future project ideas.

5.2 Dissemination and communication to the general public

From the scientific point of view, the benefits and potential impact of the project is clear, but the project completion will have many benefits for society. Cost-effective, safe, and energy-efficient TE devices can contribute to the suppression of batteries in the Internet of Things application as well as in wearable devices, leading to both enormous cost savings in terms of batteries replacement and maintenance costs, also mitigating their harmful environmental effect related to their toxicity. On the other hand, the cost-effective recovery of even a small fraction of waste heat would translate into dramatic savings in oil consumption and greenhouse gases emissions, decreasing costs and improving sustainability, responding positively to the environmental challenges.

The use of UncorrelaTEd devices in the IoT will have an additional social impact since the requirement of batteries greatly limits the IoT development. UncorrelaTEd technology has the potential to be the preferable technology for the IoT since it will provide higher TE conversion efficiencies currently not available. The wide implementation of the IoT in the population and our cities will significantly improve comfort, wellbeing, health monitoring, the optimal use of resources, etc., leading to a super-smart society concept.

5.2.1 Website

The *uncorrelated.eu* domain will be used for the project website, and therefore it has been registered and is going to be renewed yearly until the end of the project. At that moment, the website domain will be transferred to an UJI domain to remain accessible without cost.

Details about the website structure and content have been given in the *D6.1 Project website and social media profiles*, and therefore, readers can refer to this document for extended information about it (click here).

5.2.2 Social networks

The social networks will be used in parallel to the project news section. As for the website, detailed information about the strategy, the content and the actions are included in the public deliverable D6.1. The different social media to be used are **Twitter**, **LinkedIn** and **ResearchGate**. Each social media has different potential users and therefore, this follows the dissemination and communication strategy proposed for the project. Social media will be kept active, aiming at publishing at least one post/tweet/update per month, which can include a picture of an event or a direct link to a publication/report.

To increase the impact of the communication actions and make them easy to find, the hashtag to be included in the tweets or LinkedIn updates related to the project will be #UncorrelaTEdFET (#UncorrelaTEd was already in use for other purposes). Depending on the action to be communicated, other hashtags in addition to the previous one can be used, such as #thermoelectrics or #energyconversion.

All partners will inform the WP6 leader partner (UJI) of the dissemination and communication activities to be performed through their own official channels (Table 4), since this information will be collected to be introduced in upcoming deliverables related to the updates of the dissemination plan.

Table 4. Link to the social networks and website of the project partners

Entity	Twitter	LinkedIn	Link to the news section on the website
UJI	@UJIUniversitat	Universitat Jaume I	Link
IREC	@IREC_Energia	IREC	Link
KTH	@KTHresearch	KTH Royal Institute of Technology	Link
WU	@warwickuni	University of Warwick	Link
SOLV	Not available	Solvionic	Link
INM	@intenanomat	Intenanomat	Not available

5.2.3 Short Videos

An UncorrelaTEd YouTube channel has been created to include short audio-visual material, which will also be included in the corresponding section of the project website. The aim is to create visual and attracting videos, usually no longer than 3 minutes, explaining scientific concepts and experiments from a general public perspective.

5.2.4 Cross-fertilisation with related European projects and platforms

Related ongoing and recently finished H2020 EU projects (such as Magenta, Harvestore, WipTherm, ANTHEM, SuperTEd or QuIET) will be monitored during the action and, if appropriate, the consortium will contact their coordinators to invite them to give talks or participate in UncorrelaTEd meetings. Their experience can be very useful to improve aspects of the project of different nature and to create new synergies for the future.

5.2.5 Outreach activities

The actions described above will be complemented with other outreach activities to increase public engagement in the project. This can cause interesting positive consequences for society, such as attracting the younger generations to scientific careers and communicate the advances on the use of alternative energy sources among future end-users.

These activities include participation in dedicated events (e.g. national science festivals), publication of open-access factsheets, press releases, radio or television interviews, already stablished events from their institutions (e.g. open days, school visits), seminars in department meetings or addressed to engineering and chemistry students, conferences open to general public, demonstration experiments, etc.

5.2.6 Other actions

- **Scientific dissemination units:** Research pitches, articles in newsletters, educational content, etc.
- **Popular science magazines:** Chemistry World, Materials World, etc.
- UncorrelaTEd will participate in the **Sustainable Energy Week**, will contact FET2RIN (network focused on supporting FET projects), and will participate in the Green Innovation and Investment Forum.

In addition to these identified actions, all the UncorrelaTEd partners are encouraged to propose other ways of communication and dissemination.

5.3 Dissemination to industry

UncorrelaTEd will study low-cost, abundant, non-toxic and easy to process TE materials suitable for low-temperature applications (below 150 °C) to establish a sustainable, cost-effective, and environmentally friendly technology for future energy harvesting and self-powered device technologies, allowing a widespread application in a large number of additional markets.

The participation in conferences, fairs, workshops and other events will contribute to the dissemination of the results to the industry, since in many of them a significant number of delegates attend to be informed about the latest developments in the sector. Moreover, the inclusion of partners from industry in the Consortium, and also industrial members in the Advisory Board (European Thermodynamics Ltd. and Dana Inc.), will contribute to disseminating the project results.

6 Impact evaluation

The impact of the dissemination and communication actions must be evaluated to understand the real scope of UncorrelaTEd. Each type of dissemination and communication activity has different methods to assess the interaction with the public, depending on the nature of the action and the information that offers each platform. Results of the dissemination and communication impact, and methods to assess its impact, will be included in the three next updates of the dissemination plan (foreseen for M12, M30 and M48), which will be publicly available.

Key performance indicators (KPIs) are used to evaluate the success of an activity. Table 5 shows a summary of the main KPIs used to have an approximate idea of the impact of dissemination and communication actions and their impact on the different audiences.

Table 5. Summary of impact evaluation

Method	Implementation	Result indicators	Impact indicators	Target group [a]	Lead member
Seminars, conference, fairs, workshops.	Organisation, participation, collaboration and attendance to events.	Nº of attendees to the event. Nº of attendees to the conferences. Nº of contacts exchanged. Nº of possible future ideas to develop. Nº of requests for further information. Nº of responses to invitations.	The outcomes of the project can be discussed and provide new points of view to solve problems or develop new ideas. Attendance indicates the success of the event and the interest in the topic	Scientific public. Industry.	All
Publications	Journal. Conference proceedings.	Impact factor of the Journal.	Impact factor indicator can assess the quality	Scientific public	All

	Books (and chapters).	Reputation of the Editorial. Nº of citations. Nº of Downloads.	of the publications. Citations and downloads indicate the real interest in the publications.		
Project website	Public/Private area. Documents download section. News & events.	Nº of visits. Nº of downloaded documents. Nº of pages visited.	Knowing the interactions with the website allows to determine the interest in the project.	All target groups	UJI
Social media (Twitter, LinkedIn and ResearchGate)	Open profiles for different types of audience	Nº of social followers. Retweets/shares. Recommends/likes. Mentions.	Social networking is a powerful communication tool, even in industry and science fields and can help to create engagement.	All target groups	UJI
Video	YouTube channel, recording videos.	Nº of subscribers. Quantity of views.	Short videos explaining the phenomena can attract a lot of interest to this topic.	General audience. Industry.	All
Mass media partnership	Press (electronic and printed) releases, TV coverage, radio coverage.	Nº of press/TV/radio interviews. Nº of press releases issued. Potential audience of the media.	Press releases are the perfect complement to social networking actions.	All target groups	UJI
Outreach and other activities	Factsheets. Participation in open days and school visits.	Nº of actions. Nº of attendants. Nº of interactions.	These actions complete the dissemination and	All target groups	All

	Seminars for department or students. Research pitches. Publications in popular science magazines.		communication plan covering other non-formal actions defined before.		

[a] All target groups involves general public, scientific public, potential beneficiaries, industry beneficiaries, public agencies, etc.

7 Consortium responsibilities

All members of the Consortium must contribute to public engagement and communicate the results of the project to society. The tasks associated with communication and dissemination actions are going to be distributed as follows.

7.1 Lead partner (UJI)

- Managing and updating the webpage, intranet and social networks.
- Collecting, evaluating and archiving press releases, communication and outreach activities.
- WP6 deliverables preparation.
- Informing consortium members about important aspects related to WP6.

7.2 Other partners

- To inform and send the coordinator UncorrelaTEd press releases, news, and social media communication actions managed by their institutions.
- To keep a fluent communication with the project coordinator and, whenever possible, provide information and graphic material (such as pictures, posters, leaflets, etc.) of any outreach or communication activities developed within the framework of the project.

In any case, all members of the consortium must follow the dissemination rules exposed in Section 8.

8 Dissemination rules

There are some general rules that the dissemination activities must follow, according to the EU Regulations, and the UncorrelaTEd's Grant and Consortium Agreements.

8.1 General rules

8.1.1 Obligation to disseminate the results

According to article 29.1 of the Grant Agreement: Unless it goes against their legitimate interests, each beneficiary must (as soon as possible) disseminate its results by disclosing them

to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications or any other medium.

As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data, if the achievement of the action's main objective (described in Annex I of the Grant Agreement) would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan (and its updates, and the technical reports to the Agency) will contain the reasons for not giving access.

8.1.2 Obligation to inform to other partners

According to article 8.4 of the Consortium Agreement: Prior notice of any planned publication shall be given to the other parties at least 20 calendar days before sending it to publication. Any objection to the planned publication shall be made following the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 14 calendar days after receipt of the notice If no objection is made within the time limit stated above, the publication is permitted. However, the parties will attempt to reply as soon as possible to minimise the delay in the submission of the publication.

8.1.3 Obligation to provide open access to research data and scientific publications

The publication of the results will be done through Gold open access (green when not possible), for which a specific part of the budget has been established. Notwithstanding, a copy of the publication and the data generated will be deposited in the open-access Zenodo repository, which belongs to OpenAire (and partners' institutional repositories when possible).

8.2 EU visual identity

Unless the European Commission requests or agrees otherwise or unless it is impossible, any communication, dissemination activity related to the action (and for social media profiles) and any major results funded by the grant must consider the following actions.

8.2.1 Display the EU emblem without first obtaining approval from the Agency

It can be downloaded in different versions from here, and more instructions are available here. When displayed together with another logo, the EU emblem (Figure 2) must have appropriate prominence.

Figure 2. EU emblem

8.2.2 Include the following text

For communication and dissemination activities:

> "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 863222".

For major results:

> "This *[insert type of result]* is part of a project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 863222".

8.2.3 Include the following disclaimer

Any communication activity and dissemination of results related to the action must indicate that it reflects only the author's view and that the European Commission is not responsible for any use that may be made of the information it contains.

9 Conclusions

A dissemination plan of the project results has been designed in this document and will be implemented in WP6. This document will be updated periodically, at M12, M30, M48.

10 Next updates

Table 6 contains the schedule planned for the next updates of this document.

Table 6. Next updates of the dissemination plan

Deliverable No	Title	Lead member	Dissemination	Month
D6.2	Dissemination plan	UJI	Public	3 (Done)
D6.3	**1st update of the dissemination plan**	**UJI**	**Public**	**12 (Next)**
D6.4	2nd update of the dissemination plan	UJI	Public	30
D6.5	3rd update of the dissemination plan	UJI	Public	48