Guide4Applicants

POSTDOCTORAL FELLOWSHIP PROGRAMME

for the career development of international talents of the energy research fields in the Iberian Peninsula

Co-funded by the European Union

Talent4Iberia has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Sklodowska-Curie grant agreement No 101128265.

JUNTA DE EXTREMADURA

FUNDECYTPCTEX

TABLE OF CONTENTS

1. ABOUT TALENT4IBERIA PROGRAMME

Talent4Iberia is a Postdoctoral Fellowship Programme for talent attraction to Extremadura offering interdisciplinary and intersectoral fellowships with a duration of 3 years each for the mobility and training of 10 postdoctoral researchers of any nationality to develop R&D activities in ENERGY STORAGE, with the purpose to boost their employability and career opportunities in an exceptional research environment.

This programme is co-funded by the European Commission under the MSCA COFUND of the HORIZON EUROPE Framework Program, awarded under the Call HORIZON-MSCA-2022-COFUND-01 with the Grant Agreement nº 101128265.

The programme is coordinated by the Regional Government of Extremadura (Junta de Extremadura), Spain, and implemented by 3 Spanish recruiting Host Institutions: 1) Foundation FUNDECYT Science and Technology Park of Extremadura - Iberian Centre for Research in Energy Storage (Fundecyt-CIIAE); 2) University of Extremadura (UEX); 3) Centre for Scientific and Technological Research of Extremadura (CICYTEX), and counts with the participation of 21 Associated Partners from 15 different countries (EU and abroad), from academia, research centres and industry dedicated to the energy sector, who will offer secondments to the selected research fellows.

Talent4Iberia is focused on generating in-depth knowledge and promoting excellent talent within a number of specific scientific and technological specialization areas in the field of Energy, in line with expertise and long- term priorities of the Implementing Partners that will recruit and host the researchers. The programme involves both academic and industrial participating organizations with strong expertise on energy technologies, guaranteeing this way an attractive, intersectoral and international ecosystem with a focus on ENERGY STORAGE.

What does Talent4Iberia offer?

Throughout the project's duration, from 2025 to 2028, a total number of ten outstanding postdoctoral fellows from around the world will come to Extremadura Region. As a fellow in the project, you will:

- Get the chance to pursue your own research project and move your career development forward;
- Work in a well-structured research environment;
- Have the opportunity to go on secondments to a global network of partners with a wide range of academic profiles, thus providing not only specific opportunities for collaboration and further networking, but also attractive possibilities for non-

academic secondments, thereby bringing in practical expertise and a variety of career pathways.

By combining *'training through research'* on the one hand, and *focused skills development* on the other, we aim to ensure interdisciplinary and intersectoral exchange and collaboration. Depending on your project, you will participate in an individualized Training Programme, consisting of compulsory and optional training, joint and individual training, and combining virtual and in-person activities and courses on transferable skills, as e.g. Open Science, Gender Equality, Ethics, Research Management incl. IP, and others.

Remuneration and Employment Conditions

Remuneration

This Call offers 10 positions for postdoctoral researchers from any nationality who will be hired under a 3-year full-time employment contract. The selected Fellows will receive a range of benefits, including access to maternity/paternity full pay leaves (16 weeks for each parent), pension rights and sick leave, as well as public healthcare coverage and medical assistance.

The remuneration awarded to the Fellows will include a base annual gross salary of €38,000, plus mobility allowance (max. €3,500) for relocation, plus family allowance (max. €1,666/year) in the case the researcher has family obligations, and a travel allowance (max. €50,000) to cover travel and subsistence during secondments or short stays to be performed during the fellowship. In case of researchers with disabilities, a special needs allowance will be allocated. Upon the contract's conclusion, fellows will be entitled to a severance payment that corresponds to 20 days of salary for each year of service.

A breakdown of the total amounts allocated to each Fellow:

LIVING ALLOWANCE	**38,000 EUR/year**
Base annual gross salary. The net salary is calculated by subtracting the employee's taxes and social security contributions foreseen by Spanish law from the gross amount (annual net salary approx. €35,500 incl. one severance payment at the end of the contract period).	
MOBILITY ALLOWANCE	**Max. 3,500 EUR**
Relocation expenses according to the average distance, in kilometres, between the Fellow's location of origin to the location of the Host Institution in Extremadura (Spain).	
FAMILY ALLOWANCE	**1,666 EUR/year**
In case the recruited fellow has any family obligations, and moves with his/her family.	

TRAVEL ALLOWANCE	Max. 50,000 EUR
Covers travel and subsistence during Secondments or short stays performed during the fellowship period (up to a max. of 12 months).	
RESEARCH COSTS	**Max. 9,000 EUR**
Finances the R&D&I activities contemplated in the fellow's research proposal (includes expenses for small scientific equipment, consumables, travel and subsistence allowances, publication costs and other expenses necessary for its development).	

Employment Conditions

Talent4Iberia promotes adequate work and employment conditions for the 10 recruited postdoctoral fellows, fulfilling the principles set in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (C&C).

The postdoctoral research fellows will be hired under the modality of access contract for doctoral research staff, in accordance with the provisions of article 22 of Law 17/2022, of September 5, which modifies Law 14/2011, of 1 June, of Science, Technology and Innovation, full-time with a fixed duration for a maximum of 3 years, counting from the start date of the contract.

Statutory working practices for Talent4Iberia fellows will be the same as for other staff from the Host Institutions working in similar positions. Fellows will be entitled to carry out 37,5 hours of work per week and have an annual period of paid leave, as well as official holidays, sick leave and days off work for personal matters.

They will also have access to all the facilities & services at the host institutions and receive the support of the local administration to complete the necessary paperwork. Other working conditions will be aligned with the national legislation requirements; for example, sick leave or maternity/paternity leave.

Talent4Iberia Partnership

The Programme Coordinator

Talent4Iberia Programme is managed by the General Secretariat of Science, Technology, Innovation and University of Junta de Extremadura, through the Public Scientific Research Resources Service. This Service is responsible for the design, implementation and financing of public policies and R&D matters. Specifically, it is the body in charge of public University planning and funding, among which lie the management of R&D programmes, providing financial support to more than 370 PhD for over 15 years.

The Recruiting Host Institutions

Talent4Iberia Programme counts with three Host Institutions in charge of recruiting, managing and overseeing the research done by the Research Fellows during the 36 months of the fellowship. These three organizations are:

- Foundation FUNDECYT Science and Technology Park of Extremadura – Iberian Centre for Research in Energy Storage (Fundecyt-CIIAE)
- University of Extremadura (UEX)
- Centre for Scientific and Technological Research of Extremadura (CICYTEX)

Foundation FUNDECYT Science and Technology Park of Extremadura – Iberian Centre for Research in Energy Storage (Fundecyt-CIIAE)

The **Iberian Centre for Research in Energy Storage (Fundecyt-CIIAE)** is the response to the technological and scientific challenges in manageability of green energy. Under an agreement signed by the General State Administration of Spain, the Centre for Energy, Environmental and Technological Research (CIEMAT) and the Regional Government of Extremadura with the goal of increasing and accelerating long-term and sustainable investment in R&D&i and to energize and improve our technological and scientific response to the challenges derived from the management of green-energy production, in particular with regards to: the production, storage, transport and industrial applications of hydrogen; thermal storage for industrial use; and the most relevant electrochemical storage technologies such as Lithium, Metal-air, Flow Batteries, etc.

The Centre aims to be a **world-leading research centre** throughout the entire energy storage cycle, from the physical chemistry of the materials to their scaling and application, combining the basic research supported by the public sector, the technological development driven by public-private collaboration and business innovation.

Find more information here: https://ciiae.org/en/inicio-en/

University of Extremadura (UEX)

The University of Extremadura (UEX) is the main public research institution in Extremadura (Spain) with 4 university campuses, with over 24,000 students and **2,405 Researchers and Professors**, and ranked 1,042 amongst universities all over the world (Scimago Institutions Ranking, SIR 2023) from over 4,533 institutions surveyed; and has been awarded **Campus of International Excellence since 2011** in association with two Portuguese universities. The Campus addresses high levels of excellence in teaching and research activities, transfer of knowledge and dissemination of science and innovation

to the society. UEX provides extensive, state-of-the-art research laboratories and specialized infrastructures to support the transfer of research from the research teams to industry.

In Talent4Iberia, UEX participates as Host Institution with two main research groups dedicated to energy: the **Power Electrical and Electronic Systems Research and Development Group (PE&ES)** with more than 15 years of experience in the fields of power electronics applied to electric power grids, renewable energy sources, smart energy grids, energy storage and monitoring and control systems; and the **Group for the Integral Use of Biomass Waste and Renewable Energies** at UEX (**GAIRBER Research Group**) focussed on the comprehensive use of biomass resources for energy production (combustion processes, pyrolysis, gasification, obtaining biofuels), the preparation of porous materials (particularly activated carbons), with porosity and surface chemistry suitable to be used in specific applications; and the preparation of composite materials based on residual biomasses. On the other hand, the group investigates the use of wind and solar renewables in integrated systems supported with hydrogen.

Find more information here: https://www.unex.es/?set_language=en&cl=en

Centre for Scientific and Technological Research of Extremadura (CICYTEX)

CICYTEX is a public entity with patrimonial, organizational and functional autonomy, from the Regional Government of Extremadura (JUNTA-EX). It is made up of the 5 following institutes: Institute of Agricultural Research **'La Orden-Valdesequera'**, the Agro-Food Technology Institute of Extremadura (**INTAEX**), the Institute of Cork, Wood and Vegetal Carbon (**ICMC**), the Centre for Ecological and Mountain Agriculture (**CAEM**), and recently by the Technological Institute of Ornamental Rocks and Construction Materials (**INTROMAC**).

In Talent4Iberia, CICYTEX participates as Host Institution, as one of the Supervisors is the Scientific Director of this research centre, and he is also part of the **GAIRBER Research Group** (Group for the Integral Use of Biomass Waste and Renewable Energies at UEX).

Find more information here: https://cicytex.juntaex.es/inicio

The Associated Partners for Secondments

Talent4Iberia network currently includes 21 academic and non-academic partners who form a large international, interdisciplinary and cross-sectoral “network of networks”. Each of these associated partners is committed to host Talent4Iberia Fellows at their premises during secondments. Each secondment may last between 3 – 6 months, and the total duration of secondments to associated partners will be limited to a maximum

of 12 months of the fellowship duration. The available time frames for secondments will be relatively fixed so as to ensure that joint activities and events in Extremadura can be attended by the entire current cohort of fellows.

Fellows are encouraged to choose an associated partner according to their own individual research focus and training needs, either from the existing network or from new partnerships they identify as being useful in order to enrich their fellowship experience.

These partners are listed in Annex II of this document. You can also check them out here at our interactive map.

Training and Personal Career Development Plan (PCDP)

Talent4Iberia's training programme will provide the research fellows with a wide and interdisciplinary set of skills specifically related to their research area, as well as a range of diverse transferable skills, through local training, network-wide training activities and secondments.

The core of the training programme is led by the ***Talent4Iberia Training Coordinator (TCO)***, FUNDECYT-PCTEX, and will be supported by CAPACYT (https://capacyt.fundecyt-pctex.es), a virtual platform created by FUNDECYT-PCTEX that offers training services in areas as specific as science, technology, innovation, research and development.

The training activities will be organised around the 3 areas of contents and will consist of compulsory and optional training, joint and individual training, and combining virtual and in-person activities, as described below, indicating the total amount of training hours to be undertaken by each Research Fellow:

DESCRIPTION	**TYPE OF TRAINING**
Area 1) Cross-cutting research skills	
10 compulsory individual hours per year (total of 30 hours)	Virtual/On-Site
10 compulsory joint hours per year (total of 30 hours)	On-Site (Summer School)
10 optional hours per year (total of 30 hours)	Virtual
Area 2) Specific training for individual projects	
20 compulsory individual hours per year (total of 60 hours)	Virtual/On-Site
10 optional hours per year (total of 30 hours)	Virtual/On-Site
Area 3) Training to improve transversal entrepreneurial competences	
10 compulsory individual hours per year (total of 30 hours)	Virtual
20 compulsory joint hours per year (total of 60 hours)	On-Site (Summer School)
10 optional hours per year (total of 30 hours)	Virtual

Personal Career Development Plan (PCDP)

The training programme for each researcher will be customised to their needs and will ensure a balance between local and network-wide training opportunities and the contribution from academic and non-academic partners. This will be achieved through a **Personal Career Development Plan** (PCDP) to be set up between each Research Fellow and his/her Supervisor at the selected Host Institution, and which contains training, secondment and networking activities.

The PCDP will include a diagnostic analysis of the 3 training areas:

a) Personal researcher profile and skills.
b) Scientific training to achieve the project objectives.
c) Progress in the key areas of entrepreneurial mindset included in the European Framework for Entrepreneurship Competences (EntreComp) of the European Union.

The PCDP will be drafted, in Spanish or English, in accordance with the standardised model available on SECTI's platform. It will not be possible to undergo Secondment periods at times when coinciding with compulsory on-site training activities included in the PCDP of each Research Fellow.

2. ELIGIBILITY CRITERIA

The programme is open for all postdoctoral researchers with no restrictions on nationality, age and/or gender. Equal opportunities policy is taken into account to ensure a balanced participation of women and men at all stages of the Talent4Iberia postdoctoral programme, alongside equal opportunities and no discrimination on the basis of gender, race, language, religion, or disability.

Postdoctoral researchers interested in being selected for one of the 10 Fellowships offered by the Talent4Iberia Programme must meet the following requirements in order to be eligible for the selection process:

a) **Hold a PhD degree** at the time of submission of the application. The date of obtaining this degree is considered to be the date of the final defence and approval of the thesis.

   In case the Applicant holds a PhD emitted by a foreign university, it must be recognised or, failing this, the corresponding certificate of equivalence issued by the Rector of the University of Extremadura (UEX) must have been requested, stating the foreign degree held by the interested party and the university of

origin, in accordance with the provisions of the Resolution of 24 March 2017 of the Management of the UEX.

b) The Applicant must comply with the **Mobility Rule**: Not have resided or carried out their main activity (work, studies etc.) in Spain, for more than 12 months in the 3 years immediately before the date of the call deadline.

For this calculation, shorter periods will be considered, provided that the number of months does not exceed a total of one year. The period shall be accredited with the provision of any supporting documentation of the stays carried out, by means of employment contracts, enrolment in studies or equivalent.

Holiday periods, short stays and the period as a refugee, in accordance with the provisions of the Geneva Convention, will not be considered for the calculation.

c) Applicants may not be part of the permanent staff of the selected recruiting Host Institution at the time of submitting their application.

d) Research proposals submitted by the Applicants must be related to at least one of the Research Topics mentioned in Section 3. Submitted proposals that are not related to these Topics will be automatically dismissed.

3. RESEARCH TOPICS

The Talent4Iberia project wants to promote interdisciplinary and innovative scientific research and a competent and personalized training programme for the postdoctoral Research Fellows by bringing together different scientific fields to provide the Researchers with relevant knowledge, methods and skills across a wide range of disciplines around the Energy storage ecosystem.

Candidates must provide their own **Research Project proposals** related to any of the following research topics:

- Line 1: Electrical Energy Storage
- Line 2: Hydrogen and Power-to-X
- Line 3: Thermal Energy Storage

You can find a list with all Eligible Supervisors in Annex I.

Line 1: Electrical Energy Storage

Development of storage technologies that allow the integration of renewable energy in the electricity sector, improving the stability and flexibility of electricity networks in the face of the new generation and consumption scheme. Within this field of action, research will be promoted on batteries (Li-ion, redox flow batteries, metal-air, Na-ion) and supercapacitors to address the existing performance gaps as well as research on new materials, applications and devices to develop new and innovative batteries and supercapacitors.

Proposals under this Line will focus on:

- The research on advanced materials to significantly improve the performance of current batteries, explore new applications, providing functionality to network operators.
- The improvement current redox flow batteries with new environmentally friendly and cost-less electrolytes.
- The research on the degradation of batteries to improve their cycles and lifetime for the development of reliable and profitable products, as well as their possible recycling.
- The increase of energy density, insulation, resistance to high temperatures and cost reduction of supercapacitors for their applications in energy storage markets focusing on microsupercaps as an innovative solution.
- Circular Economy of energy storage systems for achieving new methods not only for recycling any kind of energy storage device but also to increase the knowledge of other important related topics such as Eco-design, Second life applications...
- The research on Energy Management Systems and Energy Storage strategies at residential, industrial and distribution grid levels.
- The research on Power Electronic System for high efficiency and advanced control of Electrical Energy Storage.
- The research on design, monitoring, protection and control of Electrical Energy Storage going from Cells to Packs, hybridizing batteries and supercapacitors, and implementing BMS (Battery Management Systems)

Line 2: Hydrogen and Power-to-X

Research on low-carbon-footprint technologies, conversion to secondary energy carriers, chemical and electrochemical energy storage and their impact on the environment, climate and economy are key aspects of his research.

Proposals under this Line will focus on:

- The research on the sustainable generation of hydrogen by low and high temperature electrolysis and biomass valorisation.
- The research on the technology for the storage of hydrogen, including preparation and processing of new materials, materials characterisation and materials testing.
- The research on the technology for the capture and storage of $CO^2$and its conversion into secondary energy carriers such as methanol and ammonia, using thermal CO^2 reduction and electrochemical CO^2 reduction, and circular economy approaches.
- The research on the scale-up of processes from laboratory to pilot plant (TRL 4-6) for prototypes towards their final market applications, including all the topics listed above.
- The use of models and regulations to inform each scale-up step, namely atomistic simulations, computational fluid dynamics (CFD), life cycle assessment (LCA), techno-economic analysis, energy systems analysis and regulation.

Line 3: Thermal Energy Storage

In addition to the transformation of the electricity sector, the decarbonisation of thermal energy systems (heat/cold) is required to meet the objectives of climate change, for which there are different technological pathways. The main value of thermal storage lies in its ability to store large amounts of energy at a relatively low cost and in sectors as diverse as heating/cooling of buildings, industrial heating, or cooling processes, and as a complement to massive energy storage for the electricity grid. Thermal energy storage systems make it possible, for example, to store excess solar energy during the day and use the stored energy at night. They can also be used in adsorption refrigeration cycles, replacing traditional compressors.

Proposals under this Line will focus on:

- The research for the integration of thermal batteries on the grid, with special focus on aspects such as the optimization of the electrical heaters that are used to transform electricity into heat for its subsequent storage on molten salts and PCMs.
- The research on thermochemical and sorption-based energy storage.
- The research on Phase Change Materials (PCM) based energy storage through the rational design, synthesis and characterization of new PCMs showing high enthalpy solid-solid phase transitions and their optimization for long-term storage in more compact devices with increased lifetimes.

4. HOW TO APPLY

All applications must be submitted online through the official programme's recruitment platform: https://secti-idi.juntaex.es

The deadline for submission of applications and required documentation is **one month from the day following the date of publication of the Call** Announcement in the DOE (Diario Oficial de Extremadura).

PLEASE NOTE:

In order to correctly apply for one of the Fellowships offered by the Talent4Iberia Programme, the applying Candidates must submit the Application Form (CIP code 6855) available on SECTI's platform, under the access point indicated as ***Proyecto 101128265 Talent4Iberia****. All instructions and documentation required to be submitted with this Application Form, including necessary templates, are available, in Spanish and English, on the platform.*

Please, consider the information under this Section as a compilation of the information available on the platform.

Application form

ADVICE:

There is no option to directly select the supervisor of your preferred choice when filling out the Application Form in order to apply for the Talent4Iberia Postdoctoral Fellowship programme. Instead, you must choose one of the three eligible Host Institutions where you wish to be recruited.

The list of Supervisors will help you make the best match in order to select the corresponding Host Institution accordingly. Once selected as a Talent4Iberia research fellow, you must carry out your fellowship at the chosen Host Institution, even if the supervisor of your preference is no longer available for any reason.

Each Candidate may only submit a single Application Form to postulate for one of the Fellowships. If more than one Application Form is submitted by the same candidate, only the last one submitted will be valid.

In the event of discrepancies between the data indicated in the Application Form and the documentation provided by the Candidate, for the purpose of its validity, the data contained in the accreditation documentation will be considered.

Please note, that Candidates must choose one of the Host Institutions when applying for the Talent4Iberia Programme, not one of the supervisors. In the event that the Candidate is beneficiary of one of the Fellowships, they must carry out their research in their chosen Host Institutions, even though the supervisor they want to work with is no longer available.

The submission of the Application Form will entail the following:

a) It will imply knowledge and acceptance of the content of the Regulatory Bases.
b) It will entail implicit authorisation to consult or obtain documents that have been drawn up by any public administration, necessary for the processing of the grant award. Specifically, the title of doctor issued in Spanish territory, unless the applicant expressly opposes this.

In the event of an interruption of the service of the webpage or other technical issues that make impossible the correct functioning of the platform, and until the problem is solved, Junta de Extremadura may determine by administrative resolution an extension of the unexpired deadlines.

Required Documentation

The documentation required to be submitted with the Application Form, and the necessary templates, are indicated and available on SECTI's platform, in Spanish and in English. Here, just the compilation of this documentation, to complete the information offered in this guide:

a) Official Doctoral Degree. In case the degree has been emitted by a foreign university, the corresponding Certificate of Equivalence must be provided or, failing this, the corresponding proof of submission to the University of Extremadura, as mentioned in Section 2, paragraph a) of this document.

b) Research proposal, according to the standard model available on SECTI's platform, in Spanish or English, with a maximum length of 5 pages, signed by the candidate and describing the research project to be carried out during the Fellowship.

c) The Normalized Curriculum Vitae (CVN) of the Candidate, generated through FECYT's CVN editor, in PDF format.

d) Affidavit of the veracity of the curricular merits presented through the CVN.

e) Affidavit of not having enjoyed a contract as a doctoral research personnel or under an extinct modality of contract within the Spanish Science, Technology and Innovation System. If applicable, the Candidate must prove proof of employment for the period of said contract by means of a certified document attached to the application.

Affidavits indicated in paragraphs d) and e) shall be submitted using the standardized models available on SECTI's platform, and must be signed by the Candidate.

f) Certificate of disability equal to or greater than 33%, if any.

g) Proof of compliance with the Mobility Rule for Marie Skłodowska-Curie Actions, as mentioned in Section 2, paragraph b) of this document: municipal registries, employment contracts, rental contracts, on-site studies or any document proving that the Candidate has not resided in Spain.

h) Documentation certifying that the Candidate has had any circumstance that has limited his/her research career due to interruptions for working time in industry or other sectors, for parental leave, illness and compulsory military service, and the duration of this circumstance, if any.

In the case of paragraph f), g) and h), if the submitted documentation is in a language other than Spanish or English, a corresponding official translation into Spanish, certified by a sworn translator authorized or residing in Spain, must be included.

Once submitted, modifications to the CVN or the research proposal will not be accepted.

Access and Authentication Procedures for the Candidates

The Candidate may access SECTI's platform through any of the authentication methods established in the system, which must be properly configured and validated on the device used to access, in accordance with the provisions of Decree 225/2014 of 14 October, on the legal regime of electronic administration of the Regional Government of Extremadura.

If the Candidate cannot be identified using any of these methods, the SECTI will enable a special form for requesting a temporary access key to the webpage https://secti-idi.juntaex.es. Once this form has been completed, the document must be signed, together with a copy of a valid national identity document or passport, and sent by email to the Junta de Extremadura at ayudaspri.gestion@juntaex.es. Once the Junta de Extremadura has reviewed and validated the application, the access keys will be sent to the Candidate via the email indicated in the application form.

Please, bear in mind that **the validity period of this temporary access key concludes with the date of the resolution of the Talent4Iberia International Call**.

Subsequently, **within one month from the signing of the contract** with the Host Institution, the Candidate will be required to access the SECTI platform using a valid electronic ID card or Digital Certificate.

5. THE SELECTION PROCESS, COMMITTEES, ESTIMATED DATES AND TIMETABLE

The entire selection process will be supported by different committees to guarantee the transparency of the application and selection process, the fair evaluation, as well as the equal and non-discriminatory treatment of the candidates, in accordance with the criteria established in the Talent4Iberia programme.

Programme Coordinator (PCO)

The competent body for the organization and instruction of the concession procedure will be the Service with powers in public scientific research, designated as the Talent4Iberia Programme Coordinator. Specifically, the person in charge of said Service will be designated as the Talent4Iberia Programme Manager, who will be responsible as coordinator, together with the Programming Committee, for making decisions about the Project, including the selection process, as well as all the actions necessary for the determination, knowledge and verification of the data and evaluation of the applications by virtue of which the resolution must be pronounced.

Programming Committee (PC)

The PC is the decision-making body of the programme and therefore is responsible for all programme operations, including the selection process. The PC is composed by the Programme Coordinator representing the Regional Government of Extremadura (JUNTA-EX) and one representative of each recruiting organisation (Fundecyt-CIIAE, UEX, and CICYTEX). This committee will seek to have an adequate gender balance.The PC will be responsible for the launch of the call of Talent4Iberia Programme, the approval of the lists of selected candidates in each phase of the selection process and the invitation for the successful candidates to become Talent4Iberia fellows.

Evaluation Panel (EP)

The scientific-technical evaluation of the applications will be carried out through an external Evaluation Panel, under the coordination of the State Research Agency (AEI), as the body in charge of assigning its evaluation to industrial experts and/or scientists specialized in the research areas of the Talent4Iberia Programme, of recognized international prestige, avoiding possible conflicts of interest. The AEI's computer

applications have mechanisms that guarantee the confidentiality and traceability of all operations, in addition to gender equality in scientific evaluation processes.

The Selection Process is divided into 5 different steps and is expected to last 6 months.

These steps are:

STEP 1 – Submission of applications

Once the Call is launched, Applicants will have 1 month to submit their application and the required documentation. They must complete and send the online Application Form and load the required documentation mentioned in Section 4.

STEP 2 – Eligibility check

Once the submission process is closed, the Programme Manager (PM) from Junta de Extremadura and will start reviewing the applications received to ensure that all of them comply with the Eligibility Criteria and that the documentation submitted is correct, as mentioned in Sections 2 and 4 respectively.

Once the applications and the documentation provided have been thoroughly reviewed, Applicants having submitted incomplete forms or whose applications contain rectifiable errors, may be required to correct the application or provide additional documentation through the webpage https://secti-idi.juntaex.es within 10 days from the date of the notification. Candidates that fail in correcting their application will automatically be rejected.

Expected to take around one month, once the process is finalized, the PM will notify via email the status of the applications submitted, either approved or rejected, and will invite the admitted Candidates to the next step of the selection process.

STEP 3 – Evaluation process

After communicating the admission and rejection of the submitted applications, the PM will send the Research Proposals and CVN of all admitted Candidates to the Spanish State Research Agency (Agencia Estatal de Investigación, or AEI) to be evaluated by an Evaluation Panel composed of, at least, 3 evaluators, from which 1 will be an international evaluator, specialized in the three Research Topics of the project.

Over a period of three months, each candidature will be assessed individually and, once finished, the AEI will issue a report to the Programme Manager (PM) with the final score

of each of the admitted Candidates. This final score will be the average of the scores awarded by the experts in their assessment.

Applications will be assessed according to the Talent4Iberia Evaluation Criteria:

C1. Scientific-technical trajectory	Points	Weight	Score
Scientific-technical contributions	0-5	25%	0-25
Mobility and internationalization	0-10	50%	0-50
Leadership	0-5	25%	0-25
Score / evaluator	**20**		
Max. total score phase 1			100
Threshold (70%)			70

C2. Research project proposal	Points	Weight	Score
Quality and originality of the research proposal	0-40	50%	0-50
Relevance of the proposed objectives in the corresponding scientific-technical context	0-15	20%	0-20
Results transfer plan	0-15	20%	0-20
Feasibility of the research proposal	0-10	10%	0-10
Score / evaluator	**80**		
Max. total score phase 2			100
Threshold (70%)			70

The PM will issue a final binding report of the applications submitted, their ranking in descending order from the highest scores obtained, and the final selection of 10 Candidates. A list of substitutes will also be drawn up, again in descending order of the scores obtained.

STEP 4 – Online interview and selection of the candidates

Finally, over a period of one month, the selected Candidates and the first 3 substitutes of the reserve list will be invited by the PM to carry out an online interview with the Supervisor of the chosen Host Institution. Face-to-face, videoconference and telephone interview options will be available for every Candidate. The objective of these interviews is to verify the motivation, maturity and communicative capacity of the candidate research staff, without altering the final score obtained.

After these interviews have been all carried out, Junta de Extremadura will publish the final list of admitted candidates to the Talent4Iberia Postdoctoral Fellowship Programme in the DOE (Diario Oficial de Extremadura). Once the list is published, Candidates will have a period of **10 days** to officially accept or resign the Fellowship by fulfilling and submitting the standardized acceptance or resign forms that will be published alongside the aforementioned final list and readily available on SECTI's platform.

If a selected Candidate resigns, the next Candidate in the reserve list will be selected instead. Candidates from the reserve list will have a period of 5 days to officially accept or resign the Fellowship by fulfilling and submitting the standardized acceptance or resign forms previously mentioned.

STEP 5 – Fellow's Appointments

Candidates who have officially accepted the Taln4Iberia postdoctoral fellowship will have a maximum period of **two months** to sign the pertinent contract, counting from the publication of the final list of appointed Research Fellows in the DOE (Diario Oficial de Extremadura).

It is expected that selected Fellows will start their fellowships in the Host Institution on **April 2025,** taking into consideration any periods required to get permission to work in Spain.

If a selected Fellow finally ends up refusing the offer, the position will be, as previously mentioned, offered to the following candidate on the reserve list, and so on. Vacancies not filled in the 1st call for proposals will be included in an exceptional 2nd call, with an estimated starting time on April-May 2025 the latest.

If needed, the Talent4Iberia Programme will offer personalized assistance to all appointed Research Fellows in order to get their work permits, visa and other required documents.

Ethics

All participating organisations of Talent4Iberia Programme, in particular the recruiting host institutions (*Fundecyt-CIIAE, UEX, CICYTEX*) are committed to the International, European, national and Horizon Europe principles and regulations related to the ethics in research and innovation (R&I) to guarantee a responsible R&I at their facilities. Therefore, in the framework of the Programme, **specific ethics control procedures** will be established to ensure the compliance with all applicable regulations concerning ethics during the selection process and the implementation of the fellowship programme.

6. CONTACT INFORMATION

The information regarding the Talen4Iberia Programme will be found on the official programme website www.talent4iberia.eu. It will also be available at the general electronic access point www.juntaex.es/ and on the official programme's recruitment platform: https://secti-idi.juntaex.es, available in Spanish and English.

Enquiries about ***Talent4Iberia*** and this Call should be made via the following e-mail address info@talent4iberia.eu, provided also on the programme website www.talent4iberia.eu.

ANNEX I – LIST OF ELIGIBLE SUPERVISORS

Talent4Iberia counts with a total of 33 supervisors, across all three Host Institutions, who will be directly responsible for the general welfare, career development and integration of the Research Fellow at the selected Host Institution belonging to SECTI (Science, Technology and Innovation System of Extremadura) and its environment. These Supervisors will work in accordance with the *European Charter* for *Researchers and the Code of Conduct* and have extensive international experience supervising PhDs and research groups, many are currently or have previously worked under MSCA and EU framework funding and are high-respected researchers, as demonstrated by their publications in high-impact journals and their high H-index.

These Supervisors, sorted by research topic, are:

Line 1: Electrical energy storage

Ph.D. Juan Manuel Pérez – Director of the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

He is in charge of managing projects and relationships with companies, merging the growth of the institution with the needs of the European energetic independency. He has lead projects for hydrometallurgical recovery of elements from alkaline and lithium batteries and the digitalization of New Circular Economy Business Models, therefore, has an extensive experience on supervising students, pre and post-doctoral researchers. In fact, during his stay at the National Research Council of Spain (CSIC) and Universidade de Aveiro (Portugal), he was managing the work of pre and post-doctoral researchers together with the foreign visitors to the institutions (Mexico, Brazil…). In this sense, he has been member of Thesis panels in Spain and for some Universities in South America. In addition, during his last stay, he has been supervising students of Polytechnic University of Madrid (UPM) in their field work before obtaining their degrees (BSc, BEng and Master).

Ph.D. Mariela G. Ortiz – Senior researcher in Li-ion Battery cells in the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

She holds degrees in Chemical Engineer and PhD in Engineering Materials at the National Technological University (La Plata, Buenos Aires, Argentina). She has made international stays in Córdoba (Spain, 2013), Turin (Italy, 2018) and Brno (Czech Republic, 2019-2020) researching on active materials for cathode and anode electrodes of Li-ion technologies, particularly in transition metal oxides, Li, carbon and additives. Therefore, she acquired a strong background on synthesis and characterization of inorganic materials, and in electrochemical techniques. She has been involved in many national projects in materials Li-ion and post ion-Li (S/Li) applications, preparing, testing and optimizing electrode materials and various electrolytes. She was Assistant Professor at National Technological University (Chemistry and Electrochemistry, Argentina). She is currently supervisor of three Ph.D. thesis project in Argentina. Her research activities are focused on design, synthesis and characterization of highly efficient cathode and anode

materials for Li-ion batteries. She is author of above 15 publications in international peer-reviewed journals and over 20 communications at international conferences on materials, Li-ion and Li-S systems.

Ph.D. Paula Sanz Camacho – Senior researcher in Na-ion batteries in the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

Her research focused in the synthesis and characterization on new materials based on non-toxic and abundant element for Na-ion batteries in order to improve their electrochemical performance. Ph.D. PSC is a Chemist from the university Complutense of Madrid (2005-2010) with a Master (2010-2012) Erasmus Mundus in Characterization techniques. In 2016 she completed her doctoral studies in St Andrews university (Scotland, UK), where she works in the synthesis of new heterocycles and solid-state NMR studies. Between 2017-2019, she did two-years Postdoc position in the institute of condensed Matter Chemistry of Bordeaux (ICMCB) working in Na-ion batteries, in a European Project NAIADES (horizon 2020) and a RS2E postdoc Network working on Prussian Blue Analogues (PBA) as positive electrodes for Na and K batteries.

PSC has great expertise in the area with more than 30 publications (h-index 17), in High impact journals such as *JACS, Chem. Mater, ACS Appl. Mater. Interfaces or Inorg. Chem* and has participated in more than 20 international conferences.

Ph.D. Amjid Rafique – Senior researcher in the synthesis of nanomaterials, energy storage devices, functionalization of textile substrate energy storage and harvesting, characterization, and applications in the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

His main areas of Research are nanomaterials, Energy storage devices, supercapacitors, functional textiles, and coatings, solar cells. He has worked as a postdoctoral fellow in the Material Science Department FCT School of Material Science and Technology. Earlier, he completed his Ph.D. from Politecnico di Torino Italy, in Material science and Technology and also worked as a research associate in the same university. His research is focused on functional nanomaterial, composite nanomaterial, and surface modification of nanomaterials of textile substrates for sensing and flexible energy storage devices. He works on various nanomaterials including Electrospun Fibers, Metal/Metal Oxides, Carbon Based Nanomaterials, Polymeric Materials (in-situ polymerization for functionalization of substrates), and composites (transition metal oxides and carbon materials). He has published 9 research papers in high-impact factor international journals. He has also received two research awards from Politecnico di Torino Italy.

He is a visiting researcher at MIT in the scope of the project MIT-Portugal on a project; "*Modernizing Photovoltaic textiles for Scalability and Wearable Applications*".

Ph.D. Francisco José Pérez Alonso – Senior researcher in Zn-air and Na-air batteries in the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

In September 2023, Ph.D. Perez-Alonso transitioned to the role of Senior Researcher at the Iberian Centre for Energy Storage Research (CIIAE). He is leading metal-air battery research, specifically focusing on the development of Zn-air and Na-air batteries and all related materials (anodes, electrolytes, and air electrodes).

He boasts an extensive career with over 22 years of experience in academia, industry, and high school teaching. His scientific output comprises 47 articles with over 4200 citations (h-index = 32). He also possesses extensive experience in R&D management and providing consulting services related to renewable energies and energy storage projects. His interests are centred around chemical technology, specifically on developing new materials for batteries and the production of green hydrogen for use in fuel cells. Francisco J. Pérez Alonso received his PhD degree in Chemistry at the Institute of Catalysis and Petroleochemistry of the National Spanish Research Council (ICP-CSIC) – Autonoma University of Madrid (Spain). His thesis work dealt with the study of the addition of cerium to iron catalysts for the Fischer-Tropsch synthesis (FTS).

In 2008, he gained a postdoctoral fellowship from the Spanish Ministry of Education to work at the Center of Individual Nanoparticle Functionality (CINF) at the Technical University of Denmark. His research activities aimed to develop advanced structured materials based on platinum for the oxygen reduction reaction (ORR), the most critical reaction within Polymer Electrolyte Membrane Fuel Cells (PEFMCs). In August 2011, Ph.D. Pérez-Alonso returned to the Laboratory of Electrocatalysis at the ICP, where he was the scientist responsible for opening a novel line of research for the development of Non-Precious Metal Catalysts for the ORR.

Since 2016, he worked for several start-ups (Albufera Energy Storage and Gnanomat) for the development of advanced materials for their application in energy storage devices (batteries, supercaps, electrolyzers and hydrogen fuel cells). In addition, he carried out consulting services related to energy storage technologies, green hydrogen and R&D management.

In summary, Ph.D. Pérez-Alonso has had a solid scientific career. During his stays in different research labs, he has become a scientist capable of leading research activities, including designing experiments, tutoring PhD students and applying for and supervising the advancement of research projects.

Ph.D. Cristina Flox – Senior researcher in flow batteries in the Electrical Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

Ph.D. Cristina Flox (CF) recently joined the CIIAE (Iberian Energy Storage Center) as a Senior Researcher in Flow batteries. Previously, she was at ICMAB-CSIC as a Marie Skłodowska-Curie researcher (March 2022) dealing with the research of alternative electrolytes for Redox Flow battery. Additionally, she held several positions at various national/international institutions (Aalto University, Catalonian Institute for Energy Research -IREC-, LEITAT), compiling over 15 years (3,6-years abroad with 1-year maternity leave) of experience in flow electrochemical reactors since obtaining her PhD (January 2008). Along her scientific career, CF has participated in more than 40 projects, among industrial, national and European Projects. This experience allowed her the creation of cutting-edge knowledge in the energy storage and conversion fields,

publishing more than 61 articles in peer-reviewed JCR articles, 1 international patent, 2 special issues and 2 book chapters. Overall, she has received more than 4,215 citations (>670 in 2023, 69 citations/article) and achieving an h-index of 33.

The dissemination of the results has been made through the participation as a regular speaker in national and international meetings (60 times, over 16 invited talk). As a proof of her leadership skills at global scale, she acted as main organizer in the Symposium J in EMRS 2022 spring meeting. Herein, she liaised and lead with the scientific and industrial experts in the field as chairwoman. At international level, she has stablished productive collaborations around the world (e.g. Prof. A.B. Sobrido; Prof. Y. Gogotsi, Prof. J. Gardeniers, and Prof. P. Leung). She was awarded by EDP OPEN INNOVATION call for business plan development (October 2016) and FUNDACIÓN RAMÓN ARECES for project "Free-metal redox flow batteries". She has supervised 2 PhD theses, both of them working in supercapacitors and RFB, and has tutored a Juan de la Cierva post-doc (FJCI-2014-22214), an electrochemical technician under the Spanish program (PEJ-2014-A-06729), two invited PhD students and more than 10 students. CF serves a project referee for National Science Centre (Poland), Agencial Estatal de Investigación (Spain) and Czech Science Foundation. Actually, she participated as a committee member in evaluation of the call (TED-2021). She has teaching experience (5 h) in the International Master Degree Energy Engineering within the program "Kic Innoenergy" and (3h) Nanoscience Master Degree from University of Barcelona, (Spain), (1h) Teaching in Kulosaaren School (Helsinki, Finland) Secondary School and (20h) teaching practical laboratory class in her Ph.D.

Ph.D. Enrique Romero-Cadaval – Professor at the Department of Electrical, Electronic and Control Engineering of the University of Extremadura (UEX), and **member of the Power Electrical & Electronic Systems R&D Group**. e-mail Scopus ORCID ResearchGate

His active research lines are integration of renewable energies, distributed generation, smart grids and electric vehicles. He is author of more than 200 contributions listed in the main databases. He is author of 9 book chapters included in two books published by SPRINGER and WILEY. He has delivered invited lectures in international conferences, tutorials in International Doctoral Schools. He has been member of 100 scientific committees, approximately 80 international and 20 national conferences. He is author of more than 75conference contributions. He is the project coordinator of the European Project SMARTGYsum "Smart and Green Energy Systems and Business Models" (an MSCA ETN with grant agreement no. 955614). He has been the main researcher of 5 national research projects, and more than 30 collaboration contracts with companies. He has supervised 6 international research stays for his Ph.D. students, in Tallinn University of Technology (Tallinn, Estonia), University of Aalborg (Aalborg, Denmark) or McMaster University (Ontario, Canada). Participation as international expert in A3ES (Agency for Assessment and Accreditation of Higher Education, Portugal) External Teams for evaluating Higher Education studies. He has participated as an expert in internationals professor recruitment processes.

Ph.D. Eva González Romera – Full Professor in the Electrical, Electronic and Automation Engineering Department at the University of Extremadura (UEX), and **member of the Power Electrical & Electronic Systems R&D Group**. e-mail Scopus ORCID ResearchGate

Currently, her work is focused on integration of electric vehicles on the grid, energy storage, energy management systems, etc. She has participated in more than 20 research international, national and regional projects, two of them as Main Researcher. She contributes to the coordination of the ETN-955614 (MSCA-ITN-2020) entitled "Research and Training Network for Smart and Green Energy Systems and Business Models" (SMARTGYsum). She has also participated in more than 40 collaboration contracts with companies and in national networks about power quality and distributed generation. She is co-author of more than 25 papers in journals included in JCR, 12 of them in quartiles Q1/Q2 and more than 60 conference communications presented in both national and international conferences. She has also co-authored 7 books and 8 book chapters with national and international publishers. She has participated in the organization of five national and international research conference and she has been member of more than 10 scientific committees. She has evaluated projects for ANEP (Spanish National Agency for Project Evaluation) and she is R+D project evaluator for EQA (European Quality Assurance), one of the main projects certification company. She also acts as a reviewer of several research journals and conferences, like IEEE Transactions on Power Systems, Applied Energy (Elsevier), Energies, IEEE Transactions on Automation Science and Engineering, and many more. She is co-founder of SENERGY P&S "Smart Energy Products and Services", Spin-off Company of the University of Extremadura. She has co-supervised three PhD thesis, all of them awarded by UEX within technical field and one of them with international mention. She is currently co-supervising a PhD student within the SMARTGYsum project.

Ph.D. María Isabel Milanés Montero – Full Professor in the Electrical, Electronic and Automation Engineering Department at the University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

She received the M.Sc. degree in Industrial Engineering from the University of Extremadura (UEX) in 1997, and the Ph.D. from the UEX in 2005. In November 1998 she joined the School of Industrial Engineering as an Assistant Professor. Since 2018 she is Full Professor in the Electrical, Electronic and Automation Engineering Department and is member of the Power Electrical & Electronic Systems R&D&i Group (http://peandes.unex.es). She has participated as Principal Investigator (PI) in 1 INTERNATIONAL PCI project AP/036934/11 "Spanish-Cuban cooperation on knowledge transfer in distributed generation with solar PV plants", funded by the Spanish Agency for International Development Cooperation (AECID). Currently, she collaborates in SMARTGYsum project. She has also participated in 10 National projects, being PI in two of them, and she collaborated in 14 REGIONAL projects, being PI in one of them. She has participated in 6 research projects funded by the UEX. She has cooperated in more than 40 research contracts with regional and national companies and has participated as technical expert in legal processes regarding possible patent infractions. She is author of more than 50 papers in indexed publications collected in the JCR or SCR and has more than 70 contributions in international and national conferences, 1 of them as keynote speaker. She has co-authored 1 book and 9 book chapters in international research books published by Springer and IET. She has participated in the organization of 17 conferences (9 international and 8 national). She is member of the Technical Committee AEN / CTN 206 / SC 114: Ocean Energy – Converters for waves and current energies – AENOR. At international level, she has participated in the COST Action MP1004 Hybrid Energy Storage Devices and Systems and COST Action TD1406 Intelligent Management of

Heritage Buildings. She was European Project Evaluator of the FP7 Programme of the European Commission. She is regular reviewer of several prestigious international journals collected in the JCR and international IEEE conferences. She has supervised 3 Doctoral Thesis and 1 Thesis and has directed more than 40 Degree and Master Final Projects. She is co-founder of "Smart Energy Products and Services", Spin-off company of the UEX.

Line 2: Hydrogen and power-to-X

Ph.D. David Parra Mendoza – Director of the Hydrogen and Power-to-X Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

His research focuses on the integration of renewable energy with energy storage and hydrogen at various levels, e.g., technologies,energy systems and policies. His work is interdisciplinary incorporating technical, economic, environmental, and social dimensions, with the latter now being expanded. In recent years, David Parra has led and coordinated severalnational and international projects for over 1.5 million euros, addressing the topic of energy storage and hydrogen. In this role, he has supervised one post-doc, 7 Ph.D. students and 12 master students**.** He has published 47 scientificpapers in high-impact peer-reviewed journals (with 15 papers as first author and 14 papers as last author), such as Nature Energy, Renewable and Sustainable Energy Reviews, and Environmental Science & Technology. He has also given multiple presentations at international conferences and congresses, many of them as keynote speaker.

Ph.D. Juan Víctor Perales-Rondón – Senior researcher in electrocatalysis for synthetic fuels and chemicals in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

His research experience ranges from fundamental electrocatalysis, spectroelectrochemistry studies for electrocatalysis as well as the use of couple technique for energy and analytical applications. Recently, he has directed his research towards the development of electrodes for CO2 reduction reaction (CO2RR), nitrogen reduction reaction (NRR) and nitrate reduction to ammonia (NRA), with emphasis in the study of the reaction at a fundamental level to understand the origin of the catalyst activity using in-situ and operando techniques. After his PhD, he spent some years as a senior researcher at the University of Burgos (Spain), the University of Alcala (Spain) and at Brno University of Technology (Czech Republic). Throughout these years he has received a "Juan de la Cierva" grant, a "Maria Zambrano" fellowship as well as a MSCA individual fellowship before joining CIIAE. He has co-supervised several Master's students and is now co-supervising 2 PhD students in the field of spectroelectrochemistry applied to electrocatalytic systems. He is also author of 34 publications in high impact journals (7 as corresponding author), such as Journal of The American Chemial Society, Applied Catalysis B: Environmental, ACS catalysis, Journal of Material Chemistry A, Nature Review Methods Primers, among other. He has also given several presentations at international conferences and congresses and one of them as a keynote speaker.

Ph.D. Liliana Analia Díaz – Senior researcher in low-temperature electrolysis and fuel cells group in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

She holds a Chemical Engineer degree obtained at the National University of Salta – Argentina and PhD in Science and Technology, Chemistry orientation with an academic degree obtained at the National University of San Martín (UNSAM) in Buenos Aires – Argentina. She has made international stays in Mexico (2008), Czech Republic (2013-2014), Spain (2016) researching on hydrogen technologies: direct methanol fuel cells, hydrogen fuel cells and electrolysis. She has extensive research experience working with ion exchange membranes (anionic and cationic) and electrocatalysis for water electrolysis systems and fuel cells. In 2022 she operates a 16 kW PEM electrolyzer at pilot plant scale. At Europe level she led 3 private industrial R&D projects, 2 international collaborative projects, 4 Spanish industry assessment works. She has participated with other authors in 12 papers, 1 granted patent (INPI-ARG: 180.100-013 / 2018 "Preparation method of polymeric proton exchange membrane"), and over 20 communications at international conferences. She is currently co-supervisor of a PhD thesis project in collaboration with a professor in Argentina and co-supervised a TFM at UVigo recently.

Ph.D. Rodrigo García-Muelas – **Senior researcher in atomistic simulations** in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

He studied Chemical Engineering at the University of Carabobo (UC, 2008) and holds an M.Sc. in Environmental Engineering and Sustainable Design from the Rovira and Virgili University (URV, 2012) and a Ph.D. in Chemical Science and Technology from the Institute of Chemical Research of Catalonia (ICIQ, 2017). The latter under the supervision of Prof. Nuria Lopez. Since then, he has worked as a Postdoctoral Researcher, Group Scientific Coordinator, and Staff Scientist at ICIQ and Utrecht University (UU). He has worked with Tier-0 high-performance computers, such as BSC-Mare Nostrum 3 and 4, since 2013. Ph.D. García-Muelas has authored or co-authored more than 30 peer-reviewed articles, most of them in close collaboration with experimentalists. These publications have drawn more than 2000 citations. His research has focused on heterogeneous thermal and electrocatalysis, particularly on complex reaction networks, solvation at interfaces, and reconstructing materials. He currently supervises 2 PhD candidates and provides guidance to a postdoctoral researcher.

Ph.D. Rayees Ahmad Rather – **Senior researcher in photocatalysis and photoelectrocatalysis for synthetic fuels and chemicals** in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

He holds a Ph.D. in Chemistry from Thapar University (now Thapar Institute of Engineering and Technology), India. Ph.D. Rather possesses rich and far-reaching research expertise in the design, development, synthesis, and characterization of a wide range of advanced photoactive nanomaterials for application in photocatalysis. His research endeavours have been further enriched by extensive postdoctoral experiences at esteemed institutions across the globe, including working in the multidisciplinary research group at The Hong Kong University of Science

and Technology, Hong Kong, and Shenzhen University, China. In addition, his work experience at Auburn University, United States, and San Diego State University, United States, has further enriched his skills and mechanistic understanding of the processes involved in photocatalysis. Ph.D. Rather has been involved in several cutting-edge projects on renewable hydrogen production, CO_2 photoreduction, H_2O_2 production, and solid-state or adsorptive photodegradation of recalcitrant PFAS, complemented by his rich contribution via publications in reputed journals and dissemination of research results in international conferences. Ph.D. Rather is poised to continue his impactful research in multidisciplinary areas of Chemistry, Materials, Chemical Engineering, and Environmental Engineering for sustainable hydrogen energy and environmental solutions.

Ph.D. Juan María González Carballo – Senior researcher in the area of heterogeneous catalysis for chemicals and synthetic fuels in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

His research focuses on the rational design and sustainable synthesis of multifunctional nanomaterials for the production of fuels and chemicals. Applications are directed towards the single-step conversion of carbon dioxide into synthetic fuels and chemicals such as sustainable aviation fuel and methanol, and the improvement of current industrial chemical processes such as ammonia synthesis. He was trained as a Chemical Engineer (University of Extremadura, Spain) and did the PhD in Chemistry at the Institute of Catalysis and Petrochemistry of the National Spanish Research Council (ICP-CSIC) – Autonomous University of Madrid (Spain) between 2008-2012. He has developed his postdoctoral career within the industry, working as scientist at Sasol UK (2012-2017), and as process scientist at Drochaid Research Services Ltd (UK contract R&D, 2018-2022), where he was involved in multiple projects aimed at supporting different companies to develop new catalytic processes and supervised industrial collaborations with the academia.

He has participated in multiple research projects (national, international and private contract with industry), published more than 20 scientific papers and shared scientific results in international conferences. He is member of the Spanish Society of Catalysis (Secat) and the Royal Society of Chemistry (RSC), having been awarded the Chartered Chemist (RSC) distinction since 2018.

Ph.D. Jose Antonio Villajos – Senior researcher in Hydrogen storage in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

He is leading the hydrogen storage and transport group within the Hydrogen and Power-to-X department. At CIIAE, the aim is to study advances materials used in alternative methods to store hydrogen different to traditional procedures including materials for solid-state storage (metal hydrides and porous solids) and liquid storage (synthesis and dehydrogenation of methanol, ammonia, and organic liquid carriers LOHCs). During his Ph.D. and postdoc, he has participated in six research projects, published 16 scientific papers in different scientific journals, and shared scientific results in 17 international conferences in the fields of materials science,

energy and technology and chemical engineering. Ph.D. Villajos has also supervised three post-graduate students for their end-of-degree projects, three ERASMUS students and is supervising a Ph.D.

Ph.D. Cristina Gutiérrez Muñoz – Senior researcher in CO_2 capture and utilisation in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

She has experience in the adsorption of CO_2, mainly in polymeric matrices and the load and modification of polymers to achieve higher capacities and functionalities. The research line at CIIAE initially focused on developing solid porous materials based on better kinetics, less susceptibility to losing volatiles into the atmosphere, and lower heating requirements from evaporating the liquid. Her scientific career has also been linked to the industrial sector, in which she achieved and managed funding from different competitive programs, with a total budget of about 2 M€, and obtained 2 patents. She is the author of 21 scientific publications and 2 book chapters and has participated in more than 40 national and international conferences. She has supervised 1 PhD student and 5 master's students.

Ph.D. Blanca Isabel Arias Serrano – Senior researcher in high temperature electrolysers and fuel cells in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

Her main research activities have been dedicated to the development and characterization of ceramic materials for energy conversion and storage (SOEC, SOFC, co-SOEC, r-SOC and PCCEL), thermoelectric applications, membrane-based technologies and all-solid-state batteries (ASSB). She holds degrees in Mechanical Engineering and Industrial Engineering (speciality in Materials Science) and a Ph.D. in Materials Science and Engineering at the University Carlos III of Madrid (ES). She was formerly a visiting researcher at the University of Sheffield (UK), a postdoctoral researcher at the University of Aveiro (PT), a scientific researcher and EU project leader at the Leibniz Institute for Plasma Science and Technology (DE), and a Marie Curie Fellow within the Energy for Future Programme (E4F) co-funded by Iberdrola. She has co-authored 24 research papers in SCI journals and other peer-reviewed journals, over 30 communications at international conferences (some of them as invited or keynote speaker), and participates in more than 10 R&D projects. She has co-supervised multiple semester projects and thesis for undergraduate students, 2 concluded MSc, and 2 Ph.D. (1 ongoing). She has also participated in 3 MSc and 1 Ph.D. theses juries and contributed to educational processes as an academic staff (including more than 600 hours in materials and engineering disciplines).

Ph.D. Romain Mauger – Senior researcher in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE), **leading a team of legal researchers investigating the legal challenges to energy storage in order to achieve decarbonization.** e-mail Scopus ORCID ResearchGate

His research encompasses the regulation of fast-evolving energy technologies (e.g., batteries, microgrids, electric vehicles charging points) and their end-uses in order to propose improvements, entailing a strong appetite for interdisciplinary research. To ensure that the

specific, technology-based research fits within the bigger picture, Ph.D. Mauger's research also integrates the notions of energy justice, just transition and degrowth. In his career, Ph.D. Mauger supervised over 30 LLM students' theses, 3 research assistants and provided guidance to a postdoctoral researcher. He will soon start supervising 2 PhD candidates. He published over 30 academic works, encompassing articles in internationally recognized journals, chapters in books edited by well-known publishers in the field, and reports written as part of different projects and destined to institutions such as the European Commission. Ph.D. Mauger holds a PhD in Law from the University of Montpellier (FR) and 5 years of postdoctoral experience at the University of Groningen (NL). He fluently speaks French, English and Spanish.

Ph.D. Santiago Laín – CFD Senior researcher on **computationally simulating industrial and environmental processes, with a particular emphasis on multiphase flows and renewable energies, lately including hydrogen technologies** in the Hydrogen and Power-to-X Department at the Iberian Centre for Research in Energy Storage (CIIAE). e-mail Scopus ORCID ResearchGate

Ph.D. Laín has led the research group "Modelling, Analysis, and Simulation of Environmental and Industrial Processes, PAI+," which has a reference group in the Colombian research system.

His work has been featured in leading journals within the fields of Multiphase Flows and Renewable Energies, where he has also contributed as a reviewer. He has around 70 articles published in JCR-indexed journals, many of which reside in the Q1-Q2 quartiles. Additionally, he has co-supervised 4 completed doctoral theses and 15 master's theses. Several of his master's students have furthered their studies to earn doctoral degrees at various universities in Europe and the USA. Ph.D. Laín has established a robust research network involving research groups in Colombia, Germany, Spain, and Canada. Among different recognitions, he was awarded the 2021 CVET Most Cited Article Award for the most referenced article in Cardiovascular Engineering Technologies, a distinction jointly conferred by the US Biomedical Engineering Society and Springer Nature.

Line 3: Thermal energy storage

Ph.D. Breogán Pato Doldán – Director of the Thermal Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ResearchGate

His scientific career has been focused on the development of materials with functional properties (dielectric, magnetic, thermoelectric materials) and on finding the relationship between the crystalline structure of said materials and theirproperties. He has more than 10 years of experience in materials science and development. He holds a PhD in Inorganic Chemistry (University of A Coruña) and has previously worked for the University College London (joint project with Etex Group), the University of Bergen and EnSol AS (Norwegian SME) among others. He has been involved and managed several research projects in regional, national and international programs. He has more than 500 hours of synchrotron experience, being the IP in two granted proposals. He has coordinated two research projectsfunded by the Research Council of Norway.

Ph.D. Ricardo Silva – Senior researcher in Thermal Energy Storage Integration at the Thermal Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ResearchGate

Ricardo holds a B.Sc. in Mechanical engineering and a M.Sc. in Thermodynamics, both from the Universidade de Lisboa, and a Ph.D. in Applied Physics from the Universidad de Almería/CIEMAT. Ricardo's previous experience includes applied research work at Itecons/Universidade de Coimbra and at Empa/ETH Zürich in Switzerland, and he is interested in the following fields: Energy Storage, Power2Heat, Thermochemical Energy Storage, Heating and Cooling Pumps, Phase Change Materials, Molten Salts, Sorption, Multiphysics, Multiphase Flow, Computational Fluid Dynamics, Design Optimization. He has +15 years of experience in Applied Research in centers across Europe, and 16 publications, 8 projects, and granted 1 patent in the topics of Energy.

Ph.D. Aleksandr Shkatulov – Senior researcher in Thermochemical Energy Storage in the Thermal Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

His scientific interest lies in the field of storing and transforming thermal energy by means of chemical reactions. He has more than 10 years of experience in material science, focusing on research ranging from atomic to millimeter-sized particle levels. He holds a Ph.D. from Institute of Catalysis SB RAS (Novosibirsk, Russia) and previously worked at Eindhoven University of Technology, German Aerospace Center, and Tokyo Institute of Technology. He is a Marie Curie fellow and took part in several projects dedicated to material design for thermochemical energy storage – a relatively new field focused on development of thermochemical batteries which can efficiently store and release thermal energy.

A potential project hosted by Ph.D. Shkatulov may be dedicated to development of new generation of thermochemical materials that meet the criteria of low- or medium-temperature applications and investigating their properties by a series of state-of-the-art techniques of thermal and structural analysis.

Ph.D. Lilian Claudia Gómez Aguirre, Senior researcher in solid-to-solid Phase Change Materials (PCMs) at the Thermal Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

Claudia holds a degree in Chemical Technology by the Technological University of Pereira (Colombia), a B.Sc. in chemistry, a master in fundamental & environmental chemistry, and a Ph.D. in inorganic chemistry, by the University of A Coruña (Spain).

Claudia has more than 14 years of experience in research centers and industry. Her research career has been focused in the search for solid crystalline materials with functional properties for the storage of electric & magnetic charges, or heat. She performed a 6-month research stay in Los Alamos National Laboratory (USA), led a research project in a SME in Norway (EnSol AS), worked in the Quality Control department of a biopharmaceutical company (mAbXience) and received a postdoctoral MSCA fellowship.

At CIIAE, she is focused in the study of crystalline materials showing solid-to-solid phase change transitions with high enthalpy values for thermal energy storage and thermal management applications.

Ph.D. Rubén Ramos Velarde – Senior researcher in Thermochemical Storage Systems in the Thermal Energy Storage Department at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ResearchGate

He holds a university degree in Industrial Engineering with speciality in Energy Technologies (Carlos III University of Madrid) and a Ph.D. in the area of Chemical and Energy Technologies (University Rey Juan Carlos of Madrid). His multidisciplinary professional career includes experiences as an engineer and researcher in industries (Tetra Pak, Inventa and Gamesa), and in R&D Centers: ORLEN-UniCre (CZ), University of Liverpool (UK), University of Porto (PT) and CIRCE -Technology Center (ES). He has taken specific advanced training courses in: Hydrogen Economics, Use of Agricultural Waste and Green Chemistry. His main scientific fields of interest include: Renewable Energies, Thermochemical Conversion of Biomass, Heterogeneous Catalysis and Thermochemical Materials for Thermal Energy Storage systems. He has broad experience participating in the preparation and management of R&D projects under H2020, EPSRC, FCT, and Horizon Europe programs.

Ph.D. Javier Díez Sierra - Senior researcher in Nanofluids in the Department of Thermal Energy Storage at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ResearchGate

Ph.D. Díez Sierra holds a Bachelor's degree in Physics from Universidad de Murcia (ES), a dual European Master's degree in Material Science from Universidad Politécnica de Cataluña (ES) and Universität des Saarlandes (DE) and a Marie-curie PhD in Physics from Universiteit Gent (BE). His scientific journey has included research positions at various institutions such as the Leibniz Institut für Neue Materialien (DE), BASF SE (DE), Deutsche Nanoschicht (DE), the GmbH (DE), University of Turku (FI) and Tekniker (ES). His multidisciplinary scientific career covers areas such as thin films, nanoparticle synthesis, superconductors, PEM electrolyzers and supercapacitors. His main current scientific fields of interest include Nanofluids, Nanoparticle Synthesis, Phase-Change Materials and Thermal Energy Storage.

Ph.D. Yanio Enrique Milián Rodríguez – Senior Researcher in Phase Change Materials (PCMs) in the Department of Thermal Energy Storage at the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

Ph.D. Yanio Enrique Milián Rodríguez He has previously worked in a Postdoctoral Fellowship at the prestigious Universidad Católica del Norte in Chile on emergent technologies for lithium-ion battery recycling. He has extensive experience in sol-gel synthesis, inorganic phase-change materials, shape-stabilized phase change materials (SS-PCMs), silica-based Janus nanoparticles, and material characterization techniques. He is a highly distinguished alumnus who has completed his studies at two reputable, world-class universities: the Universidad de Antofagasta in Chile and the Higher Institute of Technologies and Applied Sciences at the Universidad de La Habana in Cuba. He holds a Doctorate in Mineral Processing Engineering from the former and a Bachelor's Degree in Radiochemistry from the latter.

Ph.D. Mauro Henríquez Heimpeller – Senior Researcher in Thermal Energy Storage at the Thermal Energy Storage Department of the Iberian Energy Storage Research Center (CIIAE). e-mail Scopus ORCID ResearchGate

Mauro is a Civil Metallurgical Engineer. He completed his Master's Degree in Energy, and the Doctorate in Solar Energy at the University of Antofagasta, Chile. He is an Expert in Thermal Storage with Molten Salts and Energy Efficiency. His research interests are molten salt thermal storage and industrial energy efficiency. His research interests focus on sensible heat storage for concentrated solar power (CSP) plants, Carnot batteries and energy for heating. These include the Characterization of thermophysical properties of materials for thermal storage; Failure analysis for storage tanks with high temperature molten salts; Power to Heat (PtH) project from excess renewable energy; Applied research in pilot plants of thermal storage system with molten salts. He has more than 20 years of experience between industrial processes and applied research. He has directed 2 projects, more than 10 publications, applied for 2 patents, and has been a tutor for more than 10 undergraduate and graduate students.

Ph.D. Juan Félix González - Professor of the Applied Physics Department and coordinator of the GAIRBER Research Group (Group for the Integral Use of Biomass Waste and Renewable Energies) of the University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

He has worked in the field of thermochemical conversion processes of biomass (pyrolysis, gasification, combustion, drying) for energy purposes, as well as the preparation of activated carbons by physical activation and their regeneration. Moreover, he has experience on the characterization of precursors and the phases generated in these processes (char, tars and gas) as well as on the study of their applications. During the last years he has worked on HTC processes focusing on the use of the hydrocar as an energy fuel. He has also worked on the preparation and characterization of biofuels, biodiesel, bioethanol and biogas generation from materials with high organic material content. The developed research has been framed in different projects and research contracts with private companies. He has been a principal investigator in 13 international, national and regional founded projects and has directed research for more than 40 private companies.

Ph.D. Silvia Román Suero – Professor and researcher in the GAIRBER Research Group (Group for the Integral Use of Biomass Waste and Renewable Energies) at the University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

She obtained a Degree in Applied Chemistry (University of Central Lancashire, United Kingdom, 2001) and a Bachelor's Degree in Chemical Engineering (2003), as well as a Ph.D. (2009) from the University of Extremadura (UEX). She has worked on research projects related to biomass utilisation in Germany, Portugal, the United States, Argentina, England and the United Kingdom. She has managed several research projects in regional, national and international programs. she is fully committed with the promotion of women research career participating in many scientific culture initiatives in this sense. Silvia's experience as an evaluator has been confined especially to the evaluation of research projects in the State Research Agency and in the Higher Council for Scientific Research in Argentina and Uruguay. She has also been a member of national and

international Doctoral Thesis committees (Portugal and Italy) on 11 occasions. She has been part of evaluation committees for Researcher positions at UEX on a regular basis in the last 5 years (an average of 3-5 per year).

Ph.D. Justo García Sanz-Calcedo – Professor in the Engineering Projects Area of the University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

He has more than 150 scientific publications, has supervised 8 Doctoral Theses, supervised several scholarships and pre- and postdoctoral contracts and has participated in several research projects in the field. international. He has been responsible for more than 60 projects in collaboration with technology companies and his lines of research focus on Energy Efficiency in Buildings, Hospital Engineering, Renewable Energies and Project Management. He has a Ph.D. in Industrial Engineering, a Master's Degree in Renewable Energy, an MBA from the Autonomous University of Madrid and a Diploma in the Higher Management Program at the IESE (University of Pamplona) and, in addition, he has won the Excellence in Transfer of Research Results Award. He has experience in both the private and public sectors, having held highly responsible technical positions in the engineering field. He is currently a member of the National Technical Committee of the Spanish Technical Association for Air Conditioning and Refrigeration (ATECYR) and the Spanish Association of Project Management and Engineering (AEIPRO). His lines of work correspond to those related to the three research projects that he is currently developing as Principal Investigator, related to the accumulation of energy in its various facets. These are the RESEARCH AND DEVELOPMENT OF HOT-COLD THERMAL STORAGE SYSTEMS FOR RESIDENTIAL USE (TERMALIT) projects, the ADVANCING INNOVATIONS IN MOLTEN SALT (ADVIAMOS) project and the CROSS-BORDER ENERGY COMMUNITY IN EUROACE (TRANSCOM) project.

Ph.D. Pedro Miranda – Professor at Department of Mechanical, Energy and Materials Engineering at University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

He is member of the Institute of Green Economy IUEVE. Marie Curie OIF Postdoctoral Fellow at Lawrence Berkeley National Laboratory (2005-2006) and visiting scholar at the University of California San Diego (2016-2017). Prof. Miranda is author of +70 articles (+3000 citations, +40 citations/paper, h-index 32; source: Scopus) and more than 90 contributions to national and international scientific meetings. He has participated in 17 research projects (11 as principal investigator, PI), including 3 EU-funded international projects. He has supervised 7 Ph.D. Theses, 13 Master Theses and 36 B.Sc. Final Projects, as well as the work of 3 postdocs. Expert in additive manufacturing (3D printing) of ceramics and ceramic-based composites, mechanical characterization and numerical simulation by FEM.

Relevant research topic: Development of materials and solutions for thermal energy storage (solar receivers and phase change materials). Currently leading 1 EU project on this topic, with 2 more submitted EU proposals under evaluation.

Ph.D. María Teresa Miranda García-Cuevas – Professor at Department of Mechanical, Energy and Materials Engineering at University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

Ph.D. Miranda García-Cueva's main research line has been focused on the identification of alternative uses for agricultural biomass, which presents the greatest problems for its revalorization. With over more than 50 publications published, including 34 articles indexed in JCR (20 of them in Q1), 5 with SJR index, a total of 990 citations in Scopus (H 17) and an average of more than 110 citations per year in the last 5 years, Ph.D. Miranda García-Cueva has participated in 38 Research Grants and Projects, 7 of which were funded by the European Union, and has been appointed as principal investigator in 17 of them.

Since 2014, Ph.D. Miranda García-Cueva is the principal investigator of the Energy Research Group in the Area of Thermal Machines and Motors of the UEx (ENERMYT), even thou she has been a member since its creation in 2006. The group currently has 11 members, 7 PhD researchers and 4 researchers in training.

Finally, Ph.D. Miranda García-Cuevas has supervised a total of 12 Doctoral Thesis since 2011, with 6 more being currently supervised.

Ph.D. José Ignacio Arranz Barriga – Professor at Department of Mechanical, Energy and Materials Engineering at University of Extremadura (UEX). e-mail Scopus ORCID ResearchGate

With a Ph.D. in Industrial Engineering from University of Extremadura, Ph.D. José Ignacio Arranz Barriga focuses his activity on the field of renewable energies, specifically in research on densified solid biofuels. In addition, he actively participates in research projects involving all renewable energies. He complements his research activity with teaching at the School of Industrial Engineering of Badajoz and the Polytechnic Institute of Beja (Portugal) giving sessions in many areas, such as biomass energy, energy efficiency, solar thermal and thermoelectric, mini-hydraulics or health and safety at work.

Apart from his teaching experience, he holds publication of numerous scientific and technical publications, including 28 papers indexed in JCR, of which 18 are in the first quartile of the JCR, with a total of 745 citations and an index h=14 (Scopus), and has participated in 25 research projects and grants for research groups, as well as 24 contracts related to renewable energies and energy efficiency. Applied research has been developed with a high degree of transfer to the productive sector, as evidenced by the technological development projects carried out and the research and transfer contracts for companies and organizations. He collaborates permanently with companies and institutions in the renewable energy sector (ENCE, SAMCA, AGENEX, Mercado Biomasa, etc.) and the agro-industrial sector (CONESA, Ballut Cervecera Artesana SL, Troil Vegas Altas SC, etc.).

Attendance and participation in national and international scientific-technical congresses of relevance in the aforementioned areas of activity, with a total of 72 contributions. He has directed 42 final year projects and is currently the director of 3 doctoral thesis students.

Ph.D. Jerónimo González Cortés – Scientific Director of Finca La Orden-Valdesequera Agricultural Research Institute of the Centre for Scientific and Technological Research of Extremadura (CICYTEX). e-mail Scopus ResearchGate

He has co-directed 3 Doctoral Theses for researchers from the Finca La Orden-Valdesequera Agricultural Research Institute of CICYTEX. He is leading the research team on biomass and bioproducts of the Institute of Agricultural Research Finca La Orden-Valdesequera, working with solid, liquid and gaseous biofuels, biofertilizers, and bioproducts from vegetable fibers, from biomass-producing crops, and agricultural residues, ranchers, forestry and agro-industrial. He is also part of the GAIRBER Research Group (Group for the Integral Use of Biomass Waste and Renewable Energies) at UEX.

Optional: Pilot plants department at CIIAE

Mr. Francisco Javier Gallego Hernández – Director of the Pilot Plants at the Iberian Energy Storage Research Center (CIIAE). e-mail

He is an Industrial Engineer with more than 30 years of experience in the Energy sector. He has been Technical Director of a DSO for more than two decades, designing, building and commissioning more than one hundred infrastructure projects (primary and distribution substations, high and low voltage overhead and underground lines). He has over thirty years of experience leading and supervising multidisciplinary technical teams in the industry, having mentored dozens of new professionals, mainly engineers, on board. In addition, he has been president of the Association of Industrial Entrepreneurs of the City of Ceuta (CECe) from 2002 to 2019.

ANNEX II – LIST OF ASSOCIATED PARTNERS

Apart from the work done in the three Implementing Organizations, the Candidate has the opportunity to do as many Secondments with the Associated Partners as they want, albeit the total amount of Secondments cannot exceed a total of 12 months in duration. The list of Associated Partners participating in the Talent4Iberia project are as follows:

Aalto University (AALTO)

Website: https://www.aalto.fi/en/department-of-mechanical-engineering/energy-conversion-and-systems

Short description:

Aalto University, Research group of Energy Conversion and Systems is a multidisciplinary energy group with high variety of different topics. The team is focused on different type of energy storage applications. At thermal energy storage topics, we work with TES systems, as well as in thermal energy storage materials both at PCMs and thermochemical materials.

Antofagasta University (CDEA)

Website: https://www.uantof.cl/centros/centro-de-desarrollo-energetico-cdea/

Short description:

The CDEA was born in 2010 at the University of Antofagasta, focusing its work on promoting innovation, development and applied research on issues related to the energy needs of our area. Currently, the CDEA has become a regional and national benchmark in issues related to solar energy, with a Master's program in Energy Development since 2010, in addition to launching a Doctorate in I Semester of 2016. Solar energy.

Chalmers University of Technology (CHALMERS)

Website: https://www.chalmers.se/en/departments/chem/research/energy-and-materials/industrial-materials-recycling/

Short description:

The research group Industrial Materials Recycling at Chalmers University of Technology has extensive knowledge of separation processes, especially applications of hydrometallurgical methods such as leaching and solvent extraction in the waste and ore processing. Our facilities are equipped with wide range of equipment, as well as pilot scale separation units, e.g. special leaching reactors and mixer-settler contactors.

Agencia Estatal de CSIC (ITQ)

Website: https://itq.upv-csic.es/en

Short description:

The Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC) is Spain's largest public research institution and one of the most renowned institutions in the European Research Area (ERA). It is affiliated with the Ministry of Science and Innovation. CSIC participates via Instituto de Tecnología Química (CSIC-ITQ), an international reference centre in the areas of catalysis, new materials, electrochemistry, green chemistry, photochemistry, gas separation and energy conversion. The group participates in several European and national projects with other worldwide recognised research institutions and some of the most important companies related to petrochemistry, refining, green chemistry and fuel cells/electrolysis.

Swiss Federal Laboratories for Materials Science and Technology (EMPA)

Website: https://www.empa.ch/web/s313

Short description:

The Urban Energy Systems Laboratory at Empa focusses on the development of methods, strategies and solutions to transform buildings, neighborhoods and cities into energy efficient and decarbonized systems. Its core competences lie in the modelling, design and assessment of building and urban systems with focus on energy hubs, multi-energy grids, and integration of renewable energy and storage systems.

Fraunhofer Institute for Solar Energy Systems (ISE)

Website: https://www.ise.fraunhofer.de

Short description:

Fraunhofer Institute for Solar Energy Systems (ISE), with a staff of about 1400, is the largest solar research institute in Europe. The Fraunhofer Institute for Solar Energy Systems is committed to promoting a sustainable, economic, secure and socially just energy supply system based on renewable energy sources.

Khalifa University (KHALIFA)

Website: https://www.ku.ac.ae/rich

Short description:

Khalifa University of Science and Technology is a public research university located in Abu Dhabi, United Arab Emirates. Founded in 2017, as the merge of Masdar Institute, Petroleum Institute and Khalifa University of Science, Technology and Research, it was ranked as the 181st best

university in the world by QS world university rankings of 2023. One of the flagship research centers of KU is the Research and Innovation Center on CO2 and Hydrogen (RICH), focused on decarbonizing the society, by capturing and utilizing CO2 as well as covering the whole value chain of hydrogen, with an impressive record of publications, patents and joint industry-academia collaborative projects.

Norwegian University of Science and Technology (NTNU)

Website: https://www.ntnu.edu/ima/research/facet

Short description:

NTNU is the largest University in Norway today with a history dating back to 1910 and a vision to create knowledge for a better world. The Functional Materials and Materials Chemistry Research group is part of the Department of Materials Science and Engineering in the Faculty of Natural Sciences. Our mission is to device and provide advanced functional materials for a sustainable future. FACET's research activities range from innovative applications in industry to fundamental science. We study emergent functional materials properties and how we can improve and control them.

Politecnico di Milano (POLIMI)

Website: https://www.deib.polimi.it/eng/deib-labs/details/78

Short description:

The **Dipartimento di Elettronica, Informazione e Bioingengeria (DEIB)** is one of the largest European ICT departments. With nearly 1000 members, researchers, collaborators, PhD students, technical and administrative staff, the Department is a vital institution capable of promoting education, fundamental and applied research, and technology transfer to companies. **Research is the main focus of DEIB**, pursued according to the highest international quality standards. The six department sections bring together consolidated competences in systems and control, computer science and engineering, electronics, telecommunications, bioengineering and electrical engineering. Today, DEIB is a leading contributor in terms of delivered **patents, spin-offs, and incubated companies**.

Politecnico di Torino (POLITO)

Website: https://www.diati.polito.it/en/research/areas/environmental_sanitary_engineering

Short description:

The **Department of ENVIRONMENT, LAND AND INFRASTRUCTURE ENGINEERING (DIATI)** is the reference structure of Politecnico di Torino in the cultural areas dealing with the protection and management of the environment and land, mitigation and adaptation to climate change, sustainable use of natural resources and subsoil, as well as the design, development,

management and operation of industrial technologies, civil infrastructures and eco-compatible transport systems. DIATI promotes, coordinates and manages teaching activities, basic and applied research, technological transfer and services to the local community in the above-mentioned areas.

Tallinn University of Technology (TAL-TECH)

Website: https://taltech.ee/en/power-electronics-research-group

Short description:

Tallinn University of Technology (TalTech), the only technological university in Estonia, is the flagship of Estonian engineering and technology education. TalTech is to become one of the leading technological universities in the Baltic Sea region. The Power Electronics Group of TalTech focuses its research efforts on the development and experimental validation of new state of the art power electronic converters for such demanding applications as renewable energy systems, rolling stock, automotive and telecom.

Universidade de Aveiro (UAVEIRO)

Website: https://www.cesam-la.pt/en/

Short description:

Created in 1973, the University of Aveiro (UAveiro) quickly became one of the most dynamic and innovative universities in Portugal. Now a public foundation under private law, it continues to develop and implement its mission to provide undergraduate and postgraduate education, to generate research and promote cooperation with society. CESAM is a Research Unit of UAveiro, and its main objective is to promote a more efficient use of terrestrial and aquatic environmental resources and a more competitive, resilient and sustainable economy.

University of Ljubljana (UL)

Website: https://lpee.fe.uni-lj.si/en/

Short description:

A laboratory with highly enthusiastic researchers, interested in all aspects of power-system dynamics and stability.

University of Salerno (UNISA)

Website: https://web.unisa.it/en/university

Short description:

The Laboratory of Power Electronics and Renewable Energies at UNISA has facilities for the implementation and test of control algorithms for power electronics, which are implemented by embedded systems. Fully instrumented test stations are also available for testing low power PV systems and Li-Ion battery storage systems. Several types of PV modules installed in the university campus offer effective test bench for the experimental validation of models and algorithms developed during the research activities.

University of South Wales (UNSW)

Website: https://unsw.edu.au

Short description:

UNSW Sydney is one of the world's leading research and teaching-intensive universities, known for innovative, pioneering research and high-quality education with a global impact. It has 47 schools, 53 centres and institutes, and is spread across 4 main campuses with the main campus being located at Kensington NSW.

UNSW is a member of the prestigious Group of Eight (Go8), a coalition of Australia's leading research-intensive universities. The global ranking of UNSW is 45th in the 2022 QS World University Rankings and was awarded the maximum QS Five Star Plus rating in 2019 for teaching, research, employability, facilities, internationalisation, inclusiveness, specialist subject and innovation.

University of Turku (UTU)

Website: https://www.utu.fi/en/university/faculty-of-technology/mechanical-and-materials-engineering/research/battery-materials-and-technologies

Short description:

Research group of Battery Materials and Technologies at University of Turku is one of the largest groups in Europe focusing on materials discovery and electrochemistry of flow batteries. This group consisting of 15 people is headed by associate Prof. Pekka Peljo. He is a coordinator of three H2020/HE projects and a recipient of ERC StG grant, and he has gathered > 5 M€ external funding since 2018. We are focusing on discovering new materials for flow batteries and developing measurement tools to test solid boosters. We have specialised equipment for flow battery research, including flow battery test cells and associated accessories (that enables measurement of e.g. half-cell potential, ORP pH, etc.) and oxygen free chambers that enables parallel testing of different chemistries, as well as facilities for electrochemical testing.

Vlaamse Instelling Voor Technologisch Onderzoek N.V. (VITO)

Website: https://www.vito.be

Short description:

VITO is a leading European independent research centre in the areas of cleantech and sustainable development, elaborating solutions for the grand societal challenges of tomorrow: climate change, food security, a sustainable energy supply, the ageing population and scarcity of resources. The business unit of Separation and Conversion Technology is composed of ca. 120 staff and has organized its strategic research program around the theme 'Sustainable Chemistry' with special focus on (1) process intensification through the integration of separation processes with chemical, microbial, enzymatic and electrochemical conversion processes, and (2) the use of alternative feedstocks, such as CO2. The electrochemical research at SCT has a strategic focus on sustainable electrochemistry aiming for novel electrocatalysts and their integration into advanced reactors. The group is composed of six senior research staff members and about twenty PhD and post-docs with specialization in chemistry, material development, separation processes, electrochemistry and biotechnology in order to have an interdisciplinary approach. This proposal is at the core of VITO's research program 'CO2-to-products', where the current research effort is directed towards development of novel electrocatalysts for CO2 co-electrolysis, efficient electrodes and membranes, improved gas diffusion electrodes as well as up scaling towards a 5 kW-scale demonstrator.

Ductolux S.L. (DUCTOLUX)

Website: https://www.ductolux.com

Short description:

DUCTOLUX SL is a project engineering SME founded in Extremadura in 2008, focused on industrial engineering. Sensorization, Monitoring and analytical capacity oriented to different sectors. Specialized in energy infrastructures, its lines of research are currently aimed at 2 objectives: one located in sensorization research based on the development of digital twin technology and the other in research into energy storage systems in the form of green hydrogen, obtained from renewable energies for application in industrial processes.

DUCTOLUX's interest in collaborating with the TALENT4IBERIA project lies in its alignment with the company's strategy in terms of innovation based on the application of new IOT technologies in the framework of the O&M of the CSP power plants and in the exploration of the challenge of The new economy based on hydrogen.

Fotowatio Renewable Ventures (FRV)

Website: https://www.frv.com

Short description:

FRV, part of Abdul Latif Jameel Energy, is a leading global renewable energy development company. In line with our ambition to continue leading the global transition to a more sustainable energy future, FRV has evolved from being just a developer to becoming an

independent power producer. We aim to be the world's leading green energy and infrastructure platform.

Iberdrola S.A. (IBERDROLA)

Website: A global leader in renewables energy - Iberdrola

Short description:

Today, at the Iberdrola Group we are one of the main energy companies in the world, a leader in renewables and smart grids, which champions the energy transition towards a low-emissions economy. We supply energy to nearly 100 million people in dozens of countries and develop our renewable, network and commercial activities in Europe (Spain, the United Kingdom, Portugal, France, Germany, Italy, etc.), the United States, Brazil, Mexico and Australia, among others. At Iberdrola we are 20 years ahead of the energy transition to address the need for an energy model based on sustainability and innovation.

Skydweller S.L. (SKYDWELLER)

Website: https://www.skydweller.aero

Short description:

Skydweller is a US-Spanish multinational aerospace startup developing solar powered aircraft solutions capable of achieving perpetual flight with the most powerful payload capacity. Utilizing technology based upon the longest, continuous solar powered flight program in history, it is creating a new class of unmanned aircraft, creating a more secure and connected world. One of the main focuses at Skydweller is the development of the Power systems and its energy storage system to improve the operational capabilities of its Solar Power Unmanned Air System. Within that development, research lines will focus on the integration of very high energy density battery cells into custom designed ultra-lightweight and airworthy battery packs.