

AGREEMENT regarding the "Investigation of sputtered thin-layer oxygen evolution electrocatalysts in alkaline media and the effect of structural and electronic properties on the catalytical performance" (AEMWE") Project

Between

the **Central European Research Infrastructure Consortium** (hereinafter **CERIC**), with registered offices at Trieste (Italy), S.S. 14 – km 163,5 in AREA Science Park, tax number 90143090323, represented by Prof. Andrew Harrison, Executive Director,

and

Charles University (hereinafter referred to as "CU", hosting the CERIC Czech Partner Facility, SPL-HTC), with registered office in Prague (Czech Republic), Ovocný trh 560/5, tax code CZ00216208, represented by the Rector, Prof. MUDr. Milena Králíčková, Ph.D.,

Graz University of Technology (hereinafter referred to as "TUG", hosting the CERIC Austrian Partner Facility, Institute of Inorganic Chemistry), Rechbauerstraße 12, 8010 Graz, Austria, represented by Univ.Prof. Dipl.-Chem. Dr.rer.nat. Frank Uhlig

Hereinafter collectively referred to as the "Parties" and individually as "Party"

WHEREAS:

CERIC is a European Research Infrastructure Consortium established by the European Commission in compliance with Regulation (EC) no. 723/2009 of June the 24th. The Members of CERIC are the Countries' governments listed in Annex 1 of the Statutes of CERIC.

CERIC's statutory aim is to contribute to European top-level research and technological development and demonstration programs and projects, thus representing an added value for the development of the European Research Area (ERA).

CERIC is a research infrastructure consortium, with a large community of users selected on the basis of excellence of the scientific proposals. It is based on the multidisciplinary and multi-probe integration of scientific and analytical capabilities provided as in-kind contributions by the Members, who support the activities of CERIC by giving free open access to international researchers selected by CERIC on international calls and peer review.

CU and TUG have been nominated by the respective Governments, in compliance with art. 9 of the Regulation (EC) no. 723/2009 of June the 24th, as their Representing entities in CERIC, since they are institutions which can support the scientific and technical operation of CERIC including the provision of operation and access to one national facility (the hereinafter referred to as the "Czech PF" and the

"Austrian PF"). The free open access is given to international users selected by CERIC as a result of international calls for proposals and peer review.

CERIC and CU have entered on 18.05.2015 into a Framework Agreement establishing the general framework of the mutual responsibilities and obligations in supporting the scientific, technical and administrative operation of the PF.

CERIC and TUG have entered on 02.06.2015 into a Framework Agreement establishing the general framework of the mutual responsibilities and obligations in supporting the scientific, technical and administrative operation of the PF.

In the context of the support provided by CERIC to the operation of the PFs, CERIC on July 1st, 2022 issued the Invitation to submit an Expression of Interest (hereinafter "EoI") to take part in CERIC Research Infrastructure development or upgrade activities as per Annex A to the present Agreement, for the selection of research projects that contribute to the quality and competitiveness of both CERIC internal research and its offer to external users, as well as promote the further attraction and integration of the national resources in the CERIC PFs or in CERIC's activities.

CERIC's General Assembly has on 13.2.2023 approved the results of the CERIC's call, and gave the Executive Director the mandate to negotiate the contracts with the successful applicants, including the subject proposal "Investigation of sputtered thin-layer oxygen evolution electrocatalysts in alkaline media and the effect of structural and electronic properties on the catalytical performance" (AEMWE") Project submitted by Charles University and TU Graz (hereinafter, "AEMWE" or "the Project").

The General Objective of the Project is to increase the knowledge on electrolysis and to strengthen the position of the whole consortium in the global effort to envelop production of renewable hydrogen.

For this reason, the parties deem it worthwhile to initiate a doctoral project dedicated to these research activities.

Following positive evaluation by ISTAC and approval of the Project by the CERIC General Assembly,

IT IS HEREBY AGREED BETWEEN THE PARTIES AS FOLLOWS:

SECTION 1: OBJECT AND PURPOSE

1.1 Object

This Agreement regulates the relationship between the Parties for the correct and timely execution of the Project as per Annex 1 (Project Description) in attachment, by specifying their mutual rights and obligations in the pursuit of the common scope.

The Project will be co-funded by the Parties according to the approved Project budget detailed in the section "Resources" of the Annex 1 (hereinafter the "Project Budget").

The Project is directed by the Project Coordinator (hereinafter the "PC"), [REDACTED] Charles University. The reference person for TUG is [REDACTED].

The role of supervisor of the doctoral student will be covered by [REDACTED] the Deputy PC, from the Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University.

SECTION 2: ENTRY INTO FORCE, DURATION AND TERMINATION

2.1 Entry into force

This Agreement shall enter into force on the date of signature of the last of the contracting parties ("Effective date").

The Agreement shall become effective on the date of its publication in the Czech Contracts Register in accordance with Act No. 340/2015 Coll., ("Effective date") on special conditions for the effect of some contracts, the publication of such contracts and the register of contracts (the Contracts Register Act), as amended.

The contracting parties expressly stipulate that Charles University assumes responsibility for publication of this Agreement in the Contracts Register in line with Act No. 340/2015 Coll., as amended.

2.2 Duration, termination and withdrawal

This Agreement shall continue in full force and effect until the complete fulfilment of the Project and of all related obligations undertaken by the Parties.

The maximum period for completion of the Project is 48 months accruing from the Effective Date, unless at the expiry of such a period, and limited to cases properly justified, the Parties commonly agree to a no-cost extension of the Project and the related re-budgeting according to the provisions of the following section 4.3.

Each Party may exercise the right of withdrawal at any time by giving 60 (sixty) days prior written communication by registered mail. If the withdrawal of one of the Parties jeopardizes the implementation of the Project, the PC, upon consultation with the Directors of the PF hosting the Project, may propose an alternative work program in line with the scope of the Project and the approved budget, (for the approval of the remaining Parties).

Should the selected candidate renounce to the doctoral Project before the completion of the same, the Charles University will inform immediately CERIC-ERIC, in order to proceed with the calculation of the amount not used. The funds not used are to be transferred to CERIC-ERIC within 30 days from the notification.

In case of suspension of the doctorate programme in case of maternity/paternity, serious and certified illness, and other major cases ruled by the law, the Charles University will inform immediately CERIC-ERIC, providing any relevant information about the national protection legislation that applies in the cases mentioned. Suspension cannot be requested with retroactive effect.

Termination or withdrawal of the Parties shall not affect any of the rights or obligations the Parties have accrued according to the time schedule of the Project prior to the date of termination or withdrawal.

SECTION 3: RESPONSIBILITIES OF PARTIES

3.1 General principles

Each Party undertakes to take part in the effective implementation of the Project and to cooperate, perform and fulfil, promptly and on time, all of its obligations according to the Project, as per Annex 1, its tasks and time schedule, and this Agreement.

Each Party undertakes to notify the other Parties promptly of any significant information, fact, problem or delay likely to affect the performance of the Project.

Each Party shall take reasonable measures to ensure the accuracy of any information or materials it supplies to another Party.

3.2 Contributions of the Parties

According to the AEMWE Project proposal, CERIC will cover the PhD scholarship cost, which will be held at Charles University, upon signature of a separate agreement with CERIC, TUG and CU.

The research activity of the doctoral student will be carried out under the supervision of Dr. Peter Kúš, from the Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University.

During the hosting of the PhD student at the Czech and Austrian PFs, he/she shall comply with all safety regulations in force in the respective facilities.

The Parties undertake to make available the use of their premises, laboratories, equipment and technical services required to perform the activities related to this Agreement, complying with the safety regulations in force.

3.3 Project Coordinator (PC)

The PC shall be responsible for the management of the Project and the overall coordination of the Parties and acts as an intermediary between CERIC and the other Parties.

In particular, the PC shall be empowered and responsible for:

- planning and guiding the Project and reporting to CERIC, as well as to the Directors of the involved Partner Facilities;
- administering and as necessary updating the budget
- transmitting promptly to CERIC and the other Parties documents and information connected with the Project;
- supervising the scientific work of the team members;
- monitoring compliance by the Parties with their obligations;
- ensuring that work is carried out according to the Project timetable;
- collecting, reviewing and submitting information, reports and other deliverables to CERIC and to the Directors of the involved PFs according to the present Agreement.

The execution of tasks reserved to the competence of the PC may be delegated by the PC to a Deputy Project Coordinator, with comparable competence in the Project research field acting under her/his supervision as permanent Deputy of the PC. Provided the PC, for sound reasons, is permanently prevented from completing the Project, the Deputy PC will take over the role of PC.

3.4. Cooperation in externally funding projects

In line with the decision of the General Assembly on 1.2.2023, the signatories commit to allow and stimulate the Partner Facilities to participate in projects through CERIC when more than two CERIC's PFs are interested in participating in the proposal for a duration of 5 years.

SECTION 4: REPORTING AND BUDGET

4.1 Budget of the Project

The total budget of the Project is detailed in the sections "Implementation" and "Resources" of Annex 1, and CERIC contribution is detailed by the budget breakdown (Annex 2).

CERIC will cover the PhD student personnel costs and other additional costs, such as consumables costs, travel costs and costs related to dissemination activities (conferences, open-access publications).

The partner institutions will contribute consumables, services and personnel costs.

All values indicated in the budget include any potential additional cost related to the VAT.

4.2 Budget changes

Any change in the project's Budget that does not entail any modifications on the total amount of the project budget indicated in art.4.1 must be approved by the CERIC Executive Director.

Any change in the project's Budget that entails modifications on the total amount of the project budget indicated in art. 4.1 must be approved by the CERIC Executive Director on the basis of the ISTAC opinion.

In both of the above considered cases, the PC shall send the requests for change to ei2022@ceric-eric.eu describing what will be the impact of the change on scientific implementation of the Project, if any, and on the duration of the Project.

4.3 Periodic reporting

Charles University in agreement with the Project Coordinator shall provide a periodic report on basis of the values of the resources committed in-kind within the Project, (in time to allow their accounting within the annual CERIC Financial Statements.)

The reporting periods are defined as follows:

	<i>Reporting period</i>	<i>Financial Report due within</i>
1	From the Effective Date to Dec. 2025	Feb. 2026
2	From Jan. 2026 to Dec. 2026	Feb. 2027
3	From Jan. 2027 to Dec. 2027	Feb. 2028
4	Jan. 2028 to the end of the contract	2 months after the end of the contract

4.4 Scientific and technical report

Within two months after the termination of the Project, the PC shall submit to CERIC a final Project report on the implementation of the Project and its scientific results.

SECTION 5: CONTACT PERSONS

Any communication, notification, request, or documentation submission regarding the implementation of the Project shall be sent in writing to the following contact persons of the Parties, unless otherwise provided for by the present Agreement:

<p>For CERIC:</p> <p>██████████</p> <p>Executive Director S.S. 14 - km 163,5 in AREA Science Park 34149 – Trieste, Italy</p> <p>████████████████████</p>	<p>For Charles University:</p> <p>The Director of the Partner Facility:</p> <p>████████████████████</p> <p>Department of Surface and Plasma Science, Faculty of Mathematics and Physics V Holešovičkách 2, 180 00 Prague 8, Czech Republic To: ████████████████████.cz</p>
<p>ForTU Graz:</p> <p>The Director of the Partner Facility:</p> <p>Assoc. ██████████ Heinz Amenitsch Institute of Inorganic Chemistry Stremayergasse 9/V, 8010 Graz, Austria To: heinz.amenitsch@elettra.eu</p>	

Any communication, notification, request or documentation shall always contain reference to the acronym "AEMWE" and should be addressed to the following email: ████████████████████

SECTION 6: PUBLICATIONS and IP

6.1 Intellectual property

Intellectual property rights, hereinafter referred to as "IPRs", owned or acquired by one of the Parties prior to, or independently from the execution of this Agreement will remain the property of such Party.

IPRs concerning the results of the collaboration under this Agreement shall be attributed to the Parties in proportion to the respective financial and scientific contribution to its achievement. However, each Party will be free to use them for its own research purposes.

Inventions, improvements and discoveries conceived or made solely by one of the Parties shall belong to the Party that has conceived or made them.

6.2 Publications

The Parties agree that any publication concerning the results of the collaboration under this Agreement shall acknowledge the Project and the contribution made by each of the Parties to the achievement of the aforementioned results.

SECTION 7: CONFIDENTIALITY

7.1 Notion of confidentiality

Each Party shall treat as confidential any news, data, information, documents, know-how or other material regarding the Project (hereinafter referred to as "Confidential Information"), whether marked or not as Confidential, and pertaining to the other Party, of which the Party has knowledge by reason of the implementation of this Agreement.

Each Party shall not use any Confidential Information for purposes other than those set out in this Agreement.

7.2 Treatment of confidential information

Each Party shall maintain the Confidential Information with the utmost care and diligence, allowing access only to those persons directly involved in the activities under this agreement, upon being informed of the confidential nature of the information.

A Party shall not disclose Confidential Information to any third party unless it is obliged to disclose it in accordance with applicable law.

Breach of confidentiality undertakings by either Party shall entitle the other Party to terminate this Agreement without prejudice to the provisions of Section 10 and to the possibility of taking legal action depending on any damage they may have suffered.

SECTION 8: DATA PROTECTION

Pursuant to the European Regulation 2016/679 (GDPR), each Party undertakes to ensure that any personal data provided by a Party to another, considered necessary for the execution of this agreement, shall be processed solely for the purpose of carrying out the activities under this Agreement as well as to comply with the obligations provided for by laws, regulations and/or orders of public authorities.

Any personal data provided by a Party to another, considered necessary for the execution of this Agreement, shall be treated according to the European Regulation 2016/679 (GDPR).

Details concerning the processing of personal data shall be made available to data subjects by each Party in the corresponding data protection notices.

In compliance with articles 12, 13, 15 to 22 and 34 of Regulation (EU) 2016/679 of the European Parliament and the Council "on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation, hereinafter "GDPR"), concerning the rights of the data subject, more specifically "Transparent information, communication and modalities for the exercise of the rights of the data subject", it is specified that, in implementing this Agreement, the personal and contact details of the persons who, according to their duties or assignments, manage the present Agreement and execute it, shall be reciprocally communicated or otherwise made available to their respective reference persons.

Data shall be stored until completion of the reciprocal services covered by the present Agreement itself and, subsequently, according to the terms specified by the regulations in force.

The data subject can exercise all the rights provided for by articles 15 to 21 of the GDPR.

CERIC-ERIC Data Protection Officer (DPO) can be contacted at the following e-mail address dpo@ceric-eric.eu.

SECTION 9: LIABILITY

9.1 Risks and liabilities

The Parties shall not be liable to each other for any loss, damage or injury arising in connection with the performance of this Agreement, except if caused by:

- the demonstrable gross negligence or willful misconduct of each Party or its personnel;
- or a breach of Section 7 by each Party or its personnel;

Each Party shall be exclusively liable for any loss, damage or injury in a demonstrable way caused by its personnel to third parties, in connection with the performance of this Agreement.

SECTION 10: MISCELLANEOUS

10.1 Annexes and severability

Annex A and Annexes are integral parts of the present Agreement.

In case of conflict between the documents comprising this Agreement, they shall prevail in the following order of precedence:

1. The present Agreement;
2. Annex 1 (Project Description).
3. Annex 2 (Budget breakdown);
4. Annex A (Invitation to submit an Expression of Interest to take part in CERIC Research Infrastructure development or upgrade activities dated July 1st 2022).

Should any provision of this Agreement become invalid, illegal or unenforceable, it shall not affect the validity of the remaining provisions of this Agreement. In such a case, the Parties concerned shall be entitled to request that a valid and practicable provision be negotiated, which fulfils the purpose of the original provision.

10.2 Language

This Agreement is drawn up in English, which language shall govern all documents, notices, meetings relative thereto.

10.3 Applicable law

This Agreement shall be construed in accordance with and governed by the legal provisions of the EU Regulation no. 723/2009, the CERIC Statute and, where applicable, internal Regulations of each of the Parties, and for the parts not covered, the Italian law.

10.4 Settlement of disputes

The Parties shall endeavor to settle their disputes amicably.

According to Article 15 of CERIC Statute and art. 2 of CERIC Internal Regulation 7, the ISTAC shall advise CERIC General Assembly, CERIC Executive Director and the Directors of the Partner Facilities in evaluating the scientific and technical profile of any potential disputes arising from this Agreement.

All disputes arising out of or in connection with this Agreement, which cannot be resolved amicably, shall be finally settled before the competent Italian Courts.

10.5 Execution of the contract

The Parties agree that the execution of this Agreement by exchanging PDF advanced electronic signatures shall have the same legal force and effect as the exchange of original signatures.

For CERIC

28-2-25

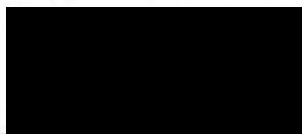


Prof. Andrew Harrison
Executive director

For Charles University

17.6.2025

Date



Prof. MUDr. Milena Králíčková, Ph.D.,
Rector

For the TU Graz

12.2.2025

Date

[Redacted Signature]

Head of the Institute of Inorganic Chemistry, Graz
University of Technology

**Director of the Czech Partner Facility and
Project Coordinator:**

22.5.2025

Date

[Redacted Signature]

Nanomaterials Group Leader, Charles University

Director of the Austrian Partner Facility:

11.2.2025

Date

[Redacted Signature]

Group Leader, Graz University of Technology

Expression of interest form – human resources

Proposal Full Title

Investigation of sputtered thin-layer oxygen evolution electrocatalysts in alkaline media and the effect of structural and electronic properties on the catalytical performance

PROPOSAL ACRONYM

AEMWE

Cover Page:

- CERIC partner facility: SPL-HTC (Czechia)
- Coordinator name: Prof. Iva Matolínová, Charles University
- Participating institution TU Graz, Dr Heinz Amenitsch.
- University awarding the PhD degree: Charles University
- PhD supervisor: Dr Peter Kúš
- Expected duration in months: 48
- Expected recruitment timeline: March or October 2023

Proposal summary (up to 200 words)

Electrolysis is one of the best known and simplest methods used for the production of pure hydrogen, both on a small and large scale, starting from water, that is, from an extremely abundant primary source.

The objective of this dissertation thesis is to build on the prospective results of the SPL-HTC RI, predominantly in the area of novel catalysts for the oxygen evolution reaction. Magnetron sputtered thin-film catalysts, typically with a structure of Ni,Co,Fe/porous sublayer will be studied with emphasis on the stability and activity dependence on morphology and defect density. Layers of various compositions and morphologies will be prepared with the goal of identifying the ideal structural parameters in terms of both durability and activity. Wide arsenal of analytical methods will be available, ranging from electrochemical testing through X-ray photoelectron spectroscopy to electron microscopy. A great focus will be laid on the operando variants of those methods.

1. Scientific and technical program/quality of the activity in which the HR will be employed (ca. 0.5 page)

A water electrolyzer (WE) is an electrochemical cell that converts electrical energy to chemical energy by means of the endergonic reaction $2\text{H}_2\text{O} + \text{electrical energy} \rightarrow \text{O}_2 + 2\text{H}_2$. The conversion of electricity to

another form of energy and its consequent storage is a very important topic in the context of the utilization of renewable but intermittent energy sources (e.g., sun and wind).

In PEM electrolysis, the H^+ cations produced at the anode (by the water molecule) move to the cathode through a solid electrolyte, a polymeric acid membrane. H^+ cations combine to the cathode forming hydrogen, while oxygen is formed at the anode. In AEM electrolysis occur the same reactions but the charge carrier are the OH^- anions moving through a polymeric alkaline membrane. Typically, precious metal of platinum group (PMG) are used in the PEM technologies while transition metals as Ni, Co and Fe are used in the AE and AEM systems.

Anode Exchange Membrane Water Electrolyzers present a crucial step in building the Hydrogen economy, as they combine the advantages of Alkaline electrolyzers (non-noble catalysts) and Proton Exchange Membrane Water Electrolyzers (high efficiencies, variability, compact design). Finding a sufficiently active, stable, and non-noble catalyst for the anode and cathode side of the AEM-WE is one of the leading research goals in the field.

The Ni-Fe/Ni-Co alloys etc. have shown remarkable performance for the anodic oxygen evolution reaction, even in pure water – many catalysts work only in the KOH electrolyte. However, the exact understanding of the Ni, Co, and Fe-based catalysts is still missing.

The objective of this dissertation thesis is to build on the prospective results of the Nanomaterials Group, predominantly in the area of novel catalysts for the oxygen evolution reaction. Magnetron sputtered thin-film catalysts, typically with a structure of Ni,Co,Fe/porous sublayer will be studied with emphasis on the stability and activity dependence on morphology and defect density. Layers of various compositions and morphologies will be prepared with the goal of identifying the ideal structural parameters in terms of both durability and activity. Wide arsenal of analytical methods will be available, ranging from electrochemical testing through X-ray photoelectron spectroscopy to electron microscopy. A great focus will be laid on the operando variants of those methods.

AEM electrolysis is a developing technology. It summarize some advantages of both technologies, low cost catalysts such as liquid alkaline, compactness and high pressures such as polymeric. Many research organizations and universities are actively involved in this research, largely due to its low cost and the high performance it offers.

2. Impact (max 0.5 page)

The expected impact of the proposed research/technical activity on the overall quality and capability of CERIC' (max 0.5 page).

Continuous straightening of the SPL-MSB PF effort in the field electrochemistry for sustainable energy resulted in expansion of the PF by Hydrogen Technology Centre (HTC), the funding of which is planned from 2023. HTC will take advantage of 5 year synergetic scientific and funding effort of the RI program and the Structural Fund project "New Generation of Fuel Cell" (2 M€, 2018 -2022). The HTC will benefit merging of both teams composed of highly qualified experts into a unique knowledge based project.

This planned expansion to HTC is a response to the new societal challenges associated with the new EU Growth Strategy to make Europe in 2050 by the first climate neutral continent in the world. The newly formed HTC in frame of the RI SPL-MSB will offer to users open access to advanced experimental systems allowing their research in the field of hydrogen technology, particularly fuel single cells and fuel cell stacks. Moreover, recent development shows that AEMWE would be in the center of interest for scientists, too, as it was shown above. Another element straightening the WE research is the new situation caused by the war in Ukraine when the production of hydrogen by WE will be one of the pillars of replacing Russian gas.

PhD thesis in the field of AEMWE will help to straighten the position of the whole consortium in the global effort to envelop production of renewable hydrogen. Internally, this work will help to improve the HTC services in profit of the whole consortium.

3. Implementation (max 2 pages)

Outline of the

- Research/technical program (also main techniques proposed/involved ca. 0.5 page)
- Estimated cost, if relevant (tuition fee, salary/stipend, travel, consumables)

PhD work time schedule:

- 1) Bibliographic research.
- 2) Getting acquainted with the experimental methods.
- 3) Preparation of a series of thin-film catalysts for AEM-WE.
- 4) Characterization of prepared samples and study of their properties.
- 5) Evaluation of the results.
- 6) Writing the dissertation.

Annex 1: Resources connected to the activity of the required staff (including overall estimated costs and use of the CERIC funding)

<i>CERIC</i>	Total in Euro			
	Year 1	Year 2	Year 3 (for PhD)	Year 4 (for PhD)
Consumables	0	0	0	0
Personnel cost (PhD, researcher or technical staff)				
Travel costs				
Other costs (conferences fees, publications, training, etc)				
TOTAL	10 000	10 000	10 000	10 000

<i>Resources contributed by the partner institutions</i>	Total in Euro			
	Year 1	Year 2	Year 3 (for PhD)	Year 4 (for PhD)
Equipment	0	0	0	0
Consumables and services				
Personnel cost ⁺				
Travel cost				
TOTAL	34 880	34 880	34 880	34 880

General conditions: The PhD study will be organized at the Faculty of Mathematics and Physics of the Charles University. Students are admitted yearly to doctoral study programmes following an admission interview organized during June and December. During their four-year doctoral study, the PhD students have to follow several courses (depending on their doctoral study program and branch) and pass the corresponding exams. To complete the doctoral study, it is necessary to pass the State Doctoral Examination and to defend the doctoral thesis. The prerequisite for the successful defence of the doctoral dissertation is student's experimental/scientific activity reflected in their participations in scientific events (conferences, workshops, etc.) and the quantity and quality of scientific publications.

Costs and co-funding opportunity

The current PhD project will be cofounded by CUP for one PhD student.

CUP cofunding will cover:

- Scholarship – offered for free
- Stipend –
- consumables and overheads associated with the PhD student activity within CUP–
(WE TEST BENCH – 30% of yearly depreciation 6 200 EUR, SEM-FIB - 20% of yearly depreciation
sputtering targets chemicals (ionomers, pure gases,...)
travel 20% overheads

TOTAL – 139 520 EUR/4 years

CERIC cofunding will cover:

- mobility to partners - Will be used for the mobility of the PhD student, namely for several internships at the SAXS beamline of Elettra Sincrotrone Trieste in a total duration of two months per year, and the participation in international scientific conferences, workshops, etc. (1 active participation per year; fee, travel, accommodation, daily allowance -

- Stipend supplement – 6000 EUR/year
- TOTAL – 40 000 EUR/4 years

Annex 2: for PhD's: a short CV of the proposed supervisor, if relevant (max 0.5 page)

CURRICULUM VITAE

NAME, titles
 Date of birth:
 Phone:
 E-mail:
 Nationality:
 Gender:
 Employer: Faculty of Mathematics and Physics, Charles University
 Department: Department of Surface and Plasma Science
 ORCID:
H-INDEX: 14

EDUCATION

<i>Date</i>	<i>School</i>
2013-2018	Charles University, Faculty of Mathematics and Physics -PhD degree (Physics of Surfaces and Interfaces)
2011-2013	Charles University, Faculty of Mathematics and Physics -Master's degree (Physics of Surfaces and Ionized Media)
2008-2011	Charles University, Faculty of Mathematics and Physics -Bachelor's degree (General Physics)

WORK EXPERIENCES

<i>Date</i>	<i>Position/Employer</i>
2021-ongoing	Scientific-academic researcher at Faculty of Mathematics and Physics, Charles University
2018-2021	Scientific researcher at Faculty of Mathematics and Physics, Charles University

RESEARCH INTERESTS

Material and surface science
Nanostructured heterogeneous catalysts
Multitarget magnetron sputtered functional thin films
Proton exchange membrane fuel cells, water electrolyzers and reversible cells
Operando structural and electrochemical analysis

Invitation to submit an expression of interest to take part in CERIC development activities

1.7.2022

Rationale

Article 5 of CERIC Statutes states that CERIC's objective shall be to contribute to European top-level research and technological development and demonstration programs and projects, thus representing an added value for the development of the European Research Area (ERA). It should also further the integration of the multidisciplinary analytical, synthesis and sample preparation capabilities of national Partner Facilities (PFs) operating mainly in the Central European Area, into a unique, EU-level Distributed Research Infrastructure, open to researchers at the world level.

To this end, CERIC has awarded Research Grants and Infrastructure Development funds and supports PhDs and plans to support further activities. These will be defined on the basis of expressions of interest (EoI) submitted by the CERIC PFs through their Directors and selected through evaluation by its International Scientific and Technical Advisory Committee (ISTAC). In exceptional cases, an institution not associated with CERIC may be invited to submit a proposal.

This call for EoI aims to collect proposals on various activities and ideas to maximise the impact on the development of CERIC while simplifying the initial application process. Applications will be followed by a selection based on evaluation by ISTAC and by negotiations with the selected proposers allowing the preparation of a final detailed proposal, a ranking by ISTAC and approval of the funding allocation by the GA.

Goal and scope of the invitation

CERIC is publishing this call to collect EoIs from its PFs and other institutions. The EoI should include proposals to:

- contribute to the quality and competitiveness of both CERIC internal research and its offer to external users,
- promote the further attraction and integration of the national resources in the CERIC PFs. Or in CERIC's activities and offer to external users for external invited institutions.

CERIC recognises that at this stage of its development, there are diverse needs of the PFs and CERIC, which may require support through different actions. The applicants are therefore invited to submit EoIs involving:

1. Human resources (PhD or postdoc level, or high-level technical personnel (e.g. informatics...))

The personnel shall undertake research/technical activities within at least two CERIC's PFs, to be demonstrated through joint outputs. In the case of PhDs, if needed, there will be one supervisor from a selected University and/or one tutor/supervisor from each facility involved. The 2-year postdocs contracts, if granted, will be awarded by CERIC and the personnel will contribute in-kind to the selected facilities. Preferably, all HR should be shared between at least two facilities. Up to 20 human resources are expected to be funded.

2. Research infrastructure development or upgrade

The action will aim to strengthen the RI of CERIC and its offer, particularly in its priority fields of energy materials (battery, fuel cells, electrolysers) and life science research. It will support either the purchase of equipment or an upgrade or construction of an instrument or a beamline, in which case technical and implementation designs containing sufficient detail for the ISTAC's decision should be annexed to the proposal.

The maximum amount required and allotted for a single proposal should optimally not exceed 500,000 EUR in total and should be used to co-fund an upgrade or new equipment. Ideally, the project should be completed within 2 years from the signing of the contract, although longer periods may be accepted if properly justified.

Who can apply

The Eols should be submitted by the Director of a CERIC PF. In order to strengthen the offer of CERIC, applications from institutions other than CERIC's PF/representing entity (RE) are eligible, providing that the applying institution commits to provide open access to a specified RI through the CERIC open calls for the duration of the support activity, or for 5 years after the completion of the RI, in the case of RI investment. In such a case, the Eols should be signed by the Director of the submitting institution.

While single applicant Eol proposals are also possible (e.g. in the case of the institutions external to CERIC), collaborative proposals bringing together two or more members are preferred.

Each facility can submit up to four proposals, clearly indicating a priority between multiple proposals.

Evaluation

The ISTAC will be in charge of the evaluation of the Eol proposals. If needed, it may invite external experts to provide an opinion. The ISTAC will formulate their recommendations based on the following criteria:

- Scientific or technical quality of proposals. For RI upgrade/development proposals, the uniqueness of the proposed RI on a global level and complementarity with the present offer of CERIC will be assessed.
- The expected impact of the proposal on the overall scientific and technical quality and capability of CERIC and on further integration of the national resources, if relevant, and on the development of the European Research Area. Where relevant, the share of the time foreseen for the CERIC open access will also be considered. Other impacts, such as the opportunities to stimulate the setting up of industrial activities in the CERIC Countries or of socio-economic returns will also be taken into account. Additionally, if relevant, the amount of the complementary co-funding raised and resources made available (e.g. personnel, other instruments...) for the implementation of the proposal, as demonstrated by the submitted letters of intent, will be considered. Please note that the infrastructure should be 100% within CERIC-ERIC programmes for at least 5 years to allow for tax exemption requirements and the best use of the funding. Although not obligatory, fulfilment of this requirement will be considered in the evaluation and in the negotiations.
- The quality, technical maturity of the proposal and clear structure of the activities proposed.

For the RI upgrades/development of the RIs, the proposals should present a credible plan of how the operation of the new facility will be funded and sustained. Proposals lacking this requirement will not be considered for funding.

In the first phase, each of the three criteria will be scored from 1-5, 5 meaning excellent. The first two criteria will be preponderant. As a part of the first stage of the assessment, ISTAC will also add comments regarding the need for further information or modifications to the proposals. The updated proposals and the terms of contracts negotiated by CERIC will be used in the second phase for the creation of the ranking list by ISTAC and sent to the General Assembly for the final funding decision, optimally, during its November 2022 meeting.

The ISTAC may decide not to propose any proposal for funding.

Eligibility criteria

The proposals must be submitted by the Director of a CERIC Partner Facility or the non-CERIC institution. All proposals must be complete and submitted before the relevant deadline. Proposals exceeding the maximum budget specified for the CERIC contribution or incomplete may be considered ineligible.

Eligible costs

The proposal must give a full account of the costs of the overall project, from design to implementation, including the part to be charged on the CERIC contribution and the costs of resources contributed "in-kind" (e.g. for the design and preparatory studies in the case of RI investment.) and 'in cash' by the hosting institution or third parties.

The following costs are eligible for the CERIC funding:

- salaries of researchers and/or technical personnel hired by CERIC for the performance of the project;
- external services;
- consumables;

- durable equipment (including costs associated with setting up the equipment, such as transport and training). This cost category is not eligible for Eol for human resources;
- publication, dissemination and communication expenses.

Overheads are not eligible costs and are considered in-kind contributions by the hosting Institution/Partner Facility.

All the purchases funded with the CERIC contribution will be performed by the CERIC central administration.

Ownership and the share of operational costs covered by the co-funding parties (including CERIC) will be a part of the implementation contract between the parties.

Documentation

All documents must be sent by email to Eol2022@CERIC.eu

The proposals must be submitted on the template in Annex to the present call for Eol, together with the letters of intent demonstrating the additional funds intended and the open access provisions, where relevant.

The deadline for submission is 24.10.2022 24h CE.

Annexes –Application forms

For further information or questions regarding the Call please CERIC at contact [REDACTED]

Invitation to submit proposals for the development of the CERIC-ERIC research infrastructure

Proposal Full Title

PROPOSAL ACRONYM

Cover Page:

- Proposing CERIC Partner Facilities or invited institutions
- Name and affiliation of the proposal coordinator
- Expected duration of the development in months

Proposal summary (up to 200 words)

The abstract (summary) should, at a glance, provide the reader with a clear understanding of the proposal, covering the main elements of the project, its implementation and cost.

Section a: Scientific and technical quality of the proposal

The Proposal should describe in a concise manner the scope and scientific and technical quality of the proposal, underlining the uniqueness of the proposed RI/upgrade in the global landscape and its complementarity with the present research infrastructure endowment and offer to external users by CERIC. (maximum 1 page)

Section b: Impact

The Proposal should describe the expected impacts of the proposal on the overall scientific and technical quality and capability of CERIC and, if relevant, on further the attraction and integration of national resources for the implementation of the proposal. The share of the time foreseen for the CERIC's in-house research and open access, the amount of complementary co-funding raised and resources made available (e.g. personnel, other instruments...), including letters of intent, will be considered. Other impacts, such as the opportunities to stimulate the setting up of industrial activities of CERIC or of socio-economic returns will also be taken into account.

The proposers should also describe the added value for CERIC Member States (maximum 1 page)

Section c: Description of the implementation and sustainability

This section should describe in a clear and convincing way the maturity and implementation of the project and its timeframe. Please outline the expected workflow and breakdown in a Gantt chart. Provide a description of the ensuing required resources for operation within CERIC over a period of at least 5 years, including the human resources and how their funding will be achieved (CERIC and other sources). (maximum 3 pages, including the tables).

Commitments on operations support will be included in the contracts.

Technical design and implementation details, if applicable, should be included as an annex (no length limit).

Resources (including overall estimated costs and use of the required additional CERIC funding)

CERIC		Total in Euro	
		Year 1	Year 2
Equipment (cost and expected % financed by CERIC)	%		
Consumables			
Personnel cost *			
Travel cost *			
TOTAL			

** Only in exceptional cases with clear justification*

Resources contributed by the partner institutions	FTE or %		Euro	
	Year 1	Year 2	Year 1	Year 2
Equipment (cost and expected % financed by the partner institutions)				
Consumables and services				
Personnel ⁺				
Travel				
TOTAL				

⁺Please indicate in a note, if applicable, how many of those FTEs are personnel to be hired

The cost estimations, both required to CERIC and contributed ad co-funding, should be as accurate as possible.

Expression of interest form – human resources

Proposal Full Title

PROPOSAL ACRONYM

Cover Page:

- Proposing CERIC Partner Facility (PF) or other invited facility, the lead proponent's/coordinator name and affiliation, add reference name in each participating institution. For PhD students, list also the University awarding the degree and the name of the proposed supervisor
- Expected duration in months
- Expected recruitment timeline (when should the agreement with the university be ready, when are the calls open, etc...)

Proposal summary (up to 200 words)

The abstract (summary) should, at a glance, provide the reader with a clear understanding of the proposed hiring, covering the main elements, activities in which are employed, partnering institutions, implementation and cost.

1. Scientific and technical program/quality of the activity in which the HR will be employed (ca. 0.5 page)

2. Impact (max 0.5 page)

The expected impact of the proposed research/technical activity on the overall quality and capability of CERIC' (max 0.5 page).

3. Implementation (max 2 pages)

Outline of the

- Research/technical program (also main techniques proposed/involved ca. 0.5 page)
- Estimated cost, if relevant (tuition fee, salary/stipend, travel, consumables)

Annex 1: Resources connected to the activity of the required staff (including overall estimated costs and use of the CERIC funding)

<i>CERIC</i>	Total in Euro			
	Year 1	Year 2	Year 3 (for PhD)	Year 4 (for PhD)
Consumables				
Personnel cost (PhD, researcher or technical staff)				
Travel costs				
Other costs (conferences fees, publications, training, etc)				
TOTAL				

<i>Resources contributed by the partner institutions</i>	Total in Euro			
	Year 1	Year 2	Year 3 (for PhD)	Year 4 (for PhD)
Equipment				
Consumables and services				
Personnel cost ⁺				
Travel cost				
TOTAL				

Annex 2: for PhD's: a short CV of the proposed supervisor, if relevant (max 0.5 page)

Annex 2

BUDGET SUMMARY PER WP	
BUDGET ITEM	WP1
TOTAL	
TOTAL PER WP	
TOTAL PROJECT COST	40.000,00

CERIC FINANCIAL CONTRIBUTION	
BUDGET 1st period	WP1
TOTAL	
BUDGET 2nd period	WP1
TOTAL	
BUDGET 3rd period	WP1
TOTAL	
BUDGET 4th period	WP1
TOTAL	
Total project cost	40.000,00

Annex 2

Budget category	WP1			
	2025	2026	2027	2028
Equipment				
Consumables and services				
Personnel cost				
Travel costs				
Other costs (conferences fees, publications, training, etc)				
Subtotal				
TOTAL BUDGET	40.000,00			

NOTE- In the table the beneficiary should list all major purchases