

Strategy for international cooperation in research and development at the J. Heyrovský Institute of Physical Chemistry of the CAS, v. v. i.

Version 2.0

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EUROPEAN UNION
European Structural and Investment Funds
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Development and Education



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1. Introduction

This Strategy provides the basic framework for the implementation of priorities in international cooperation at the J. Heyrovský Institute of Physical Chemistry of the CAS (HIPC). It covers all forms of international cooperation (institutional bilateral and multilateral relations, cross-border regional cooperation, cooperation on the preparation and implementation of scientific projects, cross-border mobility and collaboration on educational and training activities, and it includes principles for the individual cross-border cooperation among researchers). The strategy contributes to one of the important ambitions of the HIPC i.e. to increase its international visibility, recognition and performance in science. It increases HIPC's scientific excellence and contributes to financial sustainability of its growth. In that respect, the institute's management decided to support activities to intensify international cooperation between individual researchers, and to systematically identify and utilise new potential for cooperation in research and education with other scientific institutions in the EU and globally.

The strategy is rooted in the national strategy of the Czech Republic in research and development and the internationalisation of the RTD environment 2017-2020¹, respecting the principles laid down by the National Research & Development & Innovation (RDI) policy in the Czech republic 2021+², while the actions are based on the decision of the Institute board, the mission statement of HIPC as described in its Foundation Deed of the HIPC³, and are linked to the Strategy AV21⁴ of the Czech Academy of Sciences. It is expected that the strategy helps to leverage the HIPC scientific performance and its better integration to the European research and innovation area (ERA) by increasing the scientific level and capacities of HIPC through collaborative research with leading institutions in Europe and globally. International mobility of the HIPC staff will through extensive training in science-related issues increase the skills by exchanging experience and sharing good practices in science, project, and data management. To facilitate and intensify these processes the creation of an European office at HIPC is planned. All these measures will lead to increasing the societal relevance of HIPC research and contribute to several goals of the national RDI policy and the smart specialisation strategy (RIS3), which provides important justification of interventions from the EU funds in the 2021-2027 programming period. RIS3 intends on improving the quality of public research in particular in knowledge domains like advanced materials, nanotechnologies and biotechnologies. The RIS3 also aims at systemic measures to improve the quality and performance of public administration in the area of R&D, especially on developing strategic management of research, building institutional capacity and strategic intelligence in research organisations. HIPC is strongly committed to these national goals, and the overlap between the national policy objectives and the institute strategic targets creates huge potential for synergies.

¹<https://www.databaze-strategie.cz/cz/msmt/strategie/akcni-plan-mezinarodni-spoluprace-cr-ve-vyzkumu-a-vyvoji-a-internacionalizace-prostredi-vav-2017-2020?typ=struktura>

²<https://www.vyzkum.cz/FrontClanek.aspx?idsekce=913172>

³<https://www.jh-inst.cas.cz/sites/www.drupal/files/inline-files/Foundation-Deed%20.pdf>

⁴<https://www.avcr.cz/cs/strategie/vyzkumne-programy/prehled-programu/index.html>

The HIPC's strategy is designed such that it, based on extended systemic support of the cooperation with foreign partners, is embedded into the broader strategic vision of the HIPC to become a leader in excellent scientific research, and it leads to better formulation of scientific, infrastructural, ethical and legal standards in the institute, and to greater internationalisation of HIPC. The declared aim is to advance the position of HIPC in European and international research landscape, to contribute to further internationalisation of the domestic scientific environment, and to increase the share of international staff working at the institute. The strategy shall also contribute to strengthening of international exchange of academics in the domain of physical chemistry, supporting mobility of staff, and increase the attractiveness of HIPC by offering a lucrative scientific career start for talented international students and postdocs. It shall continue to build the perception of HIPC as an excellent and recognised scientific institution, being a renowned and trusted partner offering excellent skills and infrastructure in research. Last, but not least the objective is to support the HIPC researchers in establishing individual relations, to increased their participation and involvement in international research projects, while also strengthening the participation of international staff in HIPC coordinated projects. A dedicated professional support structure shall be developed to create an efficient system for submitting large international project proposals and enhance truly international cutting-edge research at HIPC.

2. Vision, priorities and objectives

The Heyrovský Institute of Physical Chemistry promotes the scientific legacy of the Nobel laureate, Professor Jaroslav Heyrovský, in fields related to physical chemistry. Over two hundred scientists, from promising young researchers to world-renowned experts, are engaged in ground breaking fundamental and applied research, as well as education. Theoretically and experimentally acquired insights into physical and chemical processes are important for energy production and storage, industrial catalytic processes, healthcare and protection of the environment. At the management level, the strategy implements the decision to further improve the management structure at HIPC, to institutionalise a support scheme to increase the quality and quantity of participation in EU and international programs by offering help in administrative, logistic and financial matters to the projects in preparatory and implementation phases. HIPC shall gain further competencies in international networking, project writing, and project management, while at the same time the administrative overload of HIPC research staff shall be reduced. An integral part of the institute mission is teaching and learning. The vision is that scientific originality, creativity and productivity of the institute will reach the level of excellence and the institute will not only become an active and visible element of the international scientific landscape pushing forward the frontiers of knowledge, but also a recognised partner in education and scientific training.

The first and main priority area is the focus on strategic institutional partnerships and cooperation with selected high-ranked universities and leading research institutions abroad. The focus shall build on the existing cooperation between scientists of the institute with colleagues from scientific institutions in the broader European region, but also overseas. Usually, these cooperations demonstrate themselves in joint publications and short mutual visits and are supported from running grants. At a higher level cooperation is formalised

through research and mobility projects that are covered by bilateral umbrella agreements or cooperation programs. These can come from the Ministry of Education, Youths and Sports⁵, the Academy of Sciences⁶, or from institutional contracts.

Another group is represented by collaborative projects within the EU framework programme H2020 and Horizon Europe (HEU). The formalised project consortia have the potential to be deepened and to evolve into new cooperation schemes. The cooperation and mutual trust within successful HEU projects can be promoted to institutional partnerships and shall be complemented by targeted search for new partner institutions along with selected thematic areas of research, which build the kernel of the HIPC competence base. Hereby, particular attention is paid to institutions in the neighbouring countries Austria, Germany, Poland, and Slovakia. The focus on the Central European meta-region and the institutional proximity allows intense and focused collaboration, vivid exchange of knowledge, effective and efficient sharing of capacities and resources. By enhancing the research portfolio of HIPC, it will impact all areas. In particular, it will:

- increase research excellence, resources and capacities of HIPC in all fields Physical chemistry;
- raise the reputation, research profile and attractiveness of HIPC and the research staff leading to new networking channels with other research organisations of the corresponding scientific orientation;
- create the perception of HIPC as an attractive working place, where excellent training and outstanding science is performed;
- improve the capability of HIPC to compete successfully for both national and international research funding in research and education;
- strengthen research management capacities and increase the skills of researchers, technical and administrative staff at HIPC;
- interlink HIPC with leading European universities and research organisations and intensify HIPC engagement in education;

The strategy is expected to add impact to future research by establishing sustainable inter-institutional relations and creating links leading scientists and institutions. First steps are already taken.

A memorandum was signed in October 2019 with Helmholtz-Zentrum Dresden-Rossendorf (HZDR) on strategic collaboration addressing some of the pressing challenges faced by modern-day industrialised society:

- How can energy and resources be utilised in an efficient, safe, and sustainable way?
- How can malignant tumours be more precisely visualised, characterised, and more effectively treated?

⁵ <https://www.msmt.cz/vyzkum-a-vyvoj-2/podpora-mezinarodni-spoluprace-ve-vavai>

⁶ <https://www.avcr.cz/cs/veda-a-vyzkum/mezinarodni-vztahy/podporovane-aktivity/>

- How do matter and materials behave under the influence of strong fields and in the smallest dimensions?

HZDR will collaborate with HIPC on international priority areas of frontier research in life and material sciences as well as energy and the environment.

Another good example of sharing research capacities is the attempt to connect NanoENVI.CZ to a pan-European network of research infrastructures in the domain of Nano-sciences.

Several projects funded by the European Commission (2015-2020) that have a prime role of strengthening HIPC capacities, including the frameworks of Coordination and Support Actions (CSA), Marie Skłodowska-Curie Actions Innovative Training Networks (MSCA-ITN), Research and innovation actions (RIA), and a Framework Partnership Agreement (FPA) are given in the table below:

Acronym	Title	Funding scheme
InRoad	Towards better Synchronisation of Priority Settings and Evaluation Mechanisms for Research Infrastructures Beyond National Relevance	CSA
StR-ESFRI2	Support to Reinforce the European Strategy Forum on Research Infrastructures	CSA
SUNRISE	Solar Energy for a Circular Economy	CSA
ENERGY-X	ENERGY-X: Transformative chemistry for a sustainable energy future	CSA
ELCOREL	Electrochemical Conversion of Renewable Electricity into Fuels and Chemicals	MSCA-ITN
PROTON	Proton transport and proton-coupled transport	MSCA-ITN
IMPACT	Ion-Molecule Processes for Analytical Chemical Technologies	MSCA-ITN
ShaleXenvironmentT	Maximising the EU shale gas potential by minimising its environmental footprint	RIA
GrapheneCore1	Graphene-based disruptive technologies	RIA
GRAPHENE FPA	Graphene-based revolutions in ICT and beyond	FPA

Of fundamental importance for the further competence growth at HIPC are projects under the Widening part of the EU Framework program. Here the the prestigious J. Heyrovsky ERA Chair project⁷ (GA No: 810310), awarded to the Institute in 2018, or the three recently submitted Twinning projects (NanoCAT, MembraMIET, and HexRad) have to be mentioned. These projects shall complement the newly established Grant office, which provides financial project management support, and shall the support to the entire project management.

In addition to the EC projects, one international project funded by the Czech Science Foundation together with the German Science Foundation (DFG) was carried out in collaboration between the Institute and the Biochemie-Zentrum (BZH) of Ruprecht-Karls-Universität Heidelberg entitled 'Exploring the structure-function relationship of membrane-

⁷ https://web.jh-inst.cas.cz/jh_grant/j-heyrovsky-chair

pore-forming FGF2 oligomers - a single molecule approach' (the principal investigator Prof. M. Hof). Moreover, bilateral funding schemes provided by the Czech Ministry of Education were extensively used for cooperating within international research area (including USA, Germany and Israel).

A third pillar in this priority is the adequate consideration of HR management. Stabilized international research environment at the institute has to be balanced with the positive impact of flexibility to the needs of designed mobility schemes for academics and postdocs. It is, and not least increasing the intensity and quality of scientific outcomes. By the commitment of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers in 2017, obtaining and striving to maintain the HR Excellence in Research Award motivates us to approach the standards of more developed EU countries and we developed a HR strategy of the HIPC⁸, which is currently being implemented. Several lessons learned on mobility, HR scouting, and strategic recruitment can be deducted from the MSCA Networks and the J. Heyrovský Chair project. These clearly demonstrate the benefits and impact of attracting researchers from global pool of top-class scientists. However, it also provided a feedback on limits and bottlenecks of the current HIPC situation.

This institutional cooperation framework will help to further develop the international profile of the HIPC as a valuable and recognised scientific institution strongly rooted in the RDI system in the Czech Republic and the Central European region, with a clear declared ambition to increase its share in contributing to targets and objectives of the European Research Area and Innovation (ERA). Scientific cooperation and international exchange will be based on common values, mutual respect, reciprocity, and fairness. The aim is to develop these partnerships in a sustainable manner and with a long-term perspective.

The objectives for this first priority area consist of:

Objective 1.1: Establishing a consolidated inter-institutional network allowing international cooperation among various scientific lines, but also including science training aspects, and sharing of good practices in science management. Screening of the existing cooperation at the institute and department levels.

Objective 1.2: Taking a participatory approach to the development of the European Research and Innovations area concept. Coordinating with the international partners on formulating, presenting and promoting opinions, both on the policy development and on concrete programme steps.

Objective 1.3: Closely collaborate with international partners in **sharing unique scientific infrastructure**, equipment and related services. A part of this objective is to fully enfold the capacity of the HIPC as a partner for international collaboration.

Objective 1.4: Attract talented students and early-stage researchers and provide together with international partners high-quality training in sophisticated scientific techniques in the broader field of physical chemistry. The mid-term perspective of this

⁸ <https://web.jh-inst.cas.cz/basic-page/human-resources-strategy-researchers-hrs4r>

objective is to intensify the scientific cooperation with one or the other foreign university working towards a jointly awarded doctorate.

The second priority area is directed to improve the positioning of HIPC in the European research area and in the global research domain by increasing the share and variety of international projects in the institute's portfolio. Science is in its intrinsic nature international, largely benefiting from cooperation in competition. Coopering and competing with the best bring huge impetus for research quality improvement, and this is one of the primary objectives of HIPC. In addition, the very recent developments have demonstrated that many of the current threats challenging our society require cooperation between institutions within and across scientific disciplines to be able to provide merit-based scientific solutions to pressing societal issues. International cooperation in research and development is a prerequisite to societal resilience and to the readiness to mitigate situations threatening our lifestyle. HIPC sees its role also here. The relevance of research performed at HIPC and the improvement of quality and portfolio of services is a long-term asset of the HIPC and will further strengthen its leading position at national scale. Strategic alliances with high-level institutions and collaborations with leading research teams will increase the research quality, relevance and competitiveness of HIPC at both the national and international scale.

The key objectives within this priority are:

Objective 2.1: Intensify the new and existing cooperation to strengthen the position of the HIPC by **seeking synergies of national and European research funding programs** and mechanisms, new ways to design organisational structures and/or incorporate initiatives to facilitate better and active HIPC participation in the development of ERA. To explore instruments including Teaming, Twinning, Joint Labs or Joint European Doctorates.

Objective 2.2: Using the established institutional partnerships prepare the basis for **intensifying cooperation on scientific projects** supported through the various National initiatives, European programmes (HEU) and initiatives (ERA-NETs, Flagships, etc.), and by participating in the identified relevant Research agenda actions (EOSC, Hydrogen, Plastic pirates).

Objective 2.3: To use the international cooperation activities to better position of the HIPC towards the **European Structural and investment funds (ESIF)** as implemented in the national programs and to envisage the use of those programs to strengthen its role in the national and European context.

The third priority area relates to administrative arrangements at HIPC with the asset to change the institutional culture and the perception of international cooperation and participation in international projects. International collaboration shall be promoted not only as a step on the individual career ladder but also as a contribution to the institute's development and branding. Individual research projects and project participations shall not be opportunity driven but rather designed to be aligned with the institute scientific mission.

Objective 3.1: **Utilise the potential of International advice and sharing of good practices** resulting from the cooperation with the foreign partner institutions and project it into concrete actions to fully unfold the research capacity of HIPC.

Objective 3.2: Strengthen the element of conceptual understanding of the need of positioning individual research projects into the overall institutional strategy, by recognising and by respecting the freedom of academic research, by the HIPC research staff when considering individual international engagements. A dedicated support structure shall prepare for the director`s board materials for decisions on various aspects of external relations of HIPC. The tools should include communication strategies, participation in the EC science policy making, exploit the nationals and foreign partners for policy positioning, support for the project drafting, management and reporting, support for international mobility, etc.

3. Implementation actions at the J. Heyrovský Institute

An important asset of strategic partnerships in international cooperation is to create the best possible conditions for researchers at HIPC to conduct cutting-edge research on relevant scientific topics, which are in line with the HIPC mission. This cooperation shall be participatory, allow sharing of knowledge and access to supranational infrastructures of the concerned partners. The basis shall be the creation and extension of well-functioning scientific institutional networks allowing bilateral and multilateral cross-border collaboration in research and research related activities. Each of the priority objectives is further elaborated into concrete actions to meet the set goals.

The wider strategic perspective of this inter-institutional cooperation is the aim of maximising the benefits for all the partner institutions in solving scientific problems and answering pressing societal challenges. It shall contribute to better positioning of the partners at national, European and global scale increasing their contribution and impact in the well-functioning European research area.

Several actions shall be taken by the HIPC to initiate the process.

Action 1: Screening of existing levels of international cooperation (including international and EU projects), e.g. its scope, format (informal or legally formalised e.g. formalised by a consortia agreement) extent, etc. A **properly designed template** (very light procedure) will be created to actively collect the information on current and desired cooperation from all the institute scientific departments to be summarised at the institutional level. This shall consist of information on:

- Ongoing cooperation of the institute with international organisations or foreign partners
- Membership of the institute or individuals in international / European organisations
- Participation of institute staff in formalised and informal scientific networks (conferences, program committees, advisory bodies, etc.)
- Joint scientific projects within international or national support schemes with international partners involved (EU Framework program, NIH, etc.)
- Participation in international exchange programs (staff, students, etc.)

The purpose of this action is to set a baseline, to be able to assess the potential of these existing cooperation to be promoted to the institutional level. The **resulting list/database** will be complemented by the already existing institutional partnerships and will be processed by

the dedicated entity (vide infra Action 3). This entity will prepare material for the initial discussion at the Board of the institute. Based on the discussion/decision several layers/levels of the cooperation might be identified according to the capacity to grow towards an institutional partnership.

Contribution to:

- Priority 1- Strategic partnership with foreign scientific institutions
- Priority 2 - Improve the positioning HIPC in the ERA
- Priority 3 - Improve the HIPC administrative support to international cooperation

The current level of the action implementation during 2018-2021 based on the continuous monitoring

Priority 1

- The strategic collaboration based on the memorandum of understanding signed in October 2019 with Helmholtz-Zentrum Dresden-Rossendorf (HZDR) has been heavily influenced by the COVID-19 outbreak. An already ongoing project administrator visit has been cancelled and most of the planned activities were postponed.
- Further strategic collaboration was established with several European universities and other research institutions based on 1) the Memorandum of Understanding – e.i. University of Regensburg, and University of Innsbruck; 2) the International Agreement – e.i. Helmholtz Zentrum Dresden Rossendorf, University of Silesia in Katowice, Leibniz Institute of Surface Engineering, and The Eaton European Innovation Center; and 3) several Consortium agreements related to the the international project's cooperation.

Priority 2

- A screening of existing of the institute internal documents for the period 2017-2021 has been performed with the aim to identify already existing elements of international collaboration. The summary of the findings is presented in **Annex 1**.
- HIPC researchers are members of various international organisations (such as journals committees, research and supervisory boards of grant agencies, etc.), particularly: Biophysical Society – Professional Opportunities for Women Committee, COST Scientific Committee, SUNERGY – Energy Research Association Steering Committee, EOSC Executive Board, EOSC AISBL Task forces, ERAC Steering Board, ERA Forum, ESFRI chair, Organic and Biological Electrochemistry Division Executive Committee, ECS Heinz Gerischer Award committee, Electrochemical Society Europe Section, International Society of Electrochemistry vice/chair, French CosmOrbitrap Consortium, Electrocatalysis editorial board, ISE - Executive Secretary, and Electrochemical Science Advances editor. During 2018-2021, the numbers of the new memberships increased, respectively **19, 22, 22, and 26**.
- Participation in scientific international projects within international and national support schemes with international partners involved followed increasing trends (numbers of new projects: **2018 - 11; 2019 - 14; 2020 - 18, and 2021-21**). The highest participation of HIPC scientists was found for the bilateral projects supporting international cooperation (e.g. GA CR, TA CR, MŠMT-AMVIS (30), followed by the

participation in EU Framework programme Horizon 2020 (16), Horizon Europe (2). This is followed by participation in other schemes ESA (3), ESIF (6), ERC.CZ (1), COST - 2, others (4).

- Seven HIPC departments participated in international exchange programs, mainly in ERASMUS, Czech International Exchange programs (e.g. MŠMT), and in COST actions.
- Six out of 13 HIPC departments including the Center for innovations in the field of nanomaterials and nanotechnologies shared with foreign visitors unique scientific infrastructure, equipment and related services (Annex 1).

Priority 3

- A simple and easy to use scheme that allows overseeing the Grant applications has been added to the HIPC intranet. It is operated by a dedicated person and consists of a registry of projects awarded to the institute staff. It allows the addition of new project schemes and supports a HIPC internal approval mechanism at the various levels, including a brief financial assessment. The system is still under development and various measures allowing to aggregate information on the successful project applications and to extract information from the external assessment in order to improve the future project preparations are under discussion. The final aim is to have an operational database that allows through effective support of the project portfolio management at HIPC to further develop international cooperation in RDI.

Action 2: Establishing simple but clear guidelines for the HIPC staff on international cooperation matters. The purpose of these guidelines is twofold: (i) to promote better understanding of the role and the HIPC strategy in international cooperation, and (ii) to provide guidance through internal rules and processes at the HIPC for those scientists who want to get engaged in international cooperation activities at the different levels (initiating a joint scientific, educational, or exchange project, getting into contractual negotiations with international partners, i.e. drafting / approving consortia agreements, resolving IPR issues, etc.).

Contribution to:

- Priority 2 - Improve the positioning HIPC in the ERA
- Priority 3 - Improve the HIPC administrative support to international cooperation

Current level of the action implementation: (31. 1. 2022)

- A screening and ongoing process

Action 3: The creation of a dedicated team (possibly International relations and Project support office or External affairs office), which will oversee the implementation of the international strategy. Its task will be to effectively coordinate all initiatives so that they meet HIPC needs and new trends in international development, creating a permanent dedicated support structure within the institute and maintaining skills for supporting participation in diverse collaborative actions (activities related to project preparation and management,

mobility and exchange, etc.) intensifying cooperation on scientific projects, including negotiation skills and building competences in long term strategic planning and active participation in national and international science policy discussions and consultations. The team will continuously

- implement the international strategy under the guidance of the Director's Board
- seek synergies of national, European programs and the European Structural and Investment Funds (ESIF) with the aim to improve the HIPC project portfolio
- perform a systematic improvement of the screening mechanism of existing collaboration and funding opportunities in multilateral scientific programmes (HEU, EU and national programmes ESIF, ESF, EUROHORCS, ERA-Nets, DFG Forder programme) or bilateral inter-institutional support schemes
- provide administrative support to all various kinds of international cooperation be supportive in establishing and maintaining institutional partnerships
- co-design the HIPC applications for large scale international grants and projects (coordinating MSCA ITN networks, Teaming, Twinning with a vision to progress towards the flagship type projects), including their management, and support HIPC researcher's in other bilateral and multilateral projects based on synergic effects of national funding
- provide advice on budgeting and specify financial requirements of these none scientific activity including sharing HIPC's unique scientific infrastructure
- participate in policy making through discussions with relevant ministries concerning the preparation of RDI support programs including Euraxess, repatriation, other mobility schemes, support for infrastructures, preparation of calls for infrastructures, operational programs, structural funds.
- participate in preparations of national and institutional (academic) positions towards the EU framework program and annual work programs
- communicate with all relevant actors including international offices of foreign institutes and universities to promote the HIPC capabilities and capacities in RDI, seeking networking opportunities
- support HIPC's active involvement in the social discourse and the search for solutions to global economic, social and environmental issues (SDG, Missions, Strategy AV21)
- participate in increasing the knowledge and competencies of the HIPC staff in areas related to international cooperation and offering supportive services to complementary IR activities (MSCA individual fellowships, JED Joint doctoral programs, Summer schools, international conferences, Mobility programs / projects, welcome office)
- Communication strategy, Communication with the EC, national and foreign partners, positioning for participation on policies, support for the project drafting, management and reporting, support for international mobility, etc.
- Collaboration with the CZELLO office in Brussels (short-term internships, project administration, engagement promotion, networking, gaining experience)
- Educational and networking training offered by the Division of International Cooperation of the Czech Academy of Sciences.

- Opportunities for cooperation in the field of European and international research, development and innovation

Contribution to:

- Priority 2 - Improve the positioning HIPC in the ERA
- Priority 3 - Improve the HIPC administrative support to international cooperation

Timeline: end 2022

Action 4: Mobility based on international cooperation. Mobility in research beyond national borders includes a broad spectrum of diverse activities. The main focus within this Strategy is mobility, which allows the HIPC either to benefit from acquired knowledge and skills, or to support young scientists at the start of their career path. Though in general, this involves fostering both cooperation and competition among individuals, teams, networks and institutions, this strategy focuses on the collaborative path mainly.

Assistance to the foreign researchers in overcoming administrative burdens integrated into the processes of recruitment and HR management. A part of the recruitment process is the assistance with the necessary formalities and documents. The details of this support will be described in continuously updated methodologies for mobility and recruitment of foreign scientists.

Contribution to:

- Priority 2 - Improve the positioning HIPC in the ERA

Timeline: end 2022

Action 5: Establishing institutional relations to foster competencies and exchange of experience. Among others, this is the HIPC's contribution to the creation of an (ERA). Scientific excellence, fairness, openness and inclusiveness shall be hereby the guiding principles. CZELO International advice and sharing of good practices Continuous creation and maintenance of optimal framework conditions for HIPC researchers to freely engage in international activities.

4. Timeline and measurable outcome

The Strategy and all the measures are complementary and form part of an institution's overall policy to increase the level of research quality, improve the reputation, attractiveness, and pursuit of excellence of HIPC at the global scale. The Strategy will be instantly monitored and reviewed once a year. The results will be periodically discussed and approved by the Director's Board. In 2023, it will be assessed with regard to its meeting of individual objectives.

The performance indicators in measurable goals are:

- To achieve two new strategic institutional partnership agreements⁹ signed by HIPC by the end 2023 (currently 2018-2021: International Agreements - 13, Consortium Agreements - 6, and Memorandum of Understanding - 3)
- To achieve 10% increase of the number of international PostDocs working at HIPC by the end of 2023 compared with previous year (in 2021 - 27 PostDocs).
- To achieve 10% increase of internationally funded projects with HIPC participation compared with previous year (in 2021 – 21 international projects)
- To increase the share of Horizon Europe projects by 3 new projects by the end of 2023 (in 2021 - 3 projects from H2020 or Horizon Europe).
- To achieve one ERC fellowship project at HIPC (in 2021 - 0) - long term aim

⁹ Strategic institutional partnership agreements includes International Agreements, Consortium Agreements, Memorandum of Understanding

Annex 1 (contains tables of all the answers of the departments and Centre)

All the questions asked are displayed below:

1. Which international projects did you participate in during the last 4 years ?
2. In case of your international project participations within the last 4 years, what was your role in the project/s?
3. How many international project proposals did you submit during the last 4 years?
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)
5. How many PostDocs were working in your department during the last 4 years?
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)
7. Has your international cooperation been formalised?
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)
10. How many other international events have you been participated in in the last 4 years?
11. Is there instrumentation been shared with the international visitors during the last 4 years?
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)

Table no. 1 – Department of Theoretical Chemistry

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018	2	1						
2019	2	1						
2020	2							0
2021	2							0
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018	1	1						
2019	1	1						
2020	1	1						

2021	1	1						
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	1							
2019								
2020								
2021	1							
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018		2						
2019		1	1					
2020	1	1						
2021	1	2						
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2018	1		1					
2019	1		1					
2020								
2021								
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)								
2018	35							
2019	33							
2020	10							
2021	6							
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)								
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No				
2018	1							
2019				0				
2020				0				
2021				0				
10. How many other international events have you been participated in in the last 4 years?								
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other		
2018								
2019								
2020								
2021	1							

12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)	
2018	2
2019	4
2020	1
2021	0

Table no. 2: Department of Spectroscopy

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018	2							1
2019	1							
2020	1			1				
2021	2			2				
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018	1	1						
2019	1	1						
2020	1	1						
2021	1	1						
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	1							
2019								
2020								
2021	1							
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018				1				
2019				1				
2020				1				
2021				1				
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018								

2019				2		
2020				2		
2021				2		
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)						
	Pre-graduates	Early-stage researcher	Advanced researcher	None		
2018				0		
2019			1			
2020				0		
2021				0		
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018	16					
2019	17					
2020	3					
2021	1					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018	2					
2019				0		
2020				0		
2021				0		
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018						1
2019						
2020						
2021						

Table no. 3: Department of Biophysical Chemistry

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 - -- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018	0	1				1		
2019	1	1	1			1		

2020	2	2	1			2		1
2021	1	2				2		1
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018		2						
2019	1	4						
2020	2	7						
2021	2	7						
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 - -- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	1	1	1					
2019		1	1				1	
2020	1	1				1		
2021							1	
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018	3	3	1					
2019	3	3	1					
2020	3	1	2					
2021	3	1	1					
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2018		1						
2019		1						
2020		0						
2021		1						
7. Has your international cooperation been formalised?								
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other			
2018				0				
2019	1	1						
2020		1		0				
2021		1		0				
8. How many international conferences have you and your colleagues in the department participated in during the last 4years? (international conference held abroad or in the Czech Republic in F2F or online format)								
2018	34							
2019	31							
2020	14							
2021	6							

9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018				0		
2019				0		
2020				0		
2021	1					
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018		6		10	7	
2019		6		10	7	
2020		4		2	5	
2021		11		4	5	
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)						
2018	7					
2019	6					
2020	8					
2021	13					

Table no. 4: Department of Structure and Dynamics in Catalysis

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 - -- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018								
2019	1							
2020								0
2021	1							0
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018								
2019		1						
2020								
2021		1						
3. How many international project proposals did you submit during the last 4 years?								

	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 - -- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	2							
2019								
2020	1							
2021								
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018		1						
2019	2	1						
2020								
2021								
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)								
2018	23							
2019	24							
2020	0							
2021	2							
10. How many other international events have you been participated in in the last 4 years?								
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other		
2018								
2019				1	1			
2020					2			
2021								
11. Is there instrumentation been shared with the international visitors during the last 4 years?								
catalytic apparatus with MS detection								
in-situ FTIR apparatus								
Diffuse reflectance UV-Vis-NIR spectrometer								

Table no. 5: Department of Molecular Electrochemistry and Catalysis

3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 - -- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018								
2019								
2020								
2021	1							
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					

2018				1		
2019		1		1		
2020		1				
2021		1		1		
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)						
	Pre-graduates	Early-stage researcher	Advanced researcher	None		
2018						
2019						
2020	1					
2021	1					
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018	20					
2019	19					
2020	8					
2021	12					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018	1	1				
2019	2	3				
2020		2				
2021	3	2				
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satellite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018		3				
2019		3	1	1	1	
2020		3				
2021		2				
11. Is there instrumentation been shared with the international visitors during the last 4 years?						
EPR-spectroelectrochemistry						
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)						
2018	1					
2019	2					
2020	4					
2021	2					

Table no. 6: Department of Electrochemical Materials

1. Which international projects did you participate in during the last 4 years ?

Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018								N/A
2019								0
2020								2
2021	1							0
2. In case of your international project participations within the last 4 years, what was your role in the projects/s?								
Start of the project:	Coordinator	Project partner	Other					
2018								
2019								
2020		1	1					
2021			1					
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018		1						
2019		1						
2020		2						
2021	1		2					2
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018			1					
2019								
2020								
2021								
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018		1						
2019			1					
2020			1					
2021								
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2018			2					
2019			5					
2020								
2021								

8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018	26					
2019	33					
2020	3					
2021	11					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018		1	1			
2019			1			
2020			1			
2021						
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018		3				
2019					1	
2020		1				
2021		1		1	1	
11. Is there instrumentation been shared with the international visitors during the last 4 years?						
Raman spectrometer, AFM, TERS						
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)						
2018	3					
2019	1					
2020	1					
2021	1					

Table no. 7: Department of Electrochemistry at the Nanoscale

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018	2							
2019								
2020								
2021	1							
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								

Start of the project:	Coordinator	Project partner	Other					
2018			1					
2019								
2020								
2021			1					
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	0							1
2019	2							
2020	2							
2021	4							
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018			2		5			
2019			2		4			
2020			2		2			
2021			3		1			
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018		2	1					
2019		1						
2020	1	1						
2021	1	1						
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2018	4		2					
2019	2		1					
2020	2							
2021	1		1					
7. Has your international cooperation been formalised?								
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other			
2018				0				
2019	1							
2020			1					
2021	1							
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)								
2018	29							

2019	32					
2020	13					
2021	26					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018		2				
2019		2	1			
2020		1				
2021		2	1			
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018		3		3	1	1
2019				1	1	
2020						1
2021						
11. Is there instrumentation been shared with the international visitors during the last 4 years?						
STMBJ and MCBJ instruments						
3D printed electrochemical instrumentation						
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)						
2018	2					
2019	3					
2020	3					
2021	3					

Table no. 8: Department of Chemistry of Ions in Gaseous Phase

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018								
2019		1						
2020								
2021	1							1
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018								

2019								
2020								
2021		1						
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018								
2019								
2020	1							
2021								
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018					3			
2019					5			
2020					2			
2021					2			
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018			1					
2019								
2020								
2021		1	1					
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2018								
2019	2		1					
2020								
2021	2							
7. Has your international cooperation been formalised?								
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other			
2018								
2019								
2020	1							
2021								
8. How many international conferences you and your colleagues in the department participated in during the last 4years? (international conference held abroad or in the Czech Republic in F2F or online format)								
2018	15							
2019	5							

2020	1			
2021	0			
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)				
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No
2018			1	
2019	1			
2020				0
2021				0
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)				
2018	1			
2019				
2020				
2021				

Table no. 9: Department of Low-dimensional Systems

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018							N/A	
2019							1	
2020							0	
2021							0	
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018	1		1					
2019								
2020		3	4					
2021			2					
7. Has your international cooperation been formalised?								
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other			
2018				0				
2019				0				
2020	1							
2021		1						
8. How many international conferences have you and your colleagues in the department participated in during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)								

2018	15					
2019	11					
2020	1					
2021	2					
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018		1				
2019						
2020						
2021						

Table no. 10: Department of Dynamics of Molecules and Clusters

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018								
2019		1						
2020		1						
2021		1						
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018								
2019		1						
2020		1						
2021		1						
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018	1							
2019	2	2						
2020		2						
2021			2					
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018	1							
2019	1							
2020	1							
2021	2							

5. How many PostDocs were working in your department during the last 4 years?						
	Czech	EU	Others			
2018			2			
2019		1	1			
2020						
2021			2			
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)						
	Pre-graduates	Early-stage researcher	Advanced researcher	None		
2018			2			
2019			2			
2020			1			
2021						
7. Has your international cooperation been formalised?						
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other	
2018				0		
2019	1		1			
2020				0		
2021	1		1			
8. How many international conferences have you and your colleagues in the department participated in during the last 4years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018	13					
2019	15					
2020	2					
2021	2					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018	1					
2019				0		
2020				0		
2021				0		
10. How many other international events have you been participated in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018				2	2	
2019				2	2	
2020				3	2	
2021				4	3	

11. Is there instrumentation been shared with the international visitors during the last 4 years?	
Cluster beam setup (resp: M. Farnik)	
DEA VMI setup (resp: J. Fedor)	
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)	
2018	2
2019	2
2020	2
2021	2

Table no. 11: Department of Computational chemistry

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018								
2019								
2020	1							
2021	1							
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018								
2019								
2020		1						
2021			1					
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018								
2019								
2020	1							1
2021								
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018								
2019					1			
2020								
2021								
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					

2018		1				
2019		3				
2020		2				
2021		6				
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)						
	Pre-graduates	Early-stage researcher	Advanced researcher	None		
2018		2				
2019	1	2				
2020	1	2				
2021		2				
7. Has your international cooperation been formalised?						
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other	
2018	1					
2019	1					
2020	2					
2021	2					
8. How many international conferences have you and your colleagues in the department participated in during the last 4years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018				15		
2019				15		
2020				1		
2021				0		
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018				0		
2019	1					
2020				0		
2021				0		
10. How many other international events have you been participated in in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018				2	1	
2019				2	2	
2020				1	1	
2021				1	1	

12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)	
2018	N/A
2019	2
2020	2
2021	2

Table no. 12: Department of Nanocatalysis

1. Which international projects did you participate in during the last 4 years ?								
Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2018		1						
2019		2						
2020		1						
2021								
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2018	1							
2019		1						
2020								
2021								
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 --- Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2018								
2019								
2020								
2021			1					
4. Have your department participated in international staff/student exchanges program during the last 4 years? (MSCA is not considered)								
	Yes - EU program	Yes - Global program	Yes - Czech - international exchange	No	Other			
2018								
2019								
2020								
2021					1			
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2018								
2019								
2020								

2021						1
7. Has your international cooperation been formalised?						
	Yes - International / interinstitutional Agreement	Yes - Consortium Agreement	Yes - Memorandum of Understanding	No	Other	
2018		1				
2019		1				
2020						
2021						
8. How many international conferences have you and your colleagues in the department participated in during the last 4years? (international conference held abroad or in the Czech Republic in F2F or online format)						
2018	9					
2019	2					
2020	3					
2021	11					
9. Have you (or your colleagues) organised, or been involved in the organisation of an international conference held during the last 4 years? (international conference held abroad or in the Czech Republic in F2F or online format)						
	Yes main organiser	Yes - coorganizer	Yes - other (specify)	No		
2018				0		
2019				0		
2020				0		
2021	1					
10. How many other international events have you been participated in the last 4 years?						
	Summer schools	Workshop / Seminar	Satelite events to conference	Visits to labs/institutions	Invited lecture at the host team	Other
2018						
2019		1				
2020						2
2021						
12. Have you or your department been a member of international organisations? (e.g. journals committees, research and supervisory board of grant agencies, etc.)						
2018	1					
2019	2					
2020	3					
2021	3					

Table no. 13: Center for innovations in the field of nanomaterials and nanotechnologies (since 2020)

1.Which international projects did you participate in during the last 4 years ?
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Start of the project:	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	ERC	Other
2020	1							
2021	2							
2. In case of your international project participations within the last 4 years, what was your role in the project/s?								
Start of the project:	Coordinator	Project partner	Other					
2020	1							
2021	2							
3. How many international project proposals did you submit during the last 4 years?								
	International bilateral cooperation (e.g. GACR, TACR, MSMT AMVIS)	Horizon 2020 -- - Which scheme ?	Horizon Europe	ESA	NIH	ESIF	Exchange european program	Other
2020	1							
2021	1		1					
5. How many PostDocs were working in your department during the last 4 years?								
	Czech	EU	Others					
2020		2						
2021								
6. How many other international colleagues visited your department for collaborative project during the last 4 years? (students and PostDocs are not considered)								
	Pre-graduates	Early-stage researcher	Advanced researcher	None				
2020								
2021			1					
11. Is there instrumentation been shared with the international visitors during the last 4 years?								
FTIR and UV/vis spectrometers								
electron microscope								
accelerated weathering device								
photocatalytic set-up								