*The **CREA**tion of the Department of Physical Chemistry of Biological Sys**TE**ms [CREATE]*

666295 — CREATE — H2020-WIDESPREAD-2014-2015/H2020-WIDESPREAD-2014-2

Report on sustainability

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1. Introduction

The overall objective of the CREATE project was **to unlock, develop and extend research potential of the Institute of Physical Chemistry, the Polish Academy of Sciences** (IPC) through establishing within the Institute a new Department of Physical Chemistry of Biological Systems, led by reputable scientist, specialist in biology, or linked biology and chemistry/or physics. Undertaken actions were designed **to reinforce excellent research on the boarder of disciplines chemistry/physics and biology/medicine** and **to establish partner relations with international scientific units**, in particular – from the European Research Area.

On the course of the project we have implemented various measures to improve durability of the effects of the project and maintain them after the project completion (project sustainability). These actions include:

No.	Measures aimed at the maintanance of the project's effects	No. of related WP
1.	**Creation of the permanent Department within the structure of IPC**	WP1, WP2
2.	**Sending talented PhD graduates to prominent biological lab for secondments**	WP2
3.	**Establishing permanent cooperation and strong strings with ERA institutions**	WP3, WP4
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7.	**Second-level sustainability management**	WP7
8.	**Implementation of the provisions of *the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers***	N/A

This document aims to summarize and assess the activities taken to assure project sustainability and forecasts long-term effects related with the CREATE project.

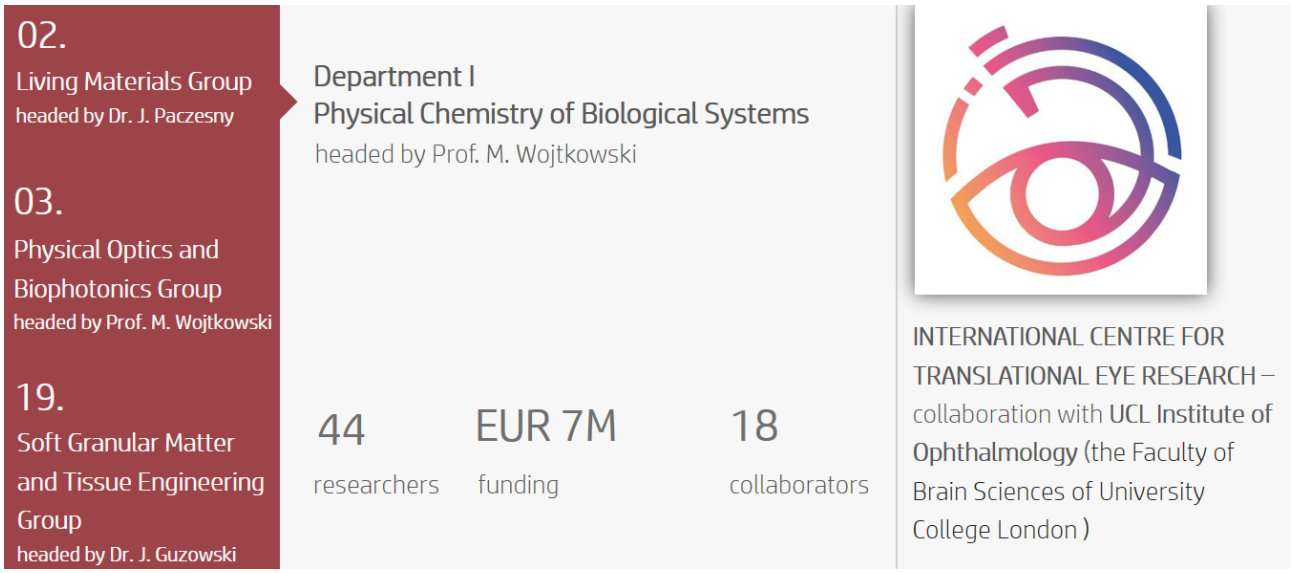
In the first part of the document we explain measures aimed at sustaining project's effects, describe the extent to which we have managed to implement them and assesse their effectiveness in terms of project's sustainability; in the second – we demonstrate further plan to maximize effects achieved under the CREATE project.

2. Measures undertaken on the course of the project aimed at maintaining its effects

2.1 Creation of the permanent Department within the structure of IPC

Professor Maciej Wojtkowski selected for the position of the ERA Chair holder set a new department within the structure of IPC, i.e. the Department of the Physical Chemistry of Biological Systems. Under this department 3 new research groups were further set, one headed by Professor Wojtkowski himself. They employ 44 researchers total. Up to now the research groups from the Department of Physical Chemistry of Biological Systems managed to obtain research funding of EUR 7 m. for their exclusive use. Besides that, prof. Wojtkowski gained additional funding of almost EUR 9 m. for setting a new centre – International Centre for Translational Eye Research. This entity is dependent from IPC. However, according to the funding agency requirements, it was separated from the Department of Physical Chemistry.

The new research groups collaborate with 18 partner organisations on regular basis.



The groups are focused on doing research on the edge of biology and chemistry or biology and physics. The research pursued by these new research group is as follows:

No.	Group name	Head
2.	**Living matterials**	**Dr. Jan Paczesny**
Scope of research: The main idea, which unifies the research of the group, is to create a connection between biology and material chemistry. Such a connection can be accomplished in at least two ways: 1) by using natural building blocks, perfected by evolution (biomolecules, viruses, whole organisms) to prepare functional materials or 2) applying knowledge of physical chemistry, material engineering and nanotechnology to create modern nanomaterials that can be used in biology and medicine.		
3.	**Physical Optics and Biophotonics Group**	**Prof. Maciej Wojtkowski (ERA Chair holder)**
Scope of research: The main research expertise of the group focuses on the fundamental physical aspects of optical imaging, the development of novel optical imaging methods and demonstration of their applications to biology and medicine. The core competence of POB is in the comprehensive development of new optical methods combining low coherence interferometry, advanced spectroscopy and fluorescence. This expertise includes ability of fundamental – physical description of methods; designing, construction, and optimization of ergonomic set-ups; development of novel data processing and data		

acquisition software tools.		
19.	**Soft Granular Matter and Tissue Engineering**	**Dr. Jan Guzowski**
Scope of research: The group studies soft granular materials - in particular dense emulsions, foams and microhydrogels - for applications in fabrication of complex microcapsules and scaffolds for 3D cell culture. They use microfluidics to generate and control such structures and develop new techniques of 3D printing using biomaterials, including printing of granular or porous structures, and techniques of 3D cell- and tissue culture in vitro.		

Setting 3 new research groups under the auspices of the ERA Chair holder will allow to consolidate research on the boarder of disciplines, started by Professor Wojtkowski. It should also be mentioned, that all three groups represent applicable research and their research will contribute to development of new intelligent materials including those for medicinal use, new diagnostic tools and therapies.

In the subsequent years, we expect an increase of the no. of new research groups set under the Department of Physical Chemistry of Biological Systems. The new groups will focus on supplementary research to the POB group (led by Professor Wojtkowski), particularly – designing new devices and materials serving medical diagnostics. We believe that setting satellite research groups gathered in a single department led by the ERA Chair holder will result in strengthening IPC transition into a research organisation focused on the research on the cutting-edge of biology/medicine and chemistry/physics. This is in line with the initial assumptions underlying the CREATE proposal, i.e. applying IPC well developed methods in physical chemistry to the biology-inspired fields (e.g. biotechnology).

2.2 Secondments of PhD graduates to prominent biological lab

Under the CREATE project the ERA Chair holder has selected 33 persons from IPC to go on lab visits for up to 3 months. Some of them were selected basing on the submitted proposals (competition “Lab visits under the CREATE projects”). The statistics of outgoing visits are presented below:

Reporting period	No. of PMs broken into funding sources			No. of outgoing persons
	CREATE	Polish Ministry for science	Others	
1	0.00	0.00	0.60	2
2	1.92	0.00	0.00	2
3	20.41	23.25	0.00	29
TOTAL	**22.32**	**23.25**	**0.60**	**33**

These visits brought a bit different effect then previously assumed. One person who went for the lab visit opened own research group (Dr. Andrzej Foik opened an Ophthalmic Biology Group under ICTER). In other cases, the visit was a valuable experience but mainly aimed at learning new research techniques and starting a collaboration with external research unit. This is valuable and prognosticates good results in the future.

2.3 Collaboration and stings with ERA institutions

One of the tasks of the ERA Chair holder was to reinforce IPC cooperation with reputable research units and establish new or extend current collaboration with institutions carrying out complementary research. Undertaken actions resulted in signing 4 cooperation agreements

1. **State Key Laboratory of Medicinal Clinical Biology, Nankai University, China**

   Timeframes of collaboration: 2017-2021

   Scope of collaboration: *joint research aimed at the application of physical chemistry to medicinal biology, molecular biology, biochemistry; submitting applications for joint grants; promoting exchange of academics, researchers, information and by developing scientific collaboration resulting in joint publications.*

2. **Department of Pharmacology, Case Western Reserve University School Medicine, Cleveland, USA**

   Timeframes of collaboration: 2017-2021

   Scope of collaboration: *joint research aimed at the application of optics, optical engineering and physical chemistry in medicinal biology, molecular biology and biochemistry especially in projects related to two photon vision and two-photon retinal imaging; applying for joint grants; promoting exchange of academics, researchers, information and by developing scientific collaboration resulting in join publications.*

3. **University College London, United Kingdom**

   Timeframes of collaboration: 2019-31 December 2023[1]

   Scope of collaboration: *Implementation of the joint project funded by the Foundation for the Polish Science, i.e. International Center for Translational Eye Research (ICTER, International Research Agendas Programme). UCL participates in the project through the Institute of Ophthalmology (IoO-UCL) acting as the foreign strategic partner. IPC is as an implementing unit of ICTER.*

Besides these formal collaborations, the ERA Chair holder initiated joint research projects with excellent research units which won external funding:

"Dioscuri Centre for Physics and Chemistry of Bacteria" **Research partner organisations: Evolutionary Theory Department at Max Planck Institute for Evolutionary Biology in Plön**		
Source of funding: DIOSCURI, National Science Centre, Poland	**Project timeframes:** 01/10/2020–30/09/2025	**Obtained funding:** EUR 1,625,000
"International Center for Translational EYE Research (ICTER)" **Research partner organisations: Institute of Ophthalmology at University College London**		
Source of funding: INTERNATIONAL RESEARCH AGENDAS PROGRAMME (IRAP), Foundation for Polish Science, Poland	**Project timeframes:** 01/07/2019–31/12/2023	**Obtained funding:** EUR 8,083,002[2]
"IMaging-based Customised EYE diagnostics (IMCUSTOMEYE)" **Research partner organisations: University of Liverpool, National University of Ireland Galway, University College London**		
Source of funding: Horizon 2020	**Project timeframes:** 01/01/2018-31/12/2021	**Obtained funding:** EUR 5,822,077[2]

[1] UCL is a partner of IPC under the ICTER project which ends 31/12/2023. The project progresses well so the agreement will possibly be prolonged for 5 more years because of the Polish funding agency declaration to extend the project duration from 54 months to 10 years.

[2] EUR exchange rate: 4.33 PLN.

Taking into account that the collaboration established by the ERA Chair holder resulted - up to now - in joint research projects of a value of EUR 15.5 m. we assess that adopted measures were well designed and fitted their purpose. The lengths of the above-mentioned projects also confirm durability of the effects of the CREATE project.

2.4 Collaboration with business entities

On the course of the CREATE project the ERA Chair holder concluded one long-term collaboration agreement with the company, i.e.:

Oculomedica, Specialized Ophthalmology Center, Bydgoszcz, Poland

Timeframes of collaboration: 2019- (indefinite)

Scope of collaboration:

- *Joint research projects (in particular, research and implementation projects focused on search for innovative solutions and products, making prototypes of machines and devices, expertise, analyses) and joint grant applications.*
- *Specialist courses, trainings, consultations (in particular in a didactic field). Short-term internships or study visits for employees of both parties.*
- *Organization of conferences, seminars or exhibitions, joint participation in conferences and external symposia.*

Besides, four new joint research projects with the participation of the companies were elaborated. They won support of the external funding agencies:

"Two photon vision and two photon eye imaging (2x2-PhotonVis)"		
Source of funding: TEAM-TECH, Foundation for Polish Science	**Project timeframes:** 01/12/2017–30/11/2020	**Obtained funding:** EUR 464,850
Business partner organisations: ***FLUENCE*** – a company developing cutting-edge all-fibre femtosecond lasers that are extremely stable and immune to shock. The company aims to fill-in in the long-standing market gap of truly service-free femtosecond lasers for science, industry and medicine. ***AM2M*** – a company that develops novel solutions or devices in biomedical and industrial applications, based on a unique experience in advanced optical methods. The company's main field of activity is developing non-invasive methods of imaging tissue sections in vivo, particularly optical tomography OCT. ***POLGENIX*** – a biotech company aiming to encompass two areas: 1) Drug discovery targeting G protein-coupled receptors (GPCRs) to treat common blinding diseases, and 2) Innovative high-resolution retinal imaging for ophthalmic drug discovery.		
"BacterOMIC - development of systems for comprehensive information on antibiotic susceptibility of bacteria"		
Source of funding: TEAM-TECH, Foundation for Polish Science	**project timeframes:** 01/05/2017–31/07/2019	**Obtained funding:** EUR 869,700[3]

[3] EUR exchange rate: 4.33 PLN.

Business partner organisation:

BacterOMIC – a company that develops technological projects for medical diagnostics and healthcare. BacterOMIC technology delivers the first fully comprehensive Antibiotic Susceptibility Testing (AST) panel. It provides the solution to one of the biggest health threats in the world – antibiotic resistance.

"IMaging-based Customised EYE diagnostics (IMCUSTOMEYE)"		
Source of funding:	**Project timeframes:**	**Obtained funding:**
Horizon 2020	01/01/2018-31/12/2021	EUR 5,931,669

Business partner organisation:

Moorfields Eye Hospital NHS Foundation Trust – Moorfields Eye Hospital has a reputation as a centre of excellence for providing ophthalmic care to private patients from the UK and worldwide. For over 200 years, Moorfields has pioneered research and delivered visionary eye care, is considered the world's leading destination for expert eye treatment.

Fernández-Vega Ophthalmological Institute – an international monographic eye hospital founded 125 years ago. It serves 100.000 patients/year and performs 8.000 surgeries per year.

OCULUS – Oculus Optikgerate GmbH was funded over 120 years ago, and since then, has been developing sophisticated technology-based instrumentation for eye-care. Oculus is a manufacturer of an extensive range of ophthalmological diagnostic instruments, with a primary focus on innovative, high-quality performance imaging devices for the anterior segment, with novel diagnostic possibilities.

2EyesVision – a spin-off company of the Spanish Research Council, founded in 2015, specialised in developing miniaturised devices for the ophthalmic industry, with special emphasis on providing customised solutions for treating presbyopia. 2EyesVision has broad experience in developing customised technologies, such as anterior segment OCT, laser ray tracing, adaptive optics, simultaneous vision, ocular microscopy and lens stretching.

Optimo Medical AG – a Swiss medical technology and IT-cloud company, producing and internationally distributing solutions for patient-specific surgery planning in eye care. One of its product-line employs biomechanical computations to manufacture digital twins of the patients' eyes - inside the computer and uses these virtual copies to calculate the individually optimal incision parameters for the femtosecond laser to ideally correct astigmatism.

The long-term collaboration agreement and joint research projects proved the effectiveness of the actions undertaken under CREATE devoted to setting professional relations with the business sector. These project are at the advanced stage of implementation which means that that an additional plan should be prepared for the upcoming years to maintain these collaborative contacts with the companies.

2.5 Obtaining funds to strengthen the results of ERA Chair grant

The most significant project that will undoubtedly contribute to strengthening results of CREATE is ICTER project, i.e. **"International Center for Translational EYE Research (ICTER)"** with a **funding of EUR 8 m.** granted by the Foundation for Polish Science under the International Research Agendas Programme (IRAP). The project is carried out by Professor Wojtkowski with the collaboration of Professor Krzysztof Palczewski from Institute of Ophthalmology at University College London.

The project aims to introduce new therapies for curing eye diseases by developing at the same time pharmacological methods and tools for monitoring the effects of the treatments, and should, hopefully, result in the creation of some spin-off companies implementing new therapies and devices.

Nine top scientists from top European universities with the high research profile formed **an International Scientific Committee of ICTER:**

- Andrew Dick, Institute of Ophthalmology UCL, UK (chair)
- Francesca Fanelli, Universita degli Studi di Modena e Reggio Emilia, Italy (vice-chair)
- Alison Hardcastle, Institute of Ophthalmology UCL, UK
- Arie-Lev Gruzman, Bar-Ilan University, Israel
- Christopher Dainty, Institute of Ophthalmology UCL, UK
- Pearse Keane, Moorfields Eye Hospital, UK
- Olaf Strauss, Charité Berlin, Germany
- Pablo Artal, Centro de Investigación Óptica y Nanofísica, Universidad de Murcia**,** Spain

The International Scientific Committee is responsible for:

- Supervision and evaluation of the scientific performance of ICTER;
- Evaluation of the research projects submitted in open competition;
- Evaluation of running research projects;
- Evaluation of the ICTER Chairs.

Professor Wojtkowski also acquired four researchers to set research groups within the Centre:

- Andrzej Foik, PhD
- Andrea Curatolo, PhD
- Humberto Fernandes, PhD
- Marcin Tabaka, PhD

They have been establishing an extramurally funded independent research programme related to the eye with an emphasis in the fields of biochemistry, molecular biology, pharmacology and genetics.

Besides, **six companies joined the project** (Polgenix, Optopol, Allergan, Fluence, AM2M, Oculomedica) ensuring industrial connectivity. One of them – Fluence, is a spin-out company of IPC commercializing a cutting-edge all-fiber femtosecond technology.

It should be mentioned that many of the above-mentioned actors firstly appeared at IPC under the CREATE project to deliver a lecture for the IPC community, get acquitted with IPC studies and research potential, and start some talks on possible collaboration (e.g. Professor Palczewski, Professor Dainty, Professor Artal). The CREATE project has contributed significantly to the establishment of the International Center for Translational EYE Research. This new project will reinforce IPC research on the boarder of disciplines and will keep us focused on research excellence due to competitively selected research projects and the International Scientific Committee (supervising work) composed of outstanding researchers and experienced representatives of medical sector.

2.6 Structural changes

Under the CREATE project we have proposed a selection of synergetic teams to better streamline the tutoring and mentoring programme of the ERA Chair holder, and the flow of funds.

The synergetic groups to the Department of Physical Chemistry of Biological Systems (the ERA Chair led by Prof Maciej Wojtkowski)
Laser Centre (led by Prof Czesław Radzewicz & Dr. habil. Angulo Gonzalo)
Microfluidics and Complex Fluids (led by Prof Piotr Garstecki)

Soft Condensed Matter (led by Prof Robert Hołyst)
Surface Nanoengineering for chemo- and bio- sensors (led by Prof Joanna Niedziółka-Jönsson)
Cooperative Catalysis (led by Dr. Adam Kubas)

This was followed by the introduction of annual reviewing process of IPC research carried out by the ERA Chair holder. This process included:

- the review and supplementation of the current research programme of IPC,
- the introduction of Joint research programme for the new ERA Chair and collaborating research group.

This reviewed plan was supposed to be submitted to the Polish Ministry for science. However, due to the change of the Ministry practice and obligation to submit only plans of research funded by the Ministry (small fraction of research that take place at IPC), we abandoned submitting reviewed programme to the Ministry. Nevertheless, Professor Wojtkowski continued reviewing the research programme of IPC to keep the good picture of the activity of the IPC research groups. Joint research plan for his research with the synergetic groups was also continued to be developed. However, we assess that it served only reporting purposes. The collaboration between the synergetic teams went well even without this plan. It allowed to obtain a few grant funding for these collaborative works (reported under the Deliverable 4.7).

Activation of the grants and commercialisation team worked in line what we assumed under the CREATE proposal. The undertaken measures (funds for training of the grants team, streamlining communication between researchers and grants department, better integration on the course of joint projects) led us to sustaining two separate grants departments at IPC – Grants departments (supporting single researchers in managing research projects and financial management) and Big European grants and industry collaboration Department (unit serving joint research applications with external units and projects crossing many research groups under IPC). This second department (headed by Agnieszka Tadrzak, CREATE Project Manager) was involved in the management of the CREATE project and – particularly – included in mentoring and educational programme offered under CREATE. Work of this department has led to the following (successful) proposals:

"International Center for Translational EYE Research (ICTER)"		
Source of funding: INTERNATIONAL RESEARCH AGENDAS PROGRAMME (IRAP), Foundation for Polish Science, Poland	**Project timeframes:** 01/07/2019–31/12/2023	**Obtained funding:** EUR 8,083,002[4]
Project description: To strengthen IPC expertise in the field of chemistry inspired by biology, the ERA Chair holder proposed to initiate research on one of the most appealing social problems of age-related blindness. The project stipulates research on the human eye to develop new therapies and diagnostic tools by conducting cutting-edge research at different resolution levels – from single molecules to entire eye architecture and function. The project's main objective is to develop alternative ways of treating human retinal diseases through novel pharmacological discoveries, innovative eye imaging modalities, and more comprehensive insights into complex adaptive mechanisms of retinal cells. IRAP research programme represents a multidisciplinary effort, enabling vertical integration of fundamental scientific studies, applied optics, new technology, engineering, biology, and medicine, to improve medical diagnostics and develop		

[4] EUR exchange rate: 4.33 PLN.

novel and innovative treatments of eye diseases.

"Dioscuri Centre for Physics and Chemistry of Bacteria"		
Source of funding: Dioscuri Centres of Scientific Excellence Programme National Science Centre, Poland and the Max Planck Society (MPG)	**Project timeframes:** 2020-2025	**Obtained funding:** EUR 1,625,000
Project description: The project stipulates setting Dioscuri Centre (DC), the joint initiative of IPC and Max Planck Institute for Evolutionary Biology in Plön. Research of DC revolves around broadly understood biology, physics, and chemistry of bacteria, particularly human pathogens. DC's main objective is to combine experiments and mathematical modelling to understand better bacterial growth and evolution in pathogenic bacteria's natural environment: the interior of an animal cell and animal secretions.		

"Interdisciplinary NAnoscience School: from phenoMEnology to applicationS" [NaMeS]		
Source of funding: H2020, MSCA-Cofund-DP Polish Ministry for Science	**Project timeframes:** 2016-2022	**Obtained funding:** EUR 2,302,080 EUR 1,338,106[4]
Project description: NaMeS is a research training programme of IPC intended for PhD fellows. The programme, benefiting from former IPC achievements in nanoscience, is designed to employ the phenomenological knowledge concerning nanoscale processes to the creation of new materials applicable in industrial technology, medical diagnostics, and environmental protection. NaMeS links chemistry, physics, mathematics, biology and materials science with business. The programme is aimed at creating a new generation of scientists capable of working in both scientific and business sectors, and becoming stimulants and intermediaries of knowledge & technology transfer on an international level.		

"From Postdoc to PI: the future leaders of ERA" [PD2PI]		
Source of funding: H2020, MSCA-Cofund-FP Polish Ministry for Science	**Project timeframes:** 2016-2022	**Obtained funding:** EUR 2,758,500 EUR 1,126,298[4]
Project description: PD2PI is a novel postdoctoral programme of IPC designed to foster new generation of scientists (Experienced Researchers) to become independent leaders/managers capable of working in business and/or academia. PD2PI offers research training programme, based on 3-i approach (i.e. intersectoral/-national/-disciplinary), in the field of broadly understood chemistry with its links to medicine/biology and physics (3-36 months). This is guaranteed by adequate training (transferable skills training included, and lecturers from both sectors of the economy) & research programme but also participation of excellent (11 research and 6 business) units from Poland and abroad. Moreover, inclusion of a tenure track into the programme creates a unique offer for postdocs.		

Focusing on the synergetic research groups of IPC and the Big grants department delivered good results in terms of joint research integrating many research groups of IPC. Developed capabilities will allow to shape new projects in the future and successfully apply for external funding.

2.7 Second level sustainability management

For CREATE we have applied the second-level management focused on the project sustainability. The sustainability management has been executed by the Project Coordinator (Professor Robert Hołyst) and included in the agenda of the ERA Chair Advisory Board (AB). AB composition fitted this purpose well:

ERA Chair holder	
Professor Maciej Wojtkowski	head of Department of Physical Chemistry of Biological Systems, Institute of Physical Chemistry of the Polish Academy of Sciences, PL
ERC Advanced grant holder	
Professor Wilhelm Huck	Professor of Chemistry, Institute for Molecules and Materials, Radboud University Nijmegen, NL
Authorities representative	
Mateusz Gaczyński	Deputy Director, Department of Innovation and Development, Ministry of Science and Higher Education, PL
Business representatives	
Rafal Bator	Partner, Enterprise Investors, specializing in technology investments, PL
Justyna Garstecka	CEO, Motherhood, PL, former Brand manager at Warner Bros.
Project Coordinator	
Professor Robert Holyst	head of Department of Soft Condensed Matter, Institute of Physical Chemistry of the Polish Academy of Sciences, PL

Particularly, AB has raised and thoroughly discussed the following topics related to the project sustainability:

1. **AB meeting, July, 2016:**

   Problem of 1-dimensional career in science - how to create the environment for high-class specialists (not necessarily of a purely scientific profile, but as well those who can act on the boarder of science and business)?

   Possibilities of creating research and economic ecosystem (quick contacts, custom actions and solutions)

   How the new Department created within the ERA Chair project can exert influence on such institution as IPC?

   How to take advantage of IPC potential to open for new challenges – how to stimulate interdisciplinary research?

2. **AB meeting, Dec., 2017:**

   Best approach to collaboration: external collaborators vs. hiring experts from different fields;

   Public Relations improvement to attract more researchers from abroad;

   Instruments to improve long term financial position of IPC;

   Most appropriate IPC management style & best ways to influence IPC authorities (Board of Directors and the Council) to promote the alternative management style;

   Better regulations on intellectual property at IPC.

3. **AB meeting, Dec., 2018:**

Broadening the scope of IPC activity by introducing new research agenda focused on eye research linking biochemistry, physical chemistry, optics, biology, medicine and engineering – How to integrate groups focused on realization of the agenda with the rest of IPC?

How to integrate institutes of the Polish Academy of Sciences within the PhD schools?

4. **AB meeting, Nov., 2019:**

   Should I stay or should I go – what is the best scenario for continuation of Era Chair project?

   How to keep high research standards and build new organizational structure?

5. **AB meeting, March, 2021:**

   The post-/pandemic reality in science (e.g. collaboration, mobility, science funding and science management)

   Development of future funding strategies to fit in key orientations of the Horizon Europe and Green Deal, National Development Plan

   Ex-post evaluation of the CREATE project

The adopted measures aimed at maintaining and reinforcing the effects of the CREATE project allowed to keep the ERA Chair holder focused on the durability of the project effects. This also helped to develop the ICTER project and obtaining EUR 8 m. to keep this new centre active for at least 5 years (and possibly 5 more years if additional funding is granted).

2.8 Implementation of the provisions of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers

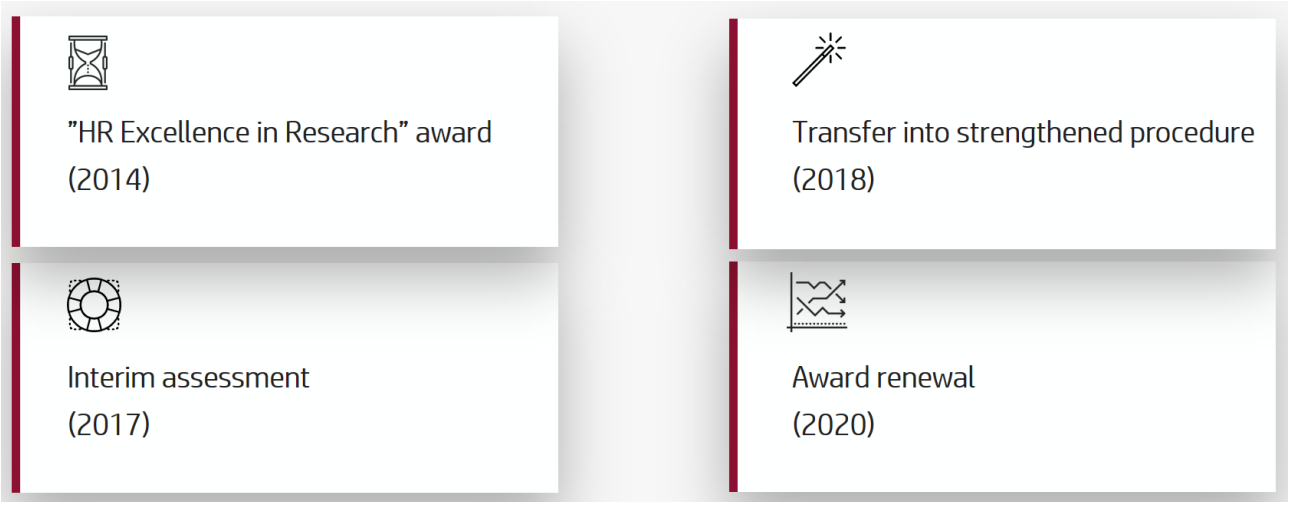
2014, IPC endorsed the principles underlying the 40 provisions of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (C&C). The same year we received an award of "HR Excellence in Research" proving that IPC is dedicated to improvement of working conditions for researchers, strengthening recruitment procedure (based on open, merit and transparent principles) but also strives to improve the educational offer for researchers.

Entering the project, **the ERA Chair holder was involved in the action plan implementation process aimed at increasing cohesion between the principles of C&C and IPC performance**, keeping the role of the adviser to the Working Group and the HRS4R Manager, Agnieszka Tadrzak (simultaneously – Project Manager of the CREATE project). Many ideas of Professor Wojtkowski were implemented to the human resources strategy for researchers of IPC, e.g.:

- **better offer for PhD students**: supplementary skills training and co-founding (with eight other research units) **the Warsaw PhD School in Natural and BioMedical Sciences** (Warsaw-4-PhD) to cover wide variety of research topics from theoretical and experimental chemistry and physics to biology and applied biology (medicine - oncology, psychiatry and neurology),
- **better IPR management**, including creation of the comprehensive guide to navigate through IPR regulations at IPC,
- **one-stop shop for the foreigners** to handle issues connected with stay legalisation, tax settlements and contact with the authorities.

Besides, Professor Wojtkowski contributed significantly to the improvement of research management at IPC entering the Scientific Board and proposal to introduce the integrated management of main business processes at IPC through an implementation of Enterprise Resource Planning (ERP) system.

These joint efforts have led to the positive re-evaluation of IPC performance in terms of HR management by the assessors of the European Commission and the “HR Excellence in Research” Award renewal. The current renewal is valid till 2023. The overall IPC evaluation scheme is presented below:



3. Plan to maximize the effects of the CREATE project

The CREATE project has significantly contributed to the transition of the Institute of Physical Chemistry, Polish Academy of Sciences into a reliable and recognised partner in the European Research Area. Particularly, it allowed to reach the objectives defined in the CREATE proposal, namely:

1) To update and enhance **IPC research programme**
2) To create a **new generation of scientists, eligible for ERA**
3) To enhance **internal integration of IPC** research groups
4) To establish **external cooperation**
5) To improve **IPC capability to compete for grants**
6) To upgrade **material capacity of IPC**
7) To increase the **attractiveness of IPC for researchers, business and authority**

Undertaken actions also resulted in the improvement of the rank of IPC, placing it at the top 5% of research units in Poland in terms of research excellence. It also resulted in an increase of IPC statutory funds. Started projects like ICTER and Dioscuri Centre will have a very good prospects for the future, sustaining position of IPC at ERA with the reputation of capability to carry out applied cutting-edge research on the boarder of chemistry/physics and biology/medicine. Besides that, NaMeS and PD2PI projects started by the new Dept. (Dept. of. Big European grants and industry collaboration) contributed to the internationalisation of IPC. Inflow of highly motivated researchers (MSCA fellows) from different cultures and improvement of the research environment (in line with the principles of C&C) will cause a chain reaction and further structural changes at IPC. However, to better adopt to the future challenges including those underlying the Green Deal and Horizon Europe framework programme IPC needs to:

- improve further working conditions and research management to set an ecosystem favouring talented researchers and facilitating innovation (including development of a Gender plan, supporting organisational learning, working out business processes that may serve professional research management at IPC)
- expand more the number of research teams linking chemistry/physics and biology/medicine, in particular teams undertaking applied research
- selecting and supporting research teams capable to answer challenges defined in the new prioritized funding programmes
- spinning activities aiming at the increase of IPC visibility in the commercial space (e.g. picking the best teams and investing in people with excellent research record and good prospects of commercialisation)
- maintaining relations with excellent research units and business partners (joint projects, joint initiatives, etc.).

This draft plan is in line with the recommendations of the Advisory Board expressed during the assembly held at March 2021.