*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 the CREATE 2nd SCIENTIFIC SYMPOSIUM

Level of dissemination: PUBLIC

Warsaw, June 2019

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 666295

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CREATE 2nd SCIENTIFIC SYMPOSIUM

June, 17-18, 2019, the CREATE 2nd Scientific Symposium entitled "***Physical Chemistry in Biological Systems – towards comprehensive research on eye and vision"*** was organized in Warsaw.

Programme of the symposium covered two days. First day was devoted to broadening of IPC research programme through introduction of the new agenda of Translational Eye Research. For this reason closed workshop - with participation of the ERA Chair holder, members of the Department of Physical Chemistry of Biological Systems (PCBS) and external experts - was organized.

In particular, the following topics were discussed:

- recruitment of new PIs & their influence on the future research conducted at IPC;
- new ways to increase visibility of the CREATE project.
- proposed actions to maintain sustainability of the CREATE project: research and innovation challenges for translational eye research center.

Panel discussion with experts within CREATE 2nd Scientific Symposium, 17 June 2019

Second day of the CREATE 2nd Scientific Symposium was open to the public and was consisted of invited talks of the prominent international speakers and several short talks of PCBS members. The main purpose of the event was to make scientists researching different fields to share their expertise and set up relations with young scientists for joint future interdisciplinary research.

[For the full programme of the CREATE 2nd Scientific Symposium see **Annex 1**.]

The first talk *"Systems pharmacology links GPCRs with retinal degenerative disorders"* was delivered by prof. Krzysztof Palczewski, biochemist from University of California, Irvine, USA. Prof. Palczewski is the winner of FNP Prize, the most prestigious award for Polish scientists, which he received for characterizing crystal structures of native and activated G protein-coupled receptor, rhodopsin, involved in eyesight.

Another invited speaker, Prof. Karl-Wilhelm Koch, delivered a seminar entitled *"Biophysical approaches to understand biomolecular interactions in vision"*. Professor Koch runs the division of Biochemistry of signal transduction/neurosensory processes at the University of Oldenburg, Germany. Research of Koch's division covers elucidation of the molecular basis of cellular signal processing with the focus on: phototransduction, neuronal calcium sensor proteins, guanylate cyclases, molecular basis of retinal degeneration and biosensor technology.

The next presentation entitled *"Fighting retinal degenerative diseases with RPE65-inhibitors"* was presented by Prof. Arie-Lev Gruzman from Bar-Ilan University in Israel. His work focuses on development of new drugs for the treatment of insulin and non-insulin dependent diabetes mellitus.

Invited talks within CREATE 2nd Scientific Symposium , IPC PAS, 18 June 2019 (Prof. Kris Palczewski, Prof. Karl-Wilhelm Koch, Prof. Arie-Lev Gruzman, Prof. Olaf Strauss)

The last lecture entitled *"The retinal pigment epithelium: a partner in visual function and interface to the body system"* was delivered by Prof. Olaf Strauss from Charité - Universitätsmedizin Berlin, Germany. His research includes experimental ophthalmology, with the main focus on cell physiology of the retinal pigment epithelium in health and disease.

The lectures met with great interest of the audience, as evidenced by the large number of questions and comments.

This part of symposium was held at the IPC assembly hall and it was attended by IPC researchers, incl. PhD students, as well as external guests from University of Warsaw, Mossakowski Medical Research Centre, Maria Sklodowska-Curie Institute - Oncology Center, Nicolaus Copernicus University – overall. All seminars were attended by more than 70 people.

After the talks of invited researchers the members of the Physical Optics and Biophotonics (POB) Group presented progress and results of their research. This part of event was focused on advancements in optics and biophotonics.

POB Members talks within CREATE 2nd Scientific Symposium , IPC PAS, 18 June 2019, (Egidijus Auksorius PhD, Dawid Borycki PhD, Łukasz Kornaszewski PhD, Karol Karnowski PhD)

[See **Annex 2** for the titles of the talks.]

The CREATE 2nd Scientific Symposium allowed to strengthen collaboration with several different research groups on the interdisciplinary level, linking physical chemistry with biology and medicine. This event served also as a networking platform, especially during the integration part organized for all conference attendees.

At the end of the event, short visit to the laboratory of Physical Optics and Biophotonics Group of the Department of Physical Chemistry of Biological Systems was organized. This visit allowed for acquaintance of invited speakers with IPC and the new Department of Physical Chemistry of Biological Systems, establishment of mutual relations and discussion on possibilities for future cooperation.

ANNEX 1.

Full agenda

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2nd Symposium: Physical Chemistry in Biological Systems – *towards comprehensive research on eye and vision*

The Institute of Physical Chemistry of the Polish Academy of Sciences

Agenda

17 June 2019

2:30 – 4:00 pm	Welcome lunch & coffee
4:00 – 7:00 pm	**Broadening of IPC research program - Research Agenda of Translational Eye Research** (workshop and panel discussion)
4:00	Part I: *General overview of new research agenda – prof. Maciej Wojtkowski* *Scientific excellence – new perspectives for IPC– prof. Krzysztof Palczewski* *Organizational and operational scheme of new agenda – Anna Pawlus*
5:00	Part II - panel discussion with experts (prof. Krzysztof Palczewski, prof. dr. Karl-W. Koch, prof. Arie-Lev Gruzman, prof. Olaf Strauss, prof. Francesca Fanelli, prof. Andrew Dick, dr. Pearse Keane) : • A new way to increase the visibility of CREATE project • Recruitment of new PIs – influence on the future performance of research conducted at Institute of Physical Chemistry Polish Academy of Sciences • Actions to maintain the sustainability of CREATE project: research and innovation challenges for Translational Eye Research
8:00 pm	Dinner

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18 June 2019

8:30 – 9:00 am	Registration and coffee
9:00 – 12:30 pm	**CREATE 2nd Symposium: Physical Chemistry in Biological Systems – towards comprehensive research on eye and vision**
9:00	Introduction – prof. Maciej Wojtkowski
	Invited talks:
9:10	**Systems pharmacology links GPCRs with retinal degenerative disorders** prof. Krzysztof Palczewski, University of California, Irvine, USA
9:40	**Biophysical approaches to understand biomolecular interactions in vision** prof. dr. Karl-W. Koch, University of Oldenburg, Germany
10:10	**Fighting retinal degenerative diseases with RPE65-inhibitors** prof. Arie-Lev Gruzman, Bar-Ilan University, Israel
10:40	**The retinal pigment epithelium: a partner in visual function and interface to the body system** prof. Olaf Strauss, Charité - Universitätsmedizin Berlin, Germany
11:10 – 11:30 am	Coffee break
	Advancements in research on physical optics & biophotonics:
11:30	**Towards improving imaging depth and speed in full-field optical coherence tomography** dr. Egidijus Auksorius
11:45	**Spatio-temporal Optical Coherence Imaging** dr. Dawid Borycki
12:00	**Towards safe two-photon functional in vivo imaging of human retina,** dr. Łukasz Kornaszewski
12:15	**Developing OCT systems for in vivo imaging of the cornea in response to a dynamic loading** dr. Karol Karnowski
12:30 – 1:30 pm	Lunch
1:30 pm	Lab visit: Physical Optics and Biophotonics Group, Department of Physical Chemistry of Biological Systems

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ANNEX 2.

CREATE 2nd Scientific Symposium – poster session

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Tuesday, 18 June 2019

CREATE 2nd scientific symposium

Physical Chemistry in biological systems – **towards comprehensive research on eye and vision**

Join the **CREATE 2nd scientific symposium!**

Institute of Physical Chemistry PAS | Assembly Hall | 9:00 am - 12:30 pm

8:30-9:00 Registration and coffee

9:00 – 11:10	*1st session: Invited talks*		
9:00	**Prof. Maciej Wojtkowski**	***Introduction***	*Institute of Physical Chemistry, PAS*
9:10	**Prof. Krzysztof Palczewski**	***Systems pharmacology links GPCRs with retinal degenerative disorders***	*University of California, Irvine, USA*
9:40	**Prof. Dr. Karl-Wilhelm Koch**	***Biophysical approaches to understand biomolecular interactions in vision***	*University of Oldenburg, Germany*
10:10	**Prof. Arie-Lev Gruzman**	***Fighting retinal degenerative diseases with RPE65-inhibitors***	*Bar-Ilan University, Israel*
10:40	**Prof. Olaf Strauss**	***The retinal pigment epithelium: a partner in visual function and interface to the body system***	*Charité - Universitätsmedizin Berlin, Germany*
		11:10-11:30 Coffee break	
11:30 – 12:30	*2nd session: Advancements in research on physical optics & biophotonics*		
11:30	**Dr. Egidijus Auksorius**	***Towards improving imaging depth and speed in full-field optical coherence tomography***	*Institute of Physical Chemistry, PAS*
11:45	**Dr. Dawid Borycki**	***Spatio-temporal Optical Coherence Imaging***	*Institute of Physical Chemistry, PAS*
12:00	**Dr. Łukasz Kornaszewski**	***Towards safe two-photon functional in vivo imaging of human retina***	*Institute of Physical Chemistry, PAS*
12:15	**Dr. Karol Karnowski**	***Developing OCT systems for in vivo imaging of the cornea in response to a dynamic loading***	*Institute of Physical Chemistry, PAS*
		12:30-1:30 Lunch	

Registration deadline: 12 June 2019 | conference fee - free of charge

For more details visit: http://create.edu.pl/

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