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

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1st report on Establishing Knowledge Transfer Zone

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Introduction

This document consists of specification of activities aimed at knowledge transfer such as business open lectures, timetable and description of their course.

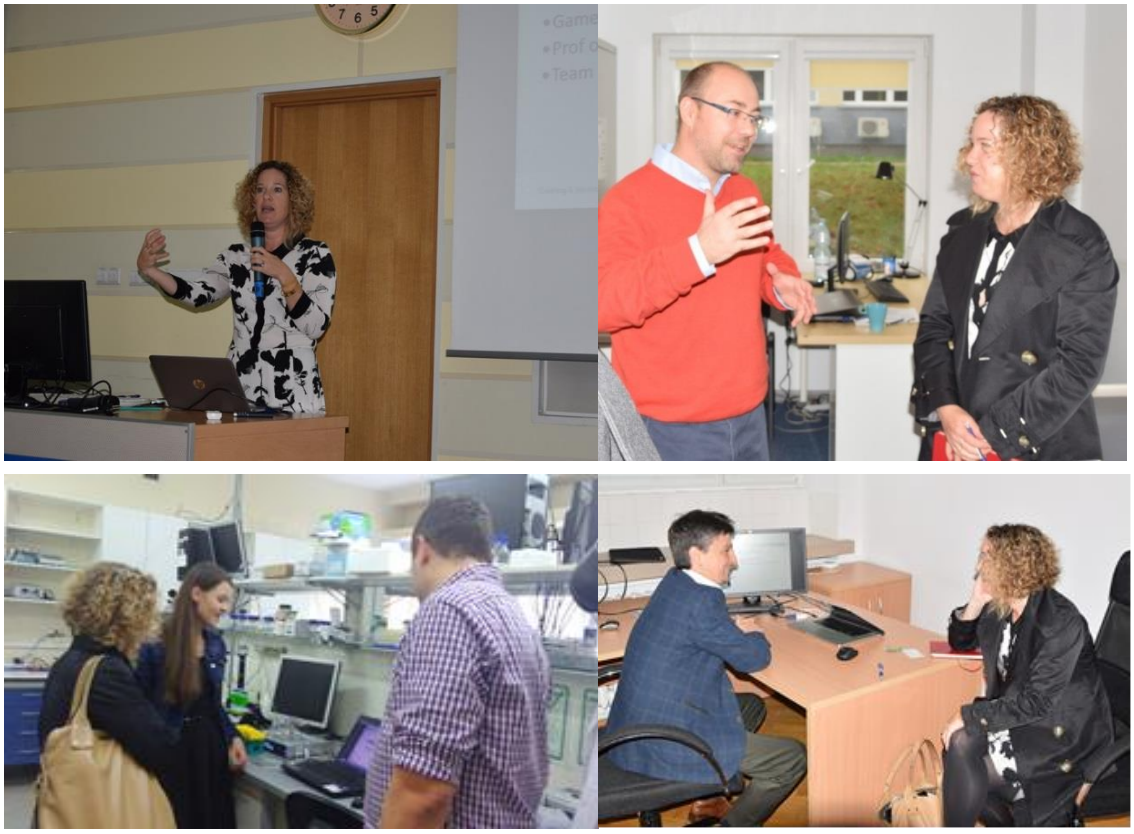
Under WP5 a set of lecture – CREATE lectures "Innovation source" was organized at the Institute of Physical Chemistry PAS (IPC). The purpose of these lectures is to update scientists' knowledge of current technological trends and innovation in chemistry-related sectors, as well as establishment of relations with industry.

Till the end of January 2019 five open lectures under the series of "*Innovation source*" were held:

1. **Sarai Kemp** "*The Israeli start-ups' eco-system* - How to commercialize technologies from the Academia"

   The first open lecture under a series of "*Innovation source*" was held on the **26th October, 2016**. **Sarai Kemp, CEO of Israeli company – *Trendlines*, offering commercialization services at the field of life science aimed at establishment of start-up companies**, paid a visit at IPC aimed at:

   - ✓ delivering a lecture **"*The Israeli start-ups' eco-system* - How to commercialize technologies from the Academia"**
   - ✓ visiting several laboratories and research groups of the Institute, as well as two spin-off operating on the premises of IPC.



Sarai Kemp during the lecture, visiting the spin off companies and at the laboratories.

During the lecture, Sarai Kemp referring to the Israeli start-up ecosystem, listed the greatest challenges needed to be overcome in order to successfully commercialize research results. The

interactive way of conducting the lecture allowed for an active discussion. The whole society of IPC, including all the IPC researchers, and doctoral students was invited.
After the lecture, Sarai Kemp visited several laboratories and research groups of the Institute, as well as two spin-off operating on the premises of IPC. These meetings enabled individual researchers to consult problems they face at various stages of commercialization of their research results.
Sarai Kemp gave also a handful of recommendations to improve knowledge transfer between business and IPC, such as:

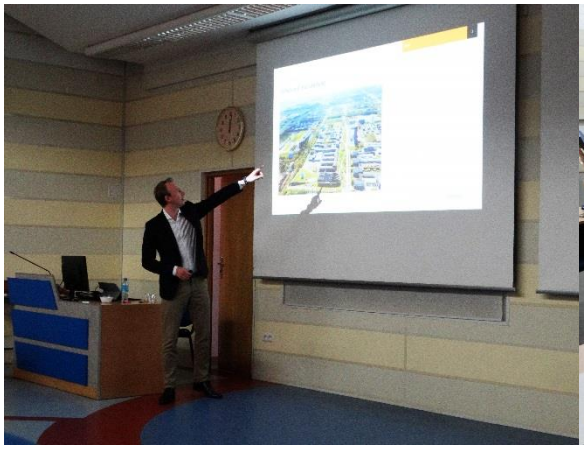
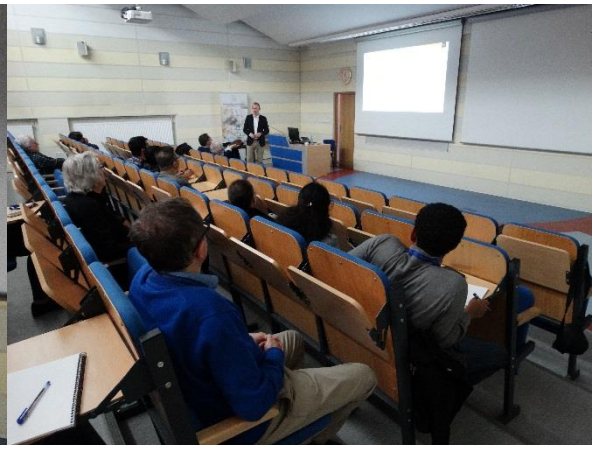
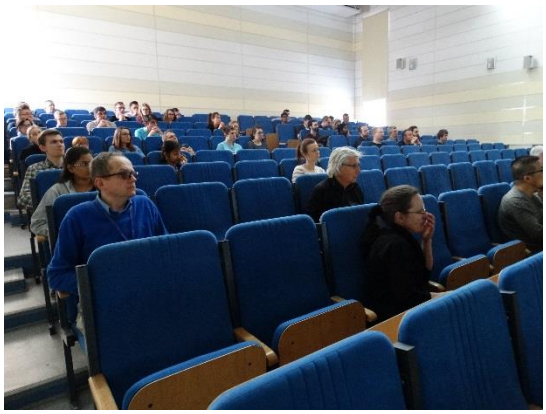
1. Even basic research should be in line with world trend to ensure their applicability: Research confronted directly with the global scientific work will give a realistic perspective of application. This concerns mainly the areas such as life sciences, engineering sciences, chemistry and physics. In other words, **it is enough to adapt to world trends and the results of basic research will be usable in practice**.
2. Application potential depends on the organization of research - in particular the organization chart of the research group. Therefore it is recommended to:
    - strengthen integration both at the level of a group and at the entire institution. All types of works – i.e. fundamental research, applied research and implementation works – can be simultaneously carried out at the level of the research group and at the level of the whole institute.
    - create groups dedicated to the implementation activities, or conducting development works to balance the number of research of a purely fundamental nature
    - constantly evaluate of research groups
    - maintain an appropriate number of staff with extensive experience
    - acquire and/or maintain Team leaders with a very good sense of the current market needs. They have to go beyond their traditional role of scientists and advisors, understand the needs of the industry (aimed at profit), and optimize the process of technology development and sale of new technologies.
    - open to cooperation with specialists with unique skills who do not have purely scientific ambitions
    - allow for the research groups people who do not to duplicate a one-dimensional academic career model adopted in Poland
    - allow for recruitment of recruit highly qualified specialists at a decent level earnings.

The lecture was attended by 60 persons.

2. Vincent Laban "VSParticle: spin-off company of the Technical University Delft – Production of nanoparticle"

The second open lecture under a series of "*Innovation source*" was held on the **28th March, 2017**.

Vincent Laban, CFO of VSParticle - a Dutch startup company from Delft University of Technology specialized in the development of nanoparticle generators, paid a visit at IPC and delivered the lecture "***VSParticle: spin-off company of the Technical University Delft – Production of nanoparticle***". The whole society of IPC, including all the IPC researchers, and doctoral students was invited.


The lecture of Vincent Laban, IPC assembly hall, the 28th March, 2017.

The course of lecture:

- ✓ description of Vincent Laban career path – from a researcher, through an employer of a corporation to an entrepreneur and at the same – an employer;
- ✓ **history behind the establishment of his spin-off company**, indicating some of the biggest challenges which founders (scientists and young entrepreneurs at the same time) need to face at the first stage of running own business.
- ✓ defined the **timeframes and resources** needed to transfer the ideas from the laboratory to business unit
- ✓ explanation of methods used by VSParticle to produce the particles
- ✓ indication of areas where VSParticle company is supposed to developed in the future:
  - Catalysis (industrial production of chemicals),
  - Printed electronics,
  - Life sciences (nanomedicine and sensors).

At the end of the presentation, several PhD students for some clarification, mainly referring to application of the proposed solution into their particular research environment.

The seminar gave an opportunity for active discussion about possible applications of the new material solutions into the research conducted at IPC. The lecture was attended by 60 persons.

3. Justyna Garstecka "How to start, and keep (!) your own business"

On the **10th May, 2018** the another open lecture under a series of "*Innovation source*" took place at the Institute of Physical Chemistry PAS (IPC).

Justyna Garstecka was invited to the Institute by the Project Coordinator and ERA Chair holder, professor Robert Holyst and professor Maciej Wojtkowski, respectively. Justyna Garstecka is a **founder and owner of the "Motherhood" company**. She has been awarded "Businesswoman of the Year" (contest "Success Written in Lipstick"). Before setting own company Ms. Garstecka was a Brand Manager at Warner Bros. In addition to above, she is also a member of ERA Chair Advisory Board for the CREATE project.

The main goal of the visit of Justyna Garstecka was to deliver a lecture ***"How to start, and keep (!) your own business"***. The whole society of IPC, with IPC researchers and doctoral students, was invited.

The lecture of Justyna Garstecka, IPC assembly hall, the 10th May, 2018.

The lecture was focused on practical aspects of running a business and included the following issues:

- ✓ How to start your own business?
- ✓ How to keep it up and running?
- ✓ Why all obvious things are not so obvious while doing business?
- ✓ And how come that running through the nettles can also be motivating?
- ✓ Want to be your own boss? Be aware that you will also be your own employee!

In the course of the lecture, Ms. Garstecka discussed such issues as:

- ✓ focusing on details – paying attention to each element of creation or sale processes; everything must be perfect because everything is important;
- ✓ identifying the target group and determining the best moment to send offers;
- ✓ in house vs. outsourcing – advantages and risks;
- ✓ budget planning – planning expenses, during small and large sales as well;
- ✓ creating the price policy.

The seminar gave an opportunity for active discussion about practical aspects of running your own business. During the presentation there were many questions from the audience. Moreover, when the Q&A session finished, several people asked further questions to the presenter on an informal one-to-one basis.

The lecture was attended by 67 persons.

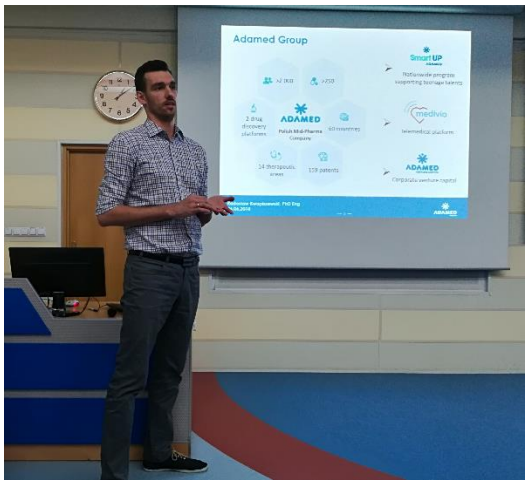
4. Radosław Kwapiszewski "Academic scientists and Pharmaceutical R&D: what can they offer each other?"

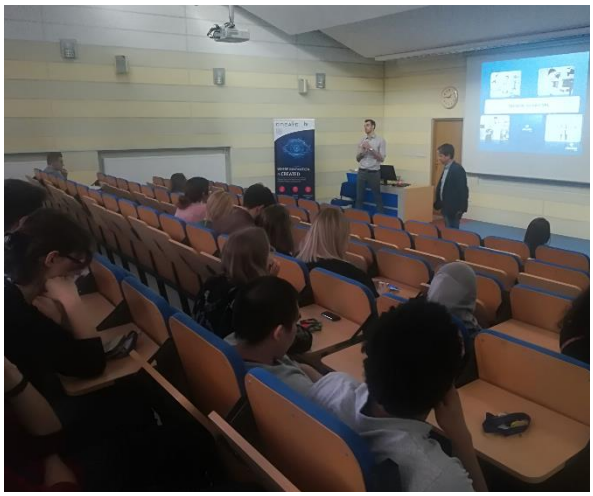
The fourth open lecture under a series of "*Innovation source*" was held on the **6th June, 2018**.

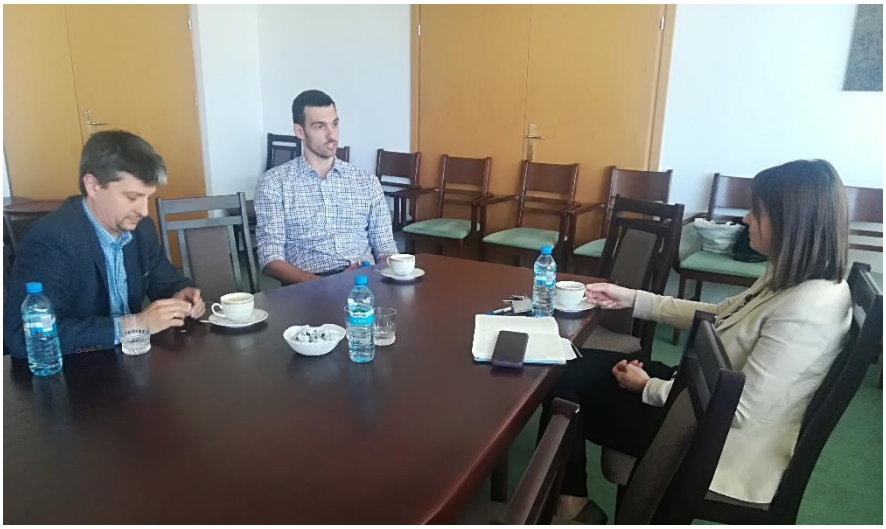
Radoslaw Kwapiszewski, R&D Project Manager in the Drug Discovery Department at Adamed Group paid a visit at IPC aimed at:

- ✓ delivering a lecture "***Academic scientists and Pharmaceutical R&D: what can they offer each other?***"
- ✓ business meeting to discuss possible future cooperation.

In 2001, Adamed became the first Polish pharmaceutical company to initiate research into innovative drugs (in opposition to generic drugs manufactured by majority of Polish drug companies). Currently, Adamed focuses on the areas of oncology and central nervous system diseases, carrying out the projects in cooperation with leading research facilities both in Poland and abroad.







The lecture of Radoslaw Kwapiszewski, IPC assembly hall, the 6th June, 2018.

The course of lecture:

- ✓ description of Radosław Kwapizewski career path – from a researcher at academia to R&D project manager at pharma company;
- ✓ **profile of Adamed Group,** its most important areas of interest and career development opportunities in this company;
- ✓ differences between pharma and academia structure;
- ✓ indicators which motivate people to do science, like the thrill of new discoveries, stress level, freedom to choose your own directions, money – with discussion which factors could be found doing research in the academy in comparison with pharma;
- ✓ guidance to those wanting to transition between these two sectors – based on Radosław Kwapiszewski experience;

During the seminar, strengths as well as limitations of both, academia and industry sectors were pointed out. Simultaneously, dr. Kwapiszewski stressed the importance of cooperation between academia and industry, putting forward great public health victories resulting from such collaborative works.

The lecture was attended by 57 persons.

After the lecture, the business meeting was organized. The aim of which was to summarize the visit and discuss the guest's recommendations for the Institute.

1. possible collaboration patterns (how joint projects are selected and developed):

   Usually an incentive comes from the company which defines general problem to be solved. After that research groups performing corresponding studies are selected, and their ideas evaluated as regards to concept soundness, technological readiness and methodology correctness. After that very limited number of projects are developed in cooperation with the company.

2. other forms of reinforcing pharma-academia relations:

   Adamed is open to support technological start-up initiatives also without financial engagement, offering mentoring services, consultations and accepting researchers for internship programmes.

3. research topics of current interest to pharma industry:

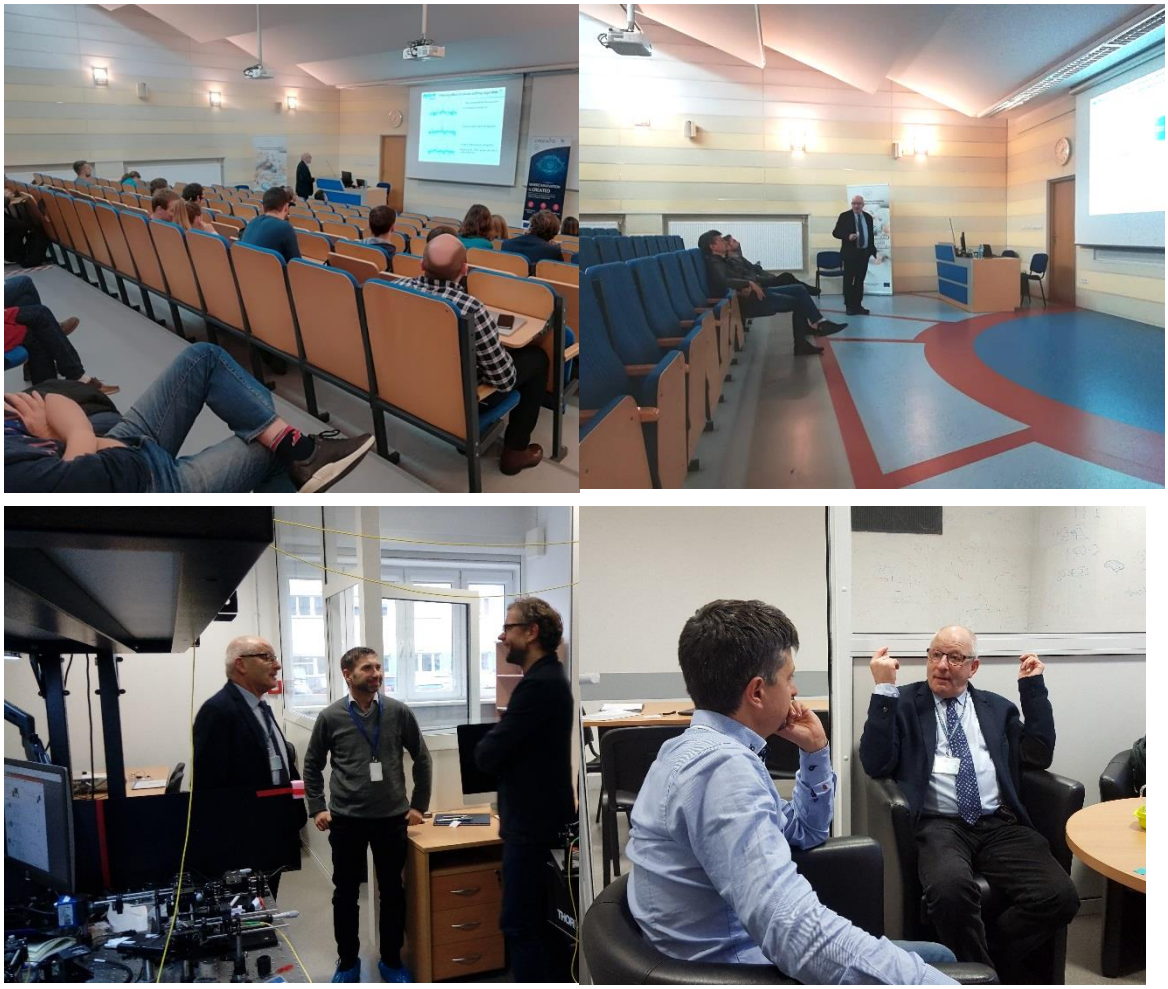
   Generally, in Poland very few companies conducts studies on innovative drugs. The companies are rather interested in looking for expired patents or patents with loopholes. The company gave a clue which oncology drugs are of interest to everybody. Dr Kwapiszewski also suggested to focus on diagnostic instruments which may support studies of pharma.

5. Christophe Gorecki "How to convert EU-funded research in MEMS and MOEMS technologies into a success story with market-oriented exploitation?"

On the **19th November, 2018** the another open lecture under a series of "*Innovation source*" took place at the Institute of Physical Chemistry PAS (IPC).

Prof. Christophe Gorecki, Director of research at CNRS and Head of the MOEMS team at the FEMTO-ST Institute - a mixed research unit associated with CNRS (French National Center for Scientific Research) in the fields of engineering and applied physics, paid a visit at IPC aimed at:

- ✓ delivering a lecture „How to convert EU-funded research in MEMS and MOEMS technologies into a success story with market-oriented exploitation?"
- ✓ visiting POB Group, as well as having a short discussion with ERA Chair holder and CREATE Project Coordinator on the status of R&D sector in Poland.



The lecture and meetings of prof. Christophe Gorecki at IPC, the 19th November, 2018.

During the seminar Prof. Gorecki discussed the examples of possible and most successful innovation pathways, explaining what can be exploited in EU-funded technologies projects. General factors of successful management were also presented, together with innovation cycle and technology readiness levels.

Preceding the seminar, Christophe Gorecki visited Physical Optics and Biophotonics research group and had individual discussions with researchers from this team. These meetings enabled individual researchers to present and consult projects they are involved in, to get a new perspective from industry oriented specialist.

The lecture was attended by 56 persons.

After the lecture, the business meeting was organized where a short analysis and comparison of French and Polish industry/R&D sectors has been done, with the following conclusions and recommendations:

- ✓ There is a lack of global companies in Poland, investing in "future" R&Ds;
- ✓ In France, by starting a spin-off, there is a significant support for researchers-entrepreneurs from universities: in the first couple of years, such researchers are supported with the salary from University, and only later on one will move to industry in 100%. There is always an option of going back to the same position held at university before switching to industry.
- ✓ Polish science start-ups environment is much more difficult: there is lack of regulations, what results in researchers working at the University and at the same time running their start-ups. There are no polices encouraging researchers to start entrepreneurial activity.
- ✓ After moving to your own company, one loses contact / possibility of using the best world class equipment. To change the R&D landscape in Poland, there is a need for fostering young entrepreneurs.