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

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Open Access database – ELAD+

[Deliverable D.5.3]

Level of dissemination: Public

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1. Introduction

Under Noblesse project (FP7), the Institute of Physical Chemistry, Polish Academy of Sciences (IPC) created an **Electronic Laboratory Equipment Database (ELAD)**. The main aim of ELAD was to accumulate information on laboratory equipment resources of IPC and collaborating research units in the region with the objective of its popularization. So far, ELAD helped to:

- **establish relations and new common research projects** between research entities and enterprises,
- **widen the range of exploitation of laboratory equipment available at IPC** for wide group of potential users from research and industrial area.

However, to enhance collaboration, IPC identified the need to supplement this database by information on the fields of expertise of our researchers and inventions offered for business application (ELAD+). It aimed to strengthen collaboration, i.a. providing our stakeholders with IPC researchers contact details and information on the ownership of the patent rights. The extended database was called ELAD+.

The database is available in Polish and English.

Since recently we have also launched a revamped webservice for our stakeholders with a new IPC visualization (including a new logo). The ELAD+ database was transferred to this new webpage (subpage: "Science for business").

Under this report we describe the final effects of our work – i.e. the new functionalities of ELAD+.

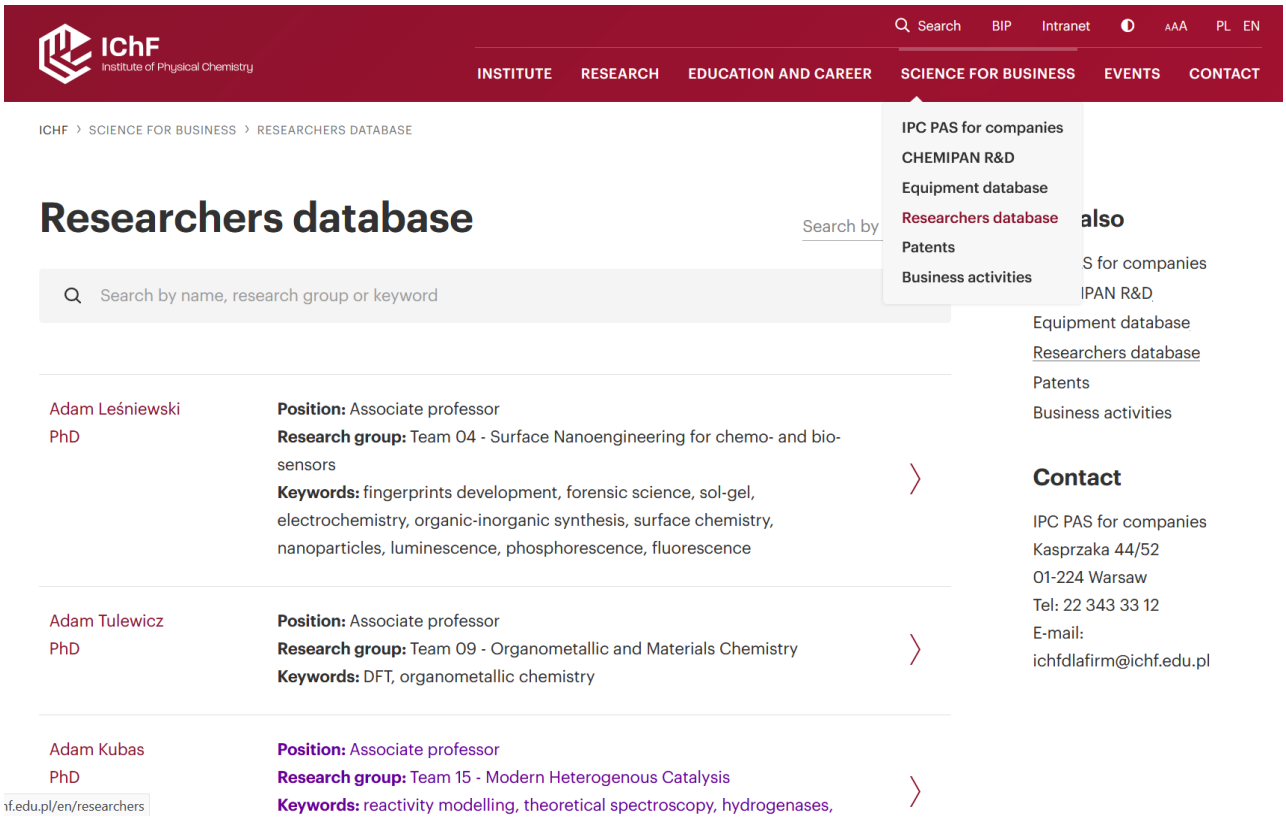
2. ELAD+ database

To the previous version of ELAD we have added new modules (forming the new ELAD+ database), such as:

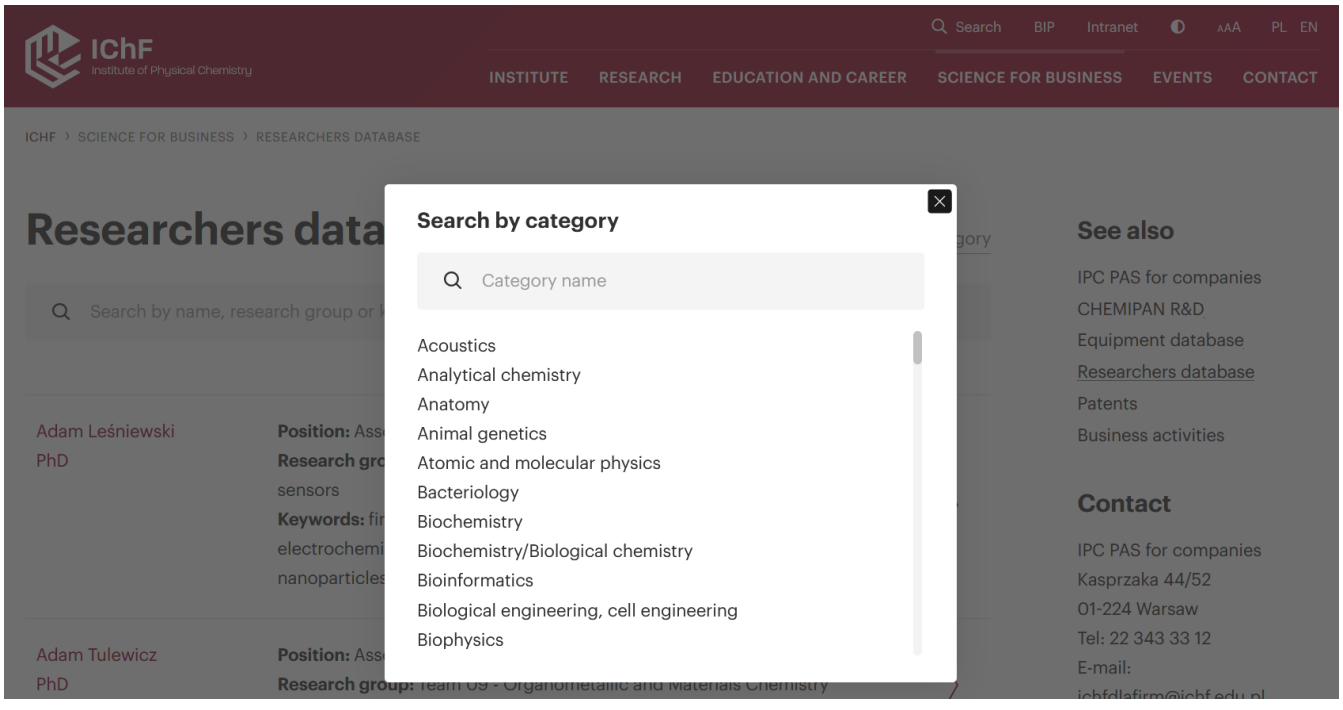
a) **"Researchers"** (https://ichf.edu.pl/en/researchers):

The module lists the fields of expertise of IPC and, in detail, our researchers (incl. the new IPC specialization – i.e. chemistry inspired by biology). Users may search the records using a dedicated machine broken by: researcher's name, research group or keywords.

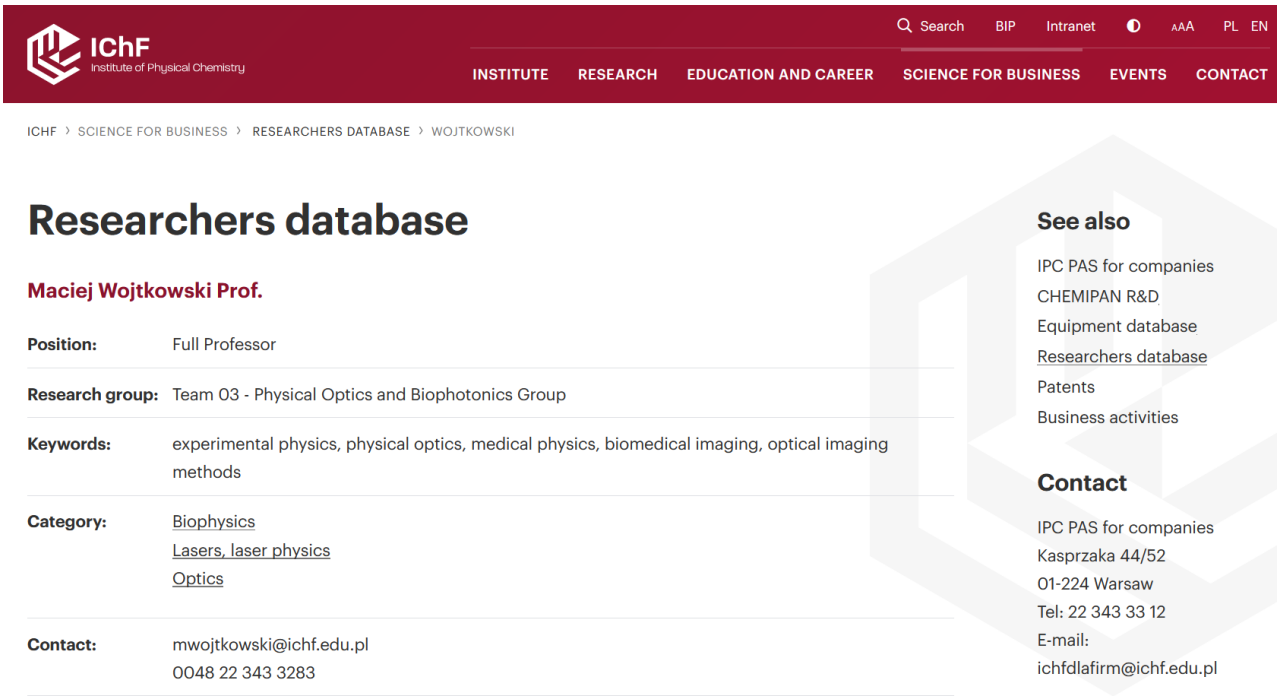
A general view:



Searching machine:



An exemplary record:

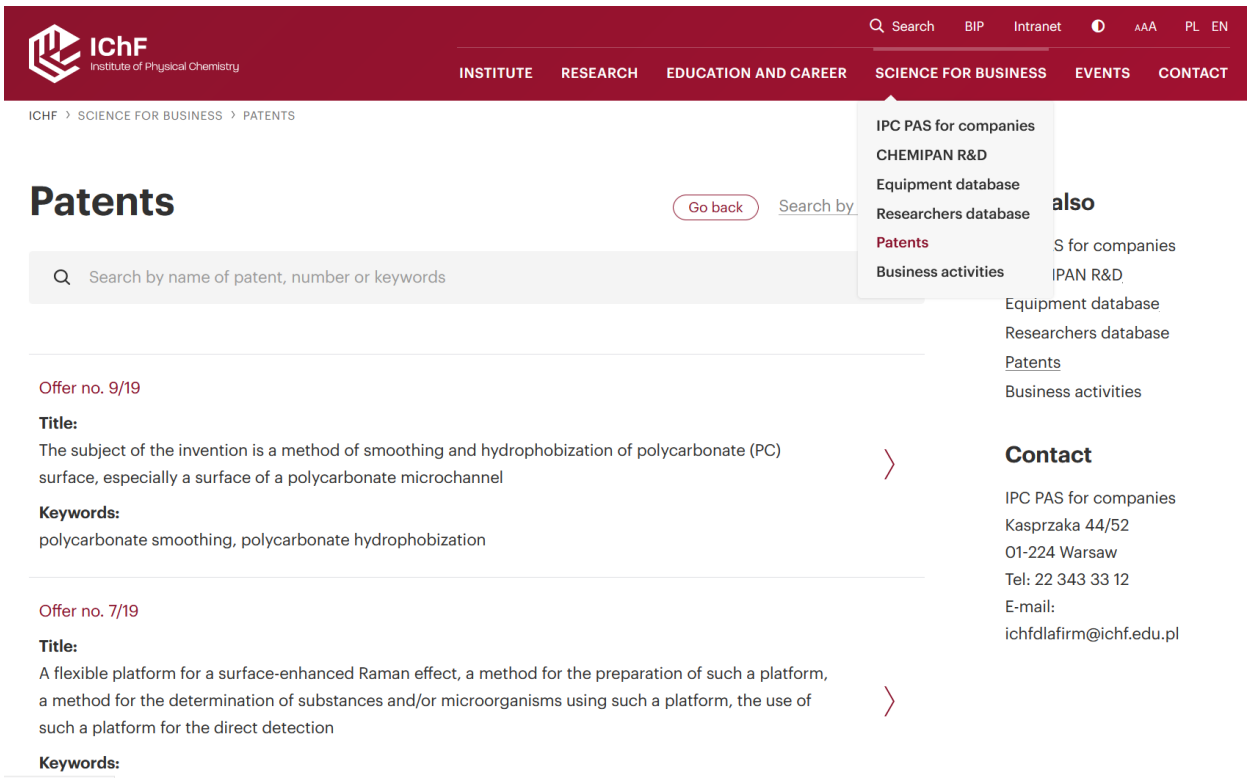


The displayed search results include: **(1)** name of the researcher, **(2)** their affiliation to the research group, **(3)** keywords corresponding with their research topics, **(4)** more general research categories and (5) contact details. **Currently, this module has 155 records** (only those scientists who agreed to be listed).

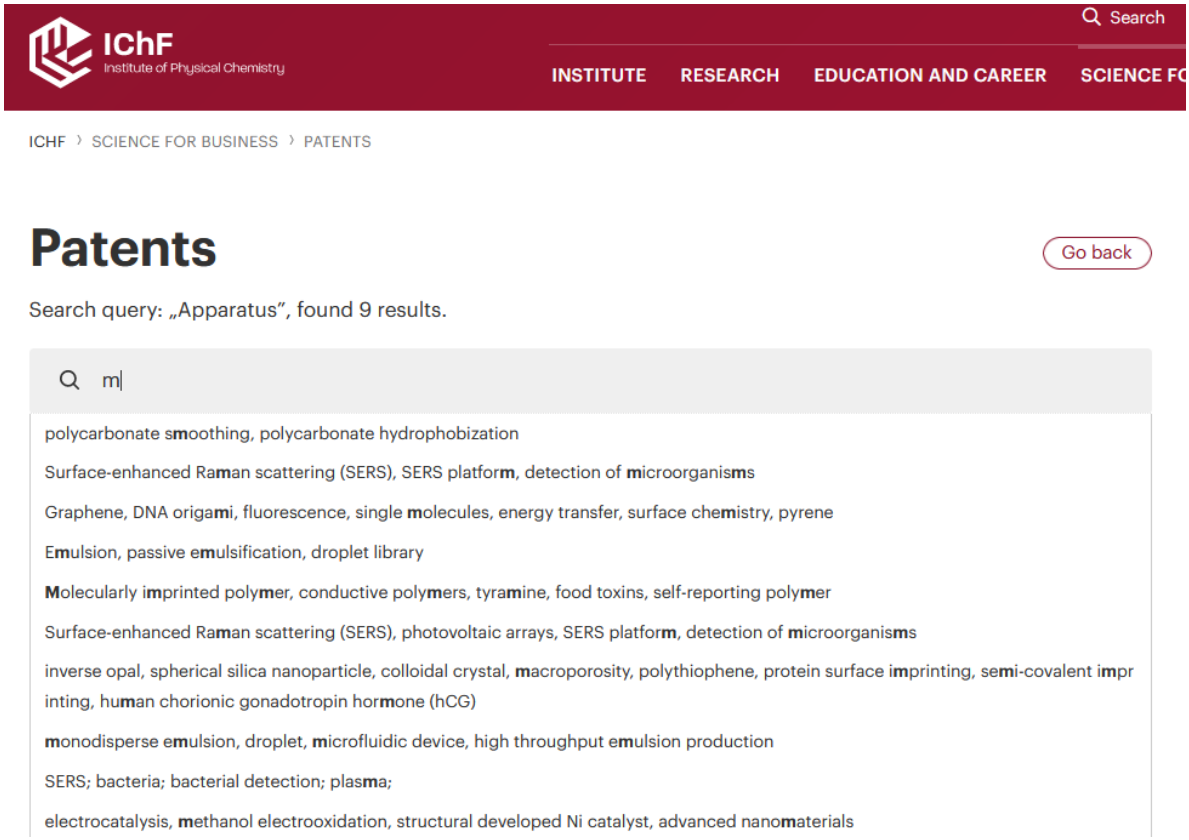
a) "Patents" (https://ichf.edu.pl/en/patents):

The module specifies industrial protection rights, i.e. patent applications or granted patent rights, securing research results. Users may search the records using a dedicated machine by: subject, offer no., title, summary and keywords. This module has 83 records.

A general view:



Searching machine:



An exemplary offer:

Offer no. 2/12

Method for the on-demand separation of paramagnetic material from droplet and the apparatus for the on-demand separation of paramagnetic material from droplet

Summary:

The present invention describes the method of on-demand separation of paramagnetic material from a droplet and a system for an on-demand separation of paramagnetic material from a droplet. The technique is based on the division of droplet into two droplets; one of which containing most of volume of initial droplet, nut no paramagnetic material, and another containing only paramagnetic material. The invention also describes a microfluidic system for such division of droplets.

Inventors:

Paweł Dębski, Piotr Garstecki, Sławomir Jakieła

Advantages / Innovative aspects:

- ✓ non-invasive metod of the separation of paramagnetic beads from droplets in a microfluidic system
- ✓ separation on demand the paramagnetic material is separated from the droplet only if necessary
- ✓ applicable for microfluidic channels with oval and rectangular cross section, which is particularly important for lab-on-chip techniques
- ✓ the system provides the separation of more than 99% of paramagnetic material from droplets
- ✓ the improvement of the efficiency of the separation is due to the change of the shape of the channel, i.e. by widening its short segment

Keywords:

microfluidic techniques, lab-on-chip, diagnostics, paramagnetic beads

Field:

Instruments - Analysis of biological materials | Chemistry - Biotechnology

Usage:

Plastics, Polymers, Analytical chemistry, Clinical research, Health Service, Measuring sensors, Chemical techniques

State of the progress:

stage of research

Intellectual property rights:

Patent in Germany

Attachments

Stages of separation of the paramagnetic material from a droplet in a microfluidic channel with square cross-section ⬇

Back to patents list 〉