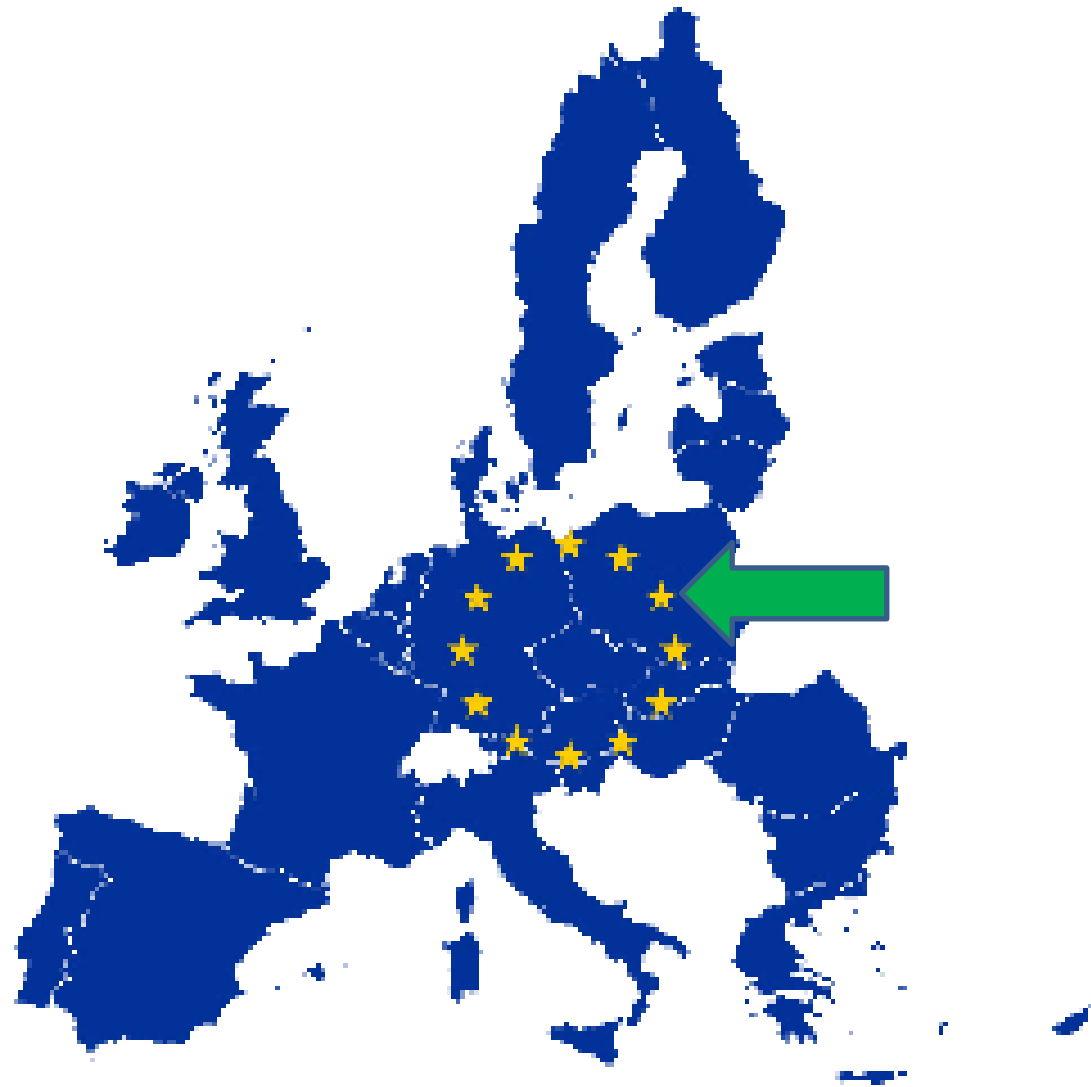




# Opportunities of Indo-Polish Cooperation in S&T

Joanna Młynarczyk  
Embassy of the Republic of Poland in New Delhi

EU Awareness Raising and Information Campaign  
in India, 10-28 September 2012



# Poland - Key Facts



- Geographic centre of Europe
- Area: 312 700 sq km – 6th largest in EU
- Population: 39 million – 6th largest in EU
- Currency: Polish Zloty (1 USD~3 PLN, 1 EUR~4 PLN)
- GDP: USD 771,7 billion (PPP, 2011, IMF) – 6th largest in the EU
- GDP per capita: USD 20,333 (PPP, 2011)
- Since 1989 one of the fastest growing economies in Europe (the only European country that maintained constant growth during the financial crisis)
- One of the most attractive destinations for foreign investments
- Membership: EU, NATO, OECD, WTO, Schengen Zone

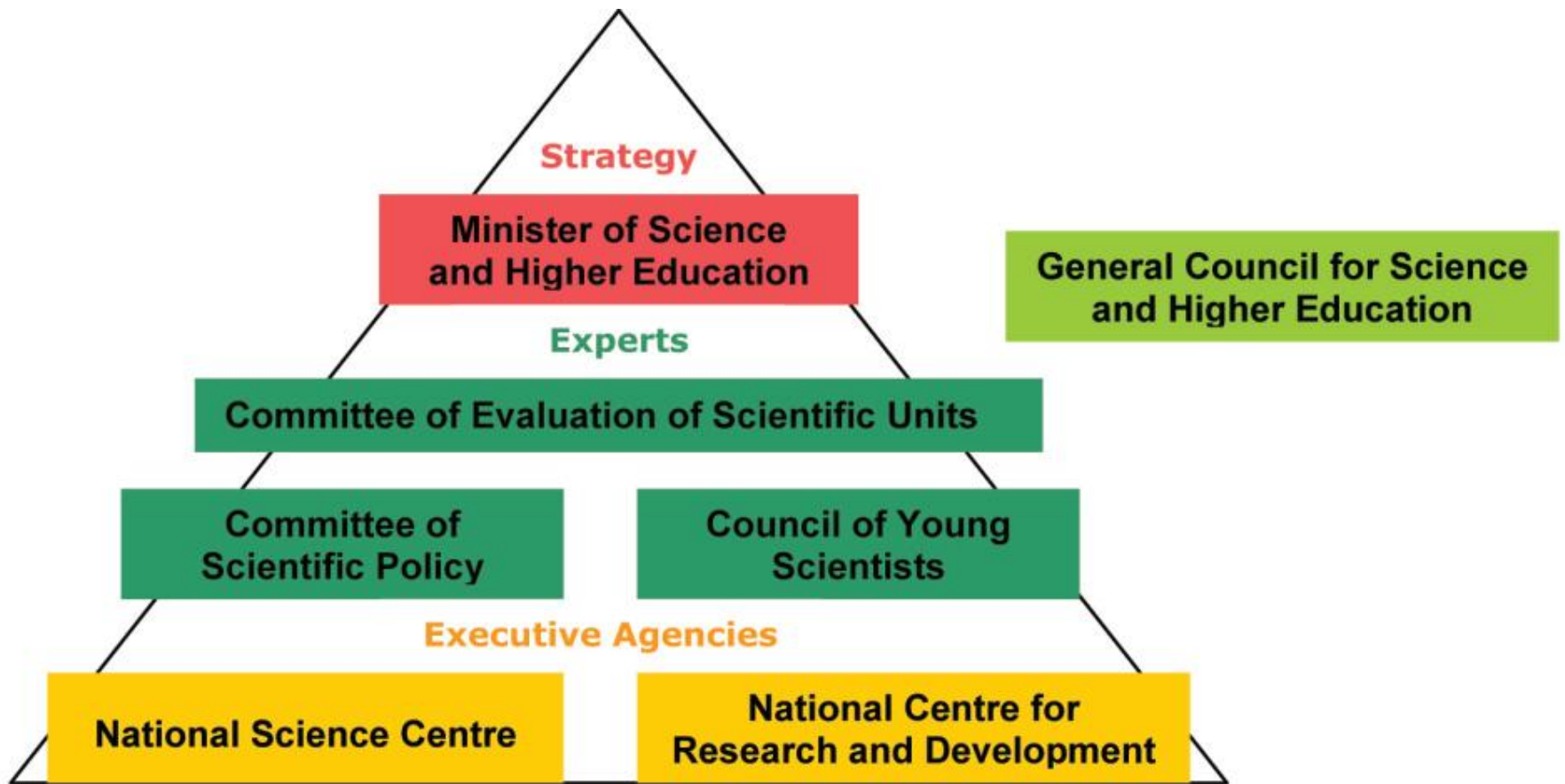
# Did you know?

- Ignacy Łukasiewicz (1822-1882), a Polish pharmacist, is the **father of petroleum industry** and the **inventor of paraffin lamp**. He was the **first in the world to distil pure paraffin and the one who established a crude oil mine** near the town of Krosno (which is still in operation).
- In 1932, Polish mathematicians Marian Rajewski, Henryk Zygałski and Jerzy Różycki, **cracked the code used by the German ENIGMA cipher machine**, thus contributing to many military successes of the allied forces during WW II.
- Andrzej Tarkowski (born in 1933), a Polish embryologist, is the **pioneer of research in the embryology of mammals**. His research created theoretical and practical foundations for the achievements of biology and medicine in the 20th century: in vitro fertilisation, cloning and the discovery of stem cells.
- The international designations of blood types **O, A, B and AB were introduced by a Polish microbiologist, serologist and immunologist Ludwik Hirsfeld (1884-1954)** who also discovered the inheritance mechanism of blood types and the **Rhesus (Rh) factor**.
- **Vitamin studies as an area of science as well as the term “vitamin” itself were established by Kazimierz Funk (1884-1967)**, a biochemist of Polish origin, who also discovered the B1 vitamin (thiamine).
- Until 2005 Ernest Malinowski (1808-1899), a Polish engineer, was the originator and builder of the world's **highest railway (built in Peru in 1876)**. **At present, the highest** railway is in Tibet.
- Jan Szczepanik (1872-1926), called '**Polish Edison**' is the author of 50 inventions and several hundred patented technology **solutions in the areas of colour photography, television, colour weaving**, etc. He features as a character in two short stories by Mark Twain.
- Bronisław Malinowski (1884-1942), a Polish anthropologist, **changed the style of work in anthropology**: from work based on reading and analysis of texts to field work (longterm and deep immersion in the community being studied).
- Today Polish research institutes have **4 active polar research stations**: 1 in Antarctica and 3 in the Arctic.
- Polish students of Warsaw University are at the very **top of the list in the international IT programming contests** such as TopCoder organised by the largest American IT companies and ACM International Collegiate Programming Contest.

# Polish science today

- Huge investments in new laboratories, infrastructure
- 120 000 persons employed within R&D, incl. 97 000 research staff (32 % women )
- 33 000 doctoral students (51 % women)
- 2 mln Bachelors and Master's students (56,4% women)
- Research carried out by 195 higher educational institutions
- Science & Technology Parks are springing up
- Relatively strong in space science, clinical medicine, mining and agriculture
- Biotechnology research is growing steadily, with more than 50 companies.

# R&D Decision and Advisory Bodies (after 2011 reforms)



# Minister of Science and Higher Education (MNiSW)

- In charge of the development and implementation of overall research policy and funding, but shares responsibilities with other institutions
- Ministry's special programmes: ex. *Mobility Plus*, *Ideas Plus*, *Iuventus Plus*, the *National Programme for the Development of Humanities*
- [www.nauka.gov.pl](http://www.nauka.gov.pl)

# Opinion making and advisory bodies

- **The Committee of Scientific Policy** – advises on strategic issues related to research, such as budget, investments, legislation, cooperation between Polish and European scientific research
- **The Committee of Evaluation of Scientific Units** – comprehensively evaluates the quality of R&D activities and proposals for research categorisation, based on funds allocated
- **The Council of Young Scientists** – prepares opinions on project development initiated by the Ministry, issues own proposals in accordance with ideas and interests of young scientists

# National Centre for Research and Development (NCBiR)

- Governmental executive agency financed from the state budget, operates since 2007, based in Warsaw
- Manages and implements scientific and innovative state policy
- Manages and implements **strategic scientific research and development** programmes **that translate directly into innovation development**
- Supports commercialization and other forms of transferring scientific research results to the economy
- Ensures solid conditions for scientists' development
- Implements the tasks commissioned by the Minister of Science and Higher Education.
- Co-finances actions conducted by private sector units and other entities
- [www.ncbir.pl](http://www.ncbir.pl)

# National Science Centre (NCN)

- Governmental executive agency financed from the state budget, operates since 2010, based in Kraków
- Finances research projects in the field of **basic research**
- Projects evaluated and selected by independent experts
- 20 % funds allocated to young scientists (before awarding the doctorate degree or doctors no longer than 5 years after awarding the doctorate degree)
- Special funds addressed to doctorate scholarships and post-doctorate scholarships
- Special funds allocated to experienced scientists involved in pioneering and multidisciplinary projects
- International cooperation within the field of basic research
- [www.ncn.gov.pl](http://www.ncn.gov.pl)



# Polish Academy of Sciences (PAN)

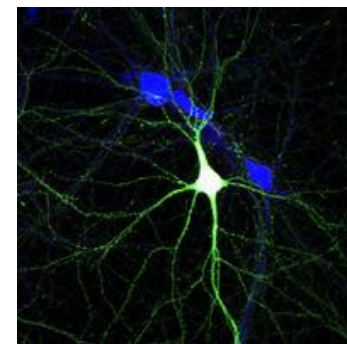
- State scientific institution established in 1951
- Acts as a national advisory body
- As a research institution maintains 70 research establishments, incl. 30 research institutes and 7 research centres, but also libraries, museums and botanical gardens
- Bilateral agreements signed with Indian National Science Academy in 1996 (renewed 2012) and The Council of Scientific and Industrial Research (CSIR) in 1977
- [www.english.pan.pl](http://www.english.pan.pl)



# Polish Academy of Sciences (PAN)

## Competitors in the premier league in science:

- Nencki Institute of Experimental Biology (IBD PAN)
- Institute of Physical Chemistry (ICPF PAN)
- Institute of Organic Chemistry (ICHO PAN)
- Institute of Fundamental Technological Research (IPPT PAN)
- The International Institute of Molecular and Cell Biology in Warsaw (IIMCB) – created with the support of UNESCO and PAN, but independent



# Foundation for Polish Science (FNP)

- Biggest, non-governmental institution funding science in Poland, independent, self financing, non-profit, established in 1991
- For Indian citizens currently available the following programmes: Homing Plus, TEAM, IDEAS FOR POLAND, Welcome, International PhD Projects (MPD)
- [www.fnp.org.pl](http://www.fnp.org.pl)



# Polpharma Scientific Foundation

- Established in 2001 by a private company Polpharma SA which is the largest Polish manufacturer of generic drugs and pharmaceutical substances.
- Finances and initiates research and practical solutions, providing scholarships and awards
- Promotes knowledge among scientists, business, society
- [www.polpharma.pl/en/foundation](http://www.polpharma.pl/en/foundation)





# EURAXESS POLAND



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## POLAND WELCOMES RESEARCHERS

Welcome to EURAXESS Poland, a part of the European EURAXESS Services network across Europe, which is a joint initiative of the European Commission and the countries participating in the European Union's Framework Programmes for Research.

EURAXESS Poland Portal is an information point for internationally mobile researchers wishing to come to Poland or intending to pursue scientific career abroad.

The Polish EURAXESS Services network provides free and personalised assistance to mobile researchers and their families in various matters relating to their professional and daily life, as is stated in the [EURAXESS Services Commitment](#).

**Contact one of our ten [Service Centres](#) to receive more information!**

Last Updated on Friday, 02 December 2011 09:14

### Search for Services

Target Group

Type of Service



### Service Centers in Poland

### Jobs in Poland

Latest jobs available:

Assistant in Department of Building Engineering

26-06 - Politechnika Rzeszowska (Rzeszow University of Technology) - Research Fields: Engineering

Assistant professor in Department of Chemical Engineering and Process Control

26-06 - Politechnika Rzeszowska



### News:

- Fellowship programme for PhD students from the Eastern Partnership countries
- EC consultation on entry procedures of non-EU nationals

- RESEARCHERS MOBILITY
- People programme
- Ideas programme
- Joint Research Centre programme
- Research infrastructures
- Euraxess
- Entry conditions

### People programme

The researchers thinking about coming to Poland can apply for one of the Marie Curie Fellowships available under the Specific Programme PEOPLE, which is the part of the Seventh Framework Programme dedicated to the international and intersectoral mobility of researchers. The fundamental idea of the Marie Curie Fellowships is to stimulate the development of the researchers' careers through mobility from one country to another, or from academia to industry and vice versa. There is no pre-defined thematic priority area; all actions are open to all research topics. The most of the actions is now open to the Third Country (non EU) researchers.

The Marie Curie Fellowships are dedicated to two types of researchers, depending on their type of research experience:

- Experienced Researchers - researchers who are either in possession of a doctoral degree (independently of the time taken to acquire it) or have at least four years of full-time equivalent research experience.
- Early Stage Researchers - researchers in the first four years of their research careers, measured from the date when they obtained the degree which would formally entitle them to embark on a doctorate.

All the benefits of Xresearchers resulting from the participation in MC projects are income tax free in Poland. The researchers planning their travel to Poland, or looking for help during their stay may contact the EURAXESS SERVICE in Poland, which is the part of the EURAXESS SERVICE Network in Europe, specializing in providing help for mobile researchers:  
<http://www.euraxess.pl>

More information can be found on the following web sites:  
[http://cordis.europa.eu/fp7/people/home\\_en.htm](http://cordis.europa.eu/fp7/people/home_en.htm)  
[http://ec.europa.eu/research/fp6/manecune-actions/indexhtm\\_en.html](http://ec.europa.eu/research/fp6/manecune-actions/indexhtm_en.html)



CRYSTAL BRUSSELS PRIZE



Ministry of Science and Higher Education  
Republic of Poland



#### People

**Bogna Hrynyszyn, M.A.** - NCP Coordinator

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#### PEOPLE PROGRAMME

##### EUROPEAN RESEARCHER

- Opportunities
- Intra European Fellowships
- International Outgoing Fellowships
- European Reintegration Grant
- International Reintegration Grant
- Initial Training Network
- Industry Academia Partnership and Pathways

##### THIRD COUNTRY RESEARCHER

- Opportunities
- International Incoming Fellowships
- Initial Training Network
- Industry Academia Partnership and Pathways
- International Staff Research Exchange Scheme

##### INSTITUTIONS OFFERING MARIE CURIE VACANCIES IN POLAND

- List of institutions
- Research Job Vacancies (Euraxess jobs)

## News

### Polish consortium of scientific institutes creates modern vaccines

Package of vaccines with route of administration other than injection is being developed by the Institute of Biotechnology and Antibiotics (IBA) in the academic consortium of the University of Gdańsk and Institute of Biochemistry...



Polish chemist on the podium in FameLab...



Polish bioplasts will save faces of...



New discoveries in Berenice



"Berinka" - decoded history of Europe in...

## Interesting facts



### Polish wisent are doing well on Bornholm

The herd of seven Polish wisent brought at the end of May to the forest complex Almindingen on Bornholm, feels well. The animals are slowly getting used to the new environment. They will soon become a new tourist attraction of the Danish island.

[MORE >](#)



### Most Poles use web regularly

Fifty-six percent of Poles in a CBOS survey declared to use the internet regularly, including 93 percent of 18-24-year-olds and 81 percent of 25-34-year-olds. Only 11 percent of Poles over 65 use the web.

[MORE >](#)

# Scientific links between Poland and India



- *The Agreement on Cooperation in Science & Technology between Poland and India* signed in 1974, replaced by a new agreement in 1993
- Polish-Indian mixed committee selects common projects in various fields (incl. agriculture, biotechnology, geology, chemistry)
- This year the Polish Academy of Sciences (PAN) renewed the bilateral agreements with The Indian National Science Academy in 1996 and The Council of Scientific and Industrial Research (CSIR) in 1977.
- For the last 25 years successful cooperation between PAN and Indian partners on treatment of lymphatic illnesses (so called „*Elephant legs*”)
- In the 70-s and 80-s Polish engineers participated in the construction of coal mines and various infrastructural projects in India.
- Recently, conservators from Poland, restored murals and interior designs in the Palace of Jodhpur. These were created by Stefan Norblin, famous Polish artist, who during WW II found his shelter in India
- Studies and research in Indian languages and literature developed in Krakow (Chair of Sanskrit since 1893), Warsaw, Wroclaw and Poznan. During the 19th century, several Sanskrit classics were translated into Polish and a "*History of Ancient India*" in Polish was one of the first of its kind to be published in Europe

# App. 45 R&D centres set up by foreign companies

- IBM
- Motorola
- Siemens
- Lufthansa
- Hewlett Packard
- GlaxoSmithKline
- ABB
- Google
- Microsoft
- Unilever
- General Electric
- Samsung
- Delphi
- Oracle
- Wabco
- Plisa
- Lufthansa
- Maersk
- Philips
- Accenture
- Volvo
- Aircraft Engines Aerospace
- AVIO Group
- Pratt & Whitney

# 32 Technological Parks in Poland

- 523 institutions and 18 research centres
- In total 16 500 work places

The most prosperous among Polish Technology Parks are:

- Krakow Technology Park, [www.sse.krakow.pl](http://www.sse.krakow.pl)
- Poznan Science and Technology Park, <http://www.ppnt.poznan.pl/web1/page>
- Pomeranian Science and Technology Park in Gdynia, [www.ppnt.gdynia.pl/en.html](http://www.ppnt.gdynia.pl/en.html)
- Wrocław Technology Park, [www.technologpark.pl](http://www.technologpark.pl)
- Lublin Science and Technology Park, [www.lpnt.pl](http://www.lpnt.pl)
- The Opole Science and Technology Park, <http://opnt.pl/en/>
- Scientific Technological Park „TECHNOPARK GLIWICE”,  
<http://www.technopark.gliwice.pl/eng>
- Łódź Regional Park of Science and Technology , <http://www.technopark.lodz.pl/eng/>
- Plock Industrial and Technological Park, <http://www.pppt.pl/uk/index.php>
- Scientific Technological Park in Podkarpackie Voivodship in Rzeszów, [www.rarr.rzeszow.pl](http://www.rarr.rzeszow.pl)
- The Lower Silesian Technological Park, <http://www.t-park.eu/index.php>



# Areas of potential R&D cooperation

- Environment protection (water management, waste-water purification)
- Non-conventional energy sources (solar & wind energy & bio-fuels & biomass)
- Gas exploration (shale gas, coal bed methane, tight gas)
- Coal mining and processing
- Chemicals (inorganic, organic, dyestuff, pesticides)
- Biotechnology (bioengineering, molecular & cell biology)
- Physical and organic chemistry
- Health care (pharmaceuticals, medical equipments)
- Agriculture (milk processing equipments, agricultural productivity)
- Industrial products (machines & technological equipment, auto and electrical components)
- Information technology (hardware & software & BPO)



Ministry  
of Foreign Affairs  
Republic of Poland

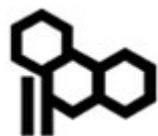
# **Catalogue of technologies**

developed by

## **Polish Research Institutes**

- Enlists Institutes willing to cooperate with Asia
- Available on memory stick

# Willing to cooperate with Asia



**Institute of Industrial  
Organic Chemistry**  
(Instytut Przemysłu Organicznego)

**Industrial Chemistry  
Research Institute**  
(Instytut Chemii Przemysłowej)



**INSTITUTE OF HEAVY ORGANIC SYNTHESIS  
„BLACHOWNIA”**  
(Instytut Ciężkiej Syntezy Organicznej „Blachownia”)



**Metal Forming Institute**  
(Instytut Obróbki Plastycznej)



**Institute of Non-ferrous  
Metals in Gliwice**



**Instytut Odlewnictwa**  
rok założenia 1946

**Foundry Research Institute**

# Willing to cooperate with Asia

**Institute of Biopolymers and Chemical**  
(INSTYTUT BIOPOLIMERÓW I WŁÓKIEN CHEMICZNYCH)



**INSTITUTE OF ENGINEERING OF POLYMER  
MATERIALS AND DYES**  
(INSTYTUT INŻYNIERII MATERIAŁÓW POLIMEROWYCH I  
BARWNIKÓW)

**Institute of Nuclear Chemistry**  
(INSTYTUT CHEMII I TECHNIKI JĄDROWEJ)



# Willing to cooperate with Asia



**THE RESEARCH AND DEVELOPMENT CENTRE FOR BUILDING INSULATION  
INDUSTRY**

(CENTRALNY OŚRODEK BADAWCZO ROZWOJOWY PRZEMYSŁU IZOLACJI BUDOWLANEJ)

**INSTITUTE OF CERAMICS  
AND BUILDING MATERIALS**



**Instytut Ceramiki  
i Materiałów  
Budowlanych**



**Road and Bridge Research Institute**

(Instytut Badawczy Dróg i Mostów)

**REASERCH AND DEVELOPMENT CENTRE OF HOSTING MACHINERY  
AND MECHANICAL CONVEYINY EQUIPMENT “DETRANS”**

(OŚRODEK BADAWCZO-ROZWOJOWY DŹWIGNIC I URZĄDZEŃ TRANSPORTOWYCH)



# Willing to cooperate with Asia



Instytut  
Elektrotechniki  
Electrotechnical Institute

**The Institute of Advanced  
Manufacturing Technology**  
(Instytut Zaawansowanych Technologii  
Wytwarzania)



**RESEARCH AND DEVELOPMENT CENTRE OF ELECTRIC  
MACHINES "KOMEL"**

(BRANŻOWY OŚRODEK BADAWCZO-ROZWOJOWY MASZYN ELEKTRYCZNYCH  
„KOMEL”)



**Institute of Electron  
Technology**

(Instytut Technologii Elektronowej)



**Institute of Electronic Materials Technology**  
(INSTYTUT TECHNOLOGII MATERIAŁÓW Elektronicznych)

# Willing to cooperate with Asia

(mining industry sector)



**Oil and Gas  
Institute**  
(Instytut Nafty i Gazu)



**Polish Geological  
Institute**  
(Państwowy Instytut Geologiczny)



**Institute of Innovative  
Technologies**  
(Instytut Technik Innowacyjnych)

**Institute of Mining  
Technology**  
(INSTYTUT TECHNIKI  
GÓRNICZEJ)



# Willing to cooperate with Asia



**NATIONAL MARINE FISHERIES RESEARCH  
INSTITUTE**  
(Morski Instytut Rybacki)

**Maritime Institute**  
(Instytut Morski)



**WOOD TECHNOLOGY INSTITUTE**



**Forest Research  
Institute**  
(Instytut Badawczy Leśnictwa)

**Institute of Technology and  
Life Science**  
(Instytut Technologiczno – Przyrodniczy)



**National Veterinary Research  
Institute**  
(Państwowy Instytut Weterynaryjny)

**National Research Institute  
of Animal Production**  
(Instytut Zootechniki)



# Willing to cooperate with Asia

## **POLISH PACKAGING INSTITUTE (CATEGORY A)**

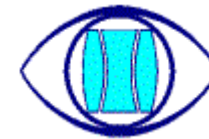
(CENTRUM OŚRODEK BADAWCZO – ROZWOJOWY OPAKOWAŃ  
(INSTYTUT BADAWCZY KAT.A))



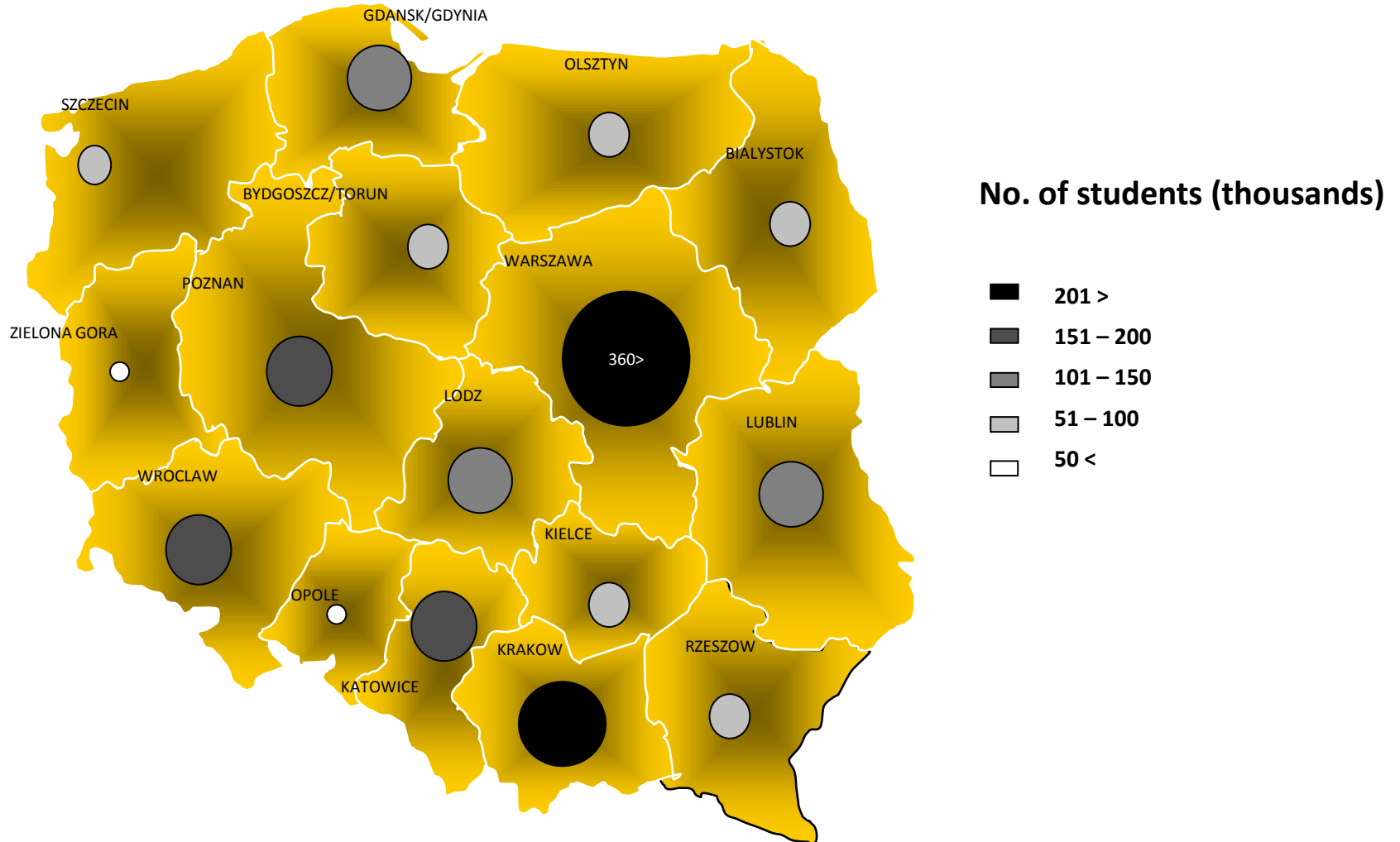
## **THE CARDINAL STEFAN WYSZYŃSKI INSTITUTE OF CARDIOLOGY**

INSTYTUT KARDIOLOGII

**Institute of Applied Optics**  
(Instytut Optyki Stosowanej)



# Main academic centers in Poland



# Higher education system

- Total number of academic institutions equals 458 (132 public and 326 private):
  - 22 Universities with social & theoretical science
  - 17 Technical Universities
  - 9 Medical Universities
  - 7 Agricultural Academies
  - 90 Schools of Economics/Business/Management
  - 21 Academies of Art., incl. Film
  - 18 Pedagogical Schools
  - 15 Theological Schools
  - 6 Academies of Physical Education
  - 2 Maritime Schools, few military, police
- Three stages: Bachelor (Licencjat, Inżynier), Master (Magister), and PhD (Doktor).  
This applies to all fields except for Law, Pharmacy, Psychology, Veterinary Medicine, Medicine and Dentistry, which are based on two-stage system (Master and Doctor).
- Complies with the Bologna Declaration, incl. accumulation and transfer of credits (ECTS)
- 2 million students (2/3 enrolled at public institutions), 400 thousand graduates every year
- 8 major universities attract more than 50% of all R&D funds in the higher education sector



# Higher public educational institutions

## Top educational institutions in Poland:

- University of Warsaw
- Jagiellonian University in Krakow
- Warsaw University of Technology
- Adam Mickiewicz University in Poznan
- Wroclaw University of Technology
- AGH University of Science and Technology in Krakow
- University of Wroclaw
- Technical University of Lodz
- Warsaw School of Economics
- Poznan University of Medical Sciences
- Medical University of Warsaw
- Warsaw University of Life Sciences - SGGW



# Higher non-public educational institutions

## Top private educational institutions:



- The Warsaw School of Social Sciences and Humanities
- Collegium Civitas, Warsaw
- National Louis University (WSB-NLU), Nowy Sącz
- Academy of Cracow
- Kozminski University, Warsaw
- Polish-Japanese Institute of Information Technology

# Master of Business Administration in Poland

## Top MBA Programmes:

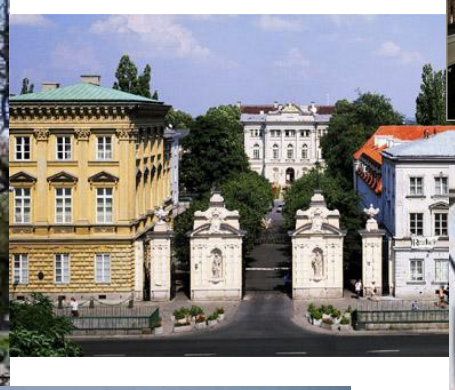
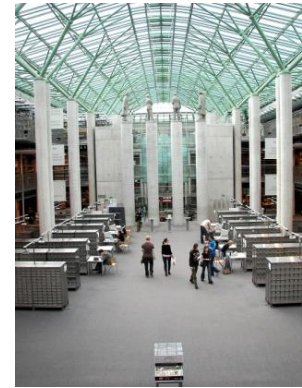
- Warsaw-Illinois Executive MBA, International Management Center of Warsaw University
- Executive MBA Programme, Kozminski University, Warsaw
- Canadian Executive MBA (CEMBA), Warsaw School of Economics



# Why study in Poland?

- Obtained degree recognized internationally
- Broad selection of courses, majors and specialisations – the most popular faculty that foreign students choose to study in Poland is medicine (30%)
- Curricula available in English/English as a medium of instruction
- Studying in Polish possible after 1- year-long Polish language & culture course organized at several universities
- Prize level competitive!
- Possibility to work: with a student visa for 3 summer months, with a stay card like Polish nationals
- Heart of Europe – within 2-3 hours you can reach all European capitals
- Safe country! One of the lowest crime rates in Europe.

# Studying in Poland



# Internet Resources on Poland's Science

- Mobility Portal Poland – [www.euraxess.pl](http://www.euraxess.pl)
- Polish Network of EURAXESS Service Centres – [mobility@kpk.gov.pl](mailto:mobility@kpk.gov.pl)
- Ministry of Science and Higher Education – [www.nauka.gov.pl](http://www.nauka.gov.pl)
- National Center for Science – [www.ncn.gov.pl](http://www.ncn.gov.pl)
- National Centre for Research and Development – [www.ncbir.pl](http://www.ncbir.pl)
- Polish Academy of Sciences – [www.pan.pl](http://www.pan.pl)
- Foundation for Polish Science – [www.fnp.org.pl](http://www.fnp.org.pl)
- National Contact Point – [www.kpk.gov.pl](http://www.kpk.gov.pl)
- Science & Scholarships in Poland - [www.naukawpolsce.pap.pl](http://www.naukawpolsce.pap.pl)
- Study in Poland – [www.studyinpoland.pl](http://www.studyinpoland.pl)



**THANK YOU FOR YOUR ATTENTION**