

The World Year of Physics 2005 activities in Poland

Activities of the World Year of Physics 2005 in Poland are presented (in Polish language) on the website <http://fizyka2005.fuw.edu.pl> , where many photos from the events are included.

- **Structure (national committee, etc.) has been implemented for WYP**

National Committee was situated at the Main Board of the Polish Physical Society. Two persons co-ordinated organisation of WYP2005 events – prof. Marta Kicinska – Habior (chairman of the National Committee) & prof. Maciej Kolwas (president of the Society).

Structure of organisation was four-fold:

First way- all 18 divisions regional selected representatives responsible for organisation of events.

Second way – all Deans of faculties were informed at the meeting of Deans and they organized events: special sessions, open days festivaes etc.

Third way:

There was a number of centrally organised by National Committee meetings and celebrations

Fourth way:

Spontaneously organised regional events, mainly performances and happenings, in small towns and even villages

*** Which funding did you get (amount, origin - government, industry...), and the various types of sponsoring**

	PLN	Euro
PL Government	153 000	38 250
foundations	93 500	23 375
EU	190 000	47 500
schools, Universities, local governments	1 000 000	250 000
other	1 500	375
Private enterprises (publishing companies)	100 000	25 000
Total	1 538 000	384 500

*** The activities and their success: exhibits, actions in schools, physics outreach, open doors in universities, interactive experiments, etc.**

I. Participation in international events

1. **"International Launch Event of the World Year of Physics"**:

coordinator in Poland: Professor Jan Mostowski, Warszawa

Participation of the eighteen winners of the Olympic Games in Physics and the International Young Physicists' Tournament in the "Physics for Tomorrow" event, January 13-15, Paris

2. **"Physics enlightens the world"**:

coordinator in Poland: Professor Leszek R. Jaroszewicz, Warszawa

The light signal came into Poland from Medyka (Ukraine) and Terespol (Belarus) at 21:00 on April 19 and has been sent to Slovakia from Zwardon at 22:00 the same day. In Poland 1300 participants took part in the event, which was very well organized. Thus, Poland got 9th place in participation among other countries. All participants have been expressing enthusiastic opinions about the idea and the program of action. Radio and public TV programs with interviews with WYP 2005 coordinators informing about the event itself, WYP2005 and teaching physics in Polish schools were created and transmitted at the time of popular serial programs.

3. **"Physics Talent Search"**:

coordinator in Poland: dr Anna Kaczorowska, Warszawa

We had 512 participants from 58 towns: 8 in the age-group of 10-12, 225 in the age-group of 13-15 and 279 in the age-group of 16-18. They got 437 national diploma "Polish WYP 2005 Physics Talent" and 262 "International Honorable Mentions in the WYP 2005 Physics Talent Search". The finals took place on June 17 and 18 in the largest lecture hall at the Physics Faculty, Warsaw University. Five out of 61 young people were recognized as "International WYP 2005 Physics Young Ambassadors". It was a big entertainment reported by the public Television and transmitted even in the news. Works presented by those young people represented a very high level. They visited Taiwan meeting at the end of the 2005.

II. Special actions in Poland

1. **"National experiment"**. The main aim of the experiment was acquainting school students with a real physics measurement, analysis of the measured data and discussion of the results. After many discussions the theme of the experiment was set as "Measurement of air pollution with dust in Poland". The leading coordinator of the event: Dr Bogumila Myslek-Laurikainen was chosen. Tests of the proposed method of the measurement and choosing the right equipment were going till November 2004. Then a lot of effort was put into advertising the event. Information was sent directly to about 250 schools, announcements were placed on the Polish WYP 2005 website and also on the website of the Polish Ministry of National Education and Sport and on websites of school superintendent's offices. There was also information on the Internet Press Service and in TV and Radio programs. In January 2005 elements of equipment to send in sets to participating schools were purchased and the set-ups have been completed. Instruction of the experimental method was prepared and tested in two collaborating schools.

Registration of schools interested in participation was done till the end of March 2005. The e-mail mailing list of the schools was made. It was 140 secondary schools interested in participation in the experiment. To all of them the set-ups of equipment (special air pollution filter and the end-piece ready to mount the filter on the typical vacuum cleaner, plastic bag with 6 m³ volume to calibrate vacuum cleaner, set of aluminium plates with known weight around 1-10 mg to learn precision weigh) and the detailed instruction were sent. Date of the experiment was set on April 14 at noon. 109 schools responded sending reports of the measurement with their results. Used filters were also sent back by schools to us, what gave a possibility to check their results. They were correct in about 90% schools. Results were collected and a map with the density of air pollution with dust was constructed. The action was reported by Public Television TVP1. The report with the list of participated schools and the map with the density of air pollution with dust was placed on the Polish WYP 2005 website.

2. Competition to take the best photograph illustrating the topic “Where is physics?” was organized in collaboration with WSiP Publishing Company and the leading coordinator was Maria Dobkowska. Rules and regulations for the competition, registration form and poster were ready till the end of September 2004. Announcement about the competition was placed on the Polish WYP 2005 website and on the WSiP Publishing Company website and also in all advertising actions for WYP 2005 events in Poland. There were 3 categories for photos: physics experiment, observation of physics phenomena, physics and art. Photos made by school students had to be sent to the Organizing Committee in the time period from January till the end of March 2005. There were 1660 registered participants and more than 2000 photos sent. All the photos were evaluated by the Jury. Winners were nominated on June 1. Three main prizes in each category and 15 additional prizes were awarded. Exhibition of the best photos and awarding took place during the Congress of Polish Physicists in Warsaw in September 2005. The best photos are placed on the WSiP Publishing Company website

<http://www.wsip.com.pl/Portal?refId=4G325M7N44Q04L45AWK5HWC8>

3. Competition to prepare the website on “How does it work? – Physics on sail” was organized in October 2005. The leading coordinator was Dr Jan Grabski. Rules and regulations for the competition and registration form were done till the end of June 2005.

The competition was referring to the sailing cruise at “Pogoria” sail, organized for 26 physics students at the Warsaw Technical School. They sailed from Genua to Erice and Neapol in February and March 2005. Series of physics experiments and lectures which illustrated physics laws on a boat had been done during the cruise.

4. “Science on Stage” is the annual action with well prepared and tested methods of work. The main organizer: Adam Mickiewicz University, Poznan, and the leading coordinator: Prof. Wojciech Nawrocik was chosen already in 2003. Polish edition which was also elimination for European Intergovernmental Research Organisation's Forum festival was held in May 2005. It was a competition on performance, presentation of experiment and a lecture about physics mainly for teachers showing their work. 200 teachers from all over the country participated in the event. As a result 14 physics shows, 11 performances, 17 multimedia presentations was prepared and presented by participants. Some of the best shows were presented on a special session at the Congress of Polish Physicists in September 2005.

5. **“Young Physicists Tournament”** is the annual action with well prepared and tested methods of work, organized under the auspices of Polish Physical Society. The leading coordinator: Dr Dorota Klinger from Institute of Physics of the Polish Academy of Sciences in Warsaw, with the Organizing Committee approved the Rules and regulations for the competition for year 2005 on September 2003. The announcement was placed on the website of Polish Physical Society and the Polish WYP 2005 website. The Tournament is an international competition for scientific work of five-persons ensembles of secondary school students (age 16-19). This year on the national level ensembles from 14 Polish towns took part in the competition which consisted of 3 stages. In the final stage 6 winners were nominated.

6. **“Student’s competition on Physics and Ecology”**

The main organizer: Youth Palace, Katowice and the leading coordinator: Urszula Woznikowska-Bezak were chosen in March 2004. Organizing Committee discussed Rules and regulations for the competition. They were ready together with the registration form and poster till the end of September 2004. Announcement about the competition was placed on the website of the Youth Palace and was sent to schools. Competition consisted of 3 stages. The final III stage was held on April 7, 2005 in Youth Palace, Katowice. 30 teams from mainly Silesian secondary schools participated.

Main subjects of students presentations were:

- Radioactivity around us
- Radioactive carbon- universal isotope
- Tritium in atmospheric precipitation
- Isotopes from nuclear explosions
- Radioactivity around carbon power plants

Jury evaluated the presentations and nominated the winners.

7. **XXXVIII Congress of Polish Physicists, Warsaw, September 11-16, 2005**

The main organizer: Warsaw University of Technology, and the leading coordinator: Prof. Jerzy Garbarczyk, were chosen in 2003. Most of the preparatory activities were done during the first half of the year 2005. Organizing Committee of the Congress met several times discussing scientific program, lecturers, accompanying activities for physics teachers and school students. Website, posters and book of abstracts were prepared. Prizes for achievements in research in physics, in teaching physics, in popularizing physics and for the best MSc and PhD thesis were decided. Then the qualification of candidates sent by Polish Physical Society local branches was performed in several categories and the winners were chosen. Registration of 600 participants from all over the country and technical adjustment of lecture halls were done till the end of June 2005.

The results obtained:

- training of teachers in contemporary results of physics,
- presentation of the most spectacular results of world and Polish physicists to general public and physicists working in different domains,
- presentation of the impact of science on contemporary life.

The plenary lectures will be published in the Polish Physical Society journal “Postepy Fizyki”. Their abstracts were published in the Congress book of abstracts and are also presented on the internet pages of the Polish Physical Society: <http://info.fuw.edu.pl/ptf>

8. **XII International Conference of Young Scientists, Katowice, April 25-30, 2005**

The leading coordinator was Urszula Woznikowska-Bezak, president of ICYS, from the Youth Palace Katowice. The Organizing Committee discussed elements of the program: science, cultural and social parts. Then the long term creative work with teenagers on their own projects in mathematics, physics and ecology was performed at the Youth Palace Katowice. The same time information about the prepared conference was spread all over the world. Finally, 120 young science enthusiasts (age 14-17) had come to Youth Palace Katowice for ICYS 2005 from Poland and 12 countries: Byelorussia, Brazil, Czech Republic, Holland, Indonesia, Lithuania, Macedonia, Germany, Russia, Ukraine, USA and Hungary. They had prepared short research presentations concerning their own achievements and delivered them during the ICYS 2005. Winners in categories: mathematics, ecology, physics and computer science were chosen by the Jury. Within the cultural and social programs the participants had an opportunity to listen to performance of Symphonic Orchestra and to see a street-theatre play, as well as went for a trip to Cracow.

The main aim of ICYS 2005 was creating proper circumstances and atmosphere to promote and spread science by interdisciplinary demonstrations of interesting experiments and presentations of science work's results. The challenge of the organizers was inspiring the young, talented people to creative quest for what is still not discovered and forming propulsions to improve fondness of knowledge with they can get thanks to their own work.

Report form the Conference was published in the special edition of the Youth Palace Journal "Reakcja", in both languages: Polish and English.

Besides those national events **more than 100** local events have been planed and organized in small towns and villages

III. Annual actions in 2005

1. Lectures with presentations for school children and youngsters at universities and physics institutes
2. Contests and Olympic Games in Physics for school children and youngsters
3. Workshops for talented youngsters at the Universities
4. "Science Festivals" in several towns:

Kielce	17-25.09
Opole	16-18.09
Poznan	12-15.10
Szczecin	17-24.09
Warszawa	16-25.09
Wroclaw	16-23.09

- **did you make videos, cinematographic material...**

The films and programs created in cooperation with Public Television will be also recorded on CD's and sent to schools all over the country. Polish National Philharmonic will produce CD with recording of the Symphony for the World Year of Physics 2005 – "Sinfonia de Motu" composed by the great Polish composer Wojciech Kilar.

*** involvement of press, media, TV, radio...**

1. Radio programs informing about WYP2005 ideas and events, contemporary physics and teaching of physics in Polish schools were created and transmitted. Many of the programs were transmitted during the large WYP 2005 actions: Physics enlightens the world, Physics Talent Search, National experiment and first presentation of the Symphony for the World Year of Physics 2005 – “Sinfonia de Motu” composed by the great Polish composer Wojciech Kilar.

2. TV programs informing about WYP2005 ideas and events, started during the action “Physics enlightens the world” and were created and transmitted few times during the year.

Special TV programs and films are still under preparation. The films cover following topics and are done in 30-80%:

- “Physics in telecommunication”
- “Physics in medicine”
- “Physics in atmosphere – from weather observations to weather forecast”
- “Future of energetics”
- “Physics of cars today and in the future”

TV debate about liaison between science (physics), culture and every-day life is nearly done. Delay in realization of the TV programs and films, is due to the delay in obtaining the financial support from EU.

3. WYP 2005 in Poland was reported in magazines and newspapers. Some of the articles were written by the coordinator of WYP 2005 in Poland, some by coordinators of the events, and some by the press people.

1. Internet Science Service PAP
2. Postepy Fizyki
3. Swiat Nauki
4. Physics Today
5. Dziennik Zachodni
6. Gazeta Wyborcza
7. Delta
8. Fizyka w Szkole
9. Mlody Technik

*** advertising material, stamps, coins...**

1. Books published on the occasion of WYP 2005:

- “Albert Einstein – 5 prac, które zmieniły oblicze fizyki”
- „Autobiografia i wspomnienia o Piotrze Curie” – Maria Sklodowska-Curie

2. Posters (A1 and A4)

3. Post card with the WYP 2005 logo

- **contact with policy-makers**

WYP 2005 in Poland was organized under the auspices of the President of Poland Aleksander Kwasniewski, president of Warsaw Lech Kaczynski, local Warsaw parliament and many presidents of local governments.

*** statistics - did you already get information on the influence of WYP on student enrolling?**

Not yet – however, an experience of Adam Mickiewicz University in Poznan as a result of Physics on Stage action, showed a great increase of interest among candidates to study physics at the University.

The World Year of Physics in Poland seems to have very large impact especially in small towns and villages where it united physics teachers, local authorities and youngsters with one idea – to show that physics is everywhere, it is interesting, not so difficult and is indispensable. It also helped to get financial support for schools in small towns and villages. Those who have organized an event plan to repeat it in 2006 or 2007.

We plan to continue the Physics Talent Search competition on the national level because it seems to be very important to bring many youngsters to physics and it helps physics teachers to make physics interesting at the school level.

Illustration for the success of the World Year of Physics actions during the first half of the year 2005 are photos shown below. More photos may be found on the website: <http://fizyka2005.fuw.edu.pl>