

NEWSLETTER

*The Henryk Niewodniczański Institute of Nuclear Physics
Polish Academy of Sciences*



IN THIS EDITION (APRIL-JULY 2023)

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E-mail:
doi@ifj.edu.pl

AWARDS AND DISTINCTIONS

During the “Science for Society” Congress (3-5 June 2023), prof. Bogdan Fornal was awarded a statuette for the scientific category A+ granted to IFJ PAN from the hands of prof. Przemysław Czarnek, Minister of Education and Science. The award was granted to the Institute for **its activities for popularization of achievements having an impact on the development of modern society.**



IFJ PAN RECEIVED AN AUTHORIZATION OF THE PRESIDENT OF THE NATIONAL ATOMIC ENERGY AGENCY

On July 3, 2023, at the Symposium of the Polish Radiological Protection Consortium taking place on the premises of the Institute, Prof. Tadeusz Lesiak, Director of the Institute of Nuclear Physics PAN, received a decision on granting an authorization to IFJ PAN from the hands of the President of PAA.

The authorization covers two areas:

1. **radiological assessment of the environment before the localization and during the commissioning and exploitation of a nuclear power facility;**
2. **assessment of individual and environmental dosimetry systems for a nuclear power facility and measurements in its area.**

Before granting the decision by the President of PAA, IFJ PAN had to submit an application and its attachments to be analyzed by experts from PAA. The aim of the analysis was to verify whether the Institute had the appropriate staff and technical equipment

necessary to carry out nuclear safety analyzes in a reliable and impartial manner. The granted authorization confirms the high quality of services provided by the Institute in terms of nuclear safety.



IFJ PAN is the eight unit to receive the authorization from the President of PAA.

In terms of activities related to the supervision and control of nuclear power facilities, the President of the National Atomic Energy Agency may use the help of authorized laboratories and expert organizations only. Before the ceremony, the President of PAA, Andrzej Głowacki, had a possibility of visiting the laboratories of the Institute.

AWARDS AND DISTINCTIONS FOR EMPLOYEES

- **Prof. Antoni Szczurek** – the Gold Medal in recognition of his service for science and higher education, including significant achievements in the field of scientific, didactic and organizational activity – **“Meritorious Service to Polish Science Sapientia et Veritas”**



- **Dr hab. Dariusz Góra** – the title of professor in the field of natural sciences and the discipline of physical sciences

REVIEW OF ACTIVITY APRIL – JULY 2023

- The IFJ PAN Scientific Council has approved the Financial report and Report on IFJ PAN scientific activity in 2022. Prof. Bogdan Fornal's presentation is available at this link: www.ifj.edu.pl/dzialy/don/dzialalnosc-statutowa/2022/pdf/prezentacja-sprawozdanie-2022-BFornal.pdf
- Changes in the provisions of the IFJ PAN Organizational Regulations and the formation of a new scientific department at DAI – the **Department of Applied Superconductivity (ZNS)**
- Changes in the IFJ PAN Access Regulations – strict verification of access to the premises of the Institute resulting from the security alerts in force on the territory of Poland
- Changes in KISD authorities: since July 1, 2023 – the function of **the Director of KISD has been taken by dr hab. Mariola Klusek-Gawenda, while dr. hab. Jakub Bielecki has been appointed as Deputy Director**
- In the second quarter of this year, the IFJ PAN Supplies Department registered 950 purchase order requests and conducted 43 tender procedures (including 22 for supplies and 21 for services) – (above the threshold of 10 000 PLN and below the threshold of Government Procedures) of the total value of 1 256 056 PLN.

CONSTRUCTION WORKS AT THE INSTITUTE OVER THE PERIOD OF APRIL TO JULY 2023

At the turn of April and May 2023 we completed construction works aiming to provide disabled people with easier access to individual buildings situated on the premises of the Institute. Two new passenger and goods lifts in buildings 0 and 1 and a passenger lift in building 4 were put into service, and special platform lifts for transporting disabled people were installed in buildings no. 1 and 4 (a passage way connecting building 4 and 5).

SELECTED ACTIVITIES CARRIED OUT IN CONNECTION WITH THE IMPLEMENTATION OF THE HRS4R STRATEGY AT IFJ PAN OVER THE PERIOD OF APRIL TO JULY 2023

TRAININGS AND MEETINGS

- On-line training for employees and PhD students (IFJ PAN Computer and Network Support) **on the principles of safe use of IFJ PAN network** with a test verifying the knowledge – the training is obligatory for all employees and PhD students using the IFJ PAN network
- Training “**Mentoring in a scientific institute**” for a selected group of IFJ PAN employees (14 participants)
- Training “**Solving conflicts in and between teams**” for heads of scientific and administrative departments (39 participants)
- Organization of workshops with the possibility of applying for **ERC grants**, Katarzyna Kubica-Oroń (National Contact Point), Prof. Katarzyna Kosek-Szott, former member of the European Research Council
- Co-organization of **Horizon Europe InfoDay PolSCA PAN regional meetup at IFJ PAN**
- Lecture entitled “**A review of problems related to the transfer of technology developed in national scientific and research units**” delivered by dr inż. Krzysztof Maternicki, Department of Intellectual Property Protection of the Center of Innovation, Warsaw University of Technology
- Organization of a first aid training in emergency situations for selected employees
- Training for PhD students “**The job market, and how to benefit from it at local, national, and international levels? Alternative careers to science, but still high science content**” delivered by Prof. Diego Mantovani

ORGANIZATIONAL CHANGES

- Changes in the regulations for appointment of Ombudsman – an advocate for the rights and ethical values in research work at IFJ PAN (providing mediation and support in solving conflicts, complaints and problems **for all groups of employees**)

- Appointment of **Prof. Paweł Błasiak** as IFJ PAN Ombudsman
- **Appointment of mgr inż. Michał Adamek as Ombudsman for PhD students**
- Implementation of the process of preparing a social room for IFJ PAN employees and PhD students

INFORMATION MATERIALS

- A booklet on procedures for dealing with commercialization of research results **“Pathway to commercialization”**
- A guide “The portrait of a good leader”
- “Recommendations related to good practices in determining co-authorship of scientific publications”
- Information materials promoting support measures for work-life balance
- Information action about competitions announced on the webpage and by e-mail. Dedicated webpage presenting the offer of scientific projects www.ifj.edu.pl/badania/projekty-naukowe/ www.kisd.ifj.edu.pl/oferty-konkursowe-granty-programy/stypendia
- Creation of a tab dedicated to Commercialization with information about the offer of available scientific services
- Promotion of events in the field of management and leadership for developing managerial skills and scientific career. Encouragement to take part in initiatives in the field of gender equality and diversity – creation of a dedicated subpage

A full report on the implementation of the HRS4R strategy at IFJ PAN is available at this link: www.ifj.edu.pl/kariera/hrs4r/pdf/Sprawozdanie-z-wdrazania-strategii-HRS4R-04072023.pdf

REPORT ON RECRUITMENT FOR THE POSITION OF AN ADJUNCT

On February 1, 2023, two competitions for the position of an adjunct were announced at IFJ PAN. Within the first competition, candidates could be employed for the period of up to 33 months within 10 vacancies. The second competition offered 25 vacancies with the possibility of concluding a job contract for an indefinite period of time.

The applications were collected until April 17, 2023. 13 and 20 applications were submitted in response to the first and second competition, respectively, giving in total 33 applications, this including 8 women and 19 foreigners.

The recruitment procedure lasted 5 days and consisted of two stages. The first stage was devoted to formal verification of documents submitted by the candidates. The Selection Committee found formal defects in the case of 5 applications and decided not to admit these candidates to the second stage of the competition. After analyzing the documents and having in consideration the scope of scientific output and the opinions of heads of Departments and Divisions, the Committee undertook a unanimous decision to recommend 4 persons for employment and not to invite them to qualification interviews (including 1 woman and 3 foreigners). One person resigned from further participation in the recruitment competition.

The Committee invited 24 candidates to the qualification interviews (including 6 women and 12 foreigners). The interviews took place on May 9 and 10, 2023. The Committee was composed of 7 members.

The Committee recommended 6 candidates (including 1 woman and 3 foreigners) to be employed on the position of an adjunct for a specified period of time, and 9 candidates (including 3 women and 6 foreigners) for an indefinite period of time.

All Candidates were informed about the results of the competition procedure with the indication of their strengths and weaknesses.

PROTON RADIOTHERAPY

In the period from April to June 2023, **78 patients** in total underwent proton radiotherapy at Cyclotron Centre Bronowice, of whom 7 patients completed a series of irradiations in the ocular radiotherapy facility (eye ball tumors), and 60 adult patients and 11 pediatric patients completed a series of irradiations in the gantry facilities (tumors localized outside of the sight organ).

CONFERENCES AND EVENTS

OPEN DAY FOR STUDENTS

On April 28, 2023 the Institute of Nuclear Physics PAN opened its doors to guests within the Open Day for Students. At the event the students had the possibility of learning about current offers of internships and engineering, bachelor, master and doctoral projects, visiting laboratories and familiarizing themselves with various research techniques.

The Open Day program included presentations prepared by the following divisions/laboratories:

1. Division of Particle and Astroparticle Physics (NO1)
 - Laboratory – control room for remote data acquisition at Pierre Auger Observatory
 - High energy physics experiments – ATLAS, LHCb, Belle, T2K, Pierre Auger, H.E.S.S.
2. Division of Nuclear Physics and Strong Interactions (NO2):
 - BRAND 2 experiment laboratory
 - Detection point on the Proteus cyclotron beam
3. Division of Condensed Matter Physics (NO3):
 - Department of Positron Annihilation Spectrometry
 - Laboratory of Magnetic Thin Films
 - Laboratory of Molecular Magnets
 - Department of Polarized Microscopy
 - Laboratory of Dielectric Spectroscopy
 - Department of Thermogravimetric Analysis
 - Presentation entitled: “Structural studies of liquid crystals by X-ray diffraction”
4. Division of Theoretical Physics (NO4) – presentations:
 - “Quarks and their combinations – standard and exotic”
 - “In the beginning was the word, then followed by bitcoin. Studies on the natural language and cryptocurrency market at IFJ PAN”
 - “Hotchpotch or rather a mathematical formula – the fractal face of nature”
 - “The most extreme liquid in the Universe”
 - “Elementary particle theory – everything you always wanted to know but were afraid to ask!”

5. Division of Interdisciplinary Research (NO5):
 - Laboratory of Raman Spectroscopy
 - Laboratory of Infrared Spectroscopy
 - Laboratory of AFM-IR Spectroscopy
 - Department of Magnetic Resonance Tomography
 - Department of Laboratory X-ray Spectroscopy
 - Department of Atomic Force Microscopy
6. Division of Applications of Physics (NO6):
 - Department of Radiation Transport Physics (NZ61) – Plasma Focus Laboratory
 - Department of Radiation Physics and Dosimetry (NZ63) – Laboratory of Mono-crystal Engineering
 - Department of Nuclear Physical Chemistry (NZ64)
 - Department of Mass Spectrometry (NZ65)
7. Cyclotron Center Bronowice (CCB):
 - Introductory presentation about CCB
 - Presentation entitled: “Detectors, imaging, radiobiology, GPU and AI in applications of medical proton radiotherapy physics”
 - Visiting selected CCB laboratories
8. Laboratory of Radiometric Expertise (NLR):
 - Presentation entitled: “Studies of natural and artificial radioactive isotopes in the environment”

The reception welcomed guests in the main hall of IFJ PAN, where students could receive information about the program of each division/laboratory. Students could also learn more from posters presenting an individual division/laboratory.

A total of 53 students attended the Open Day (38% from the Cracow University of Technology, 28% from the Silesian University of Technology, 7% from the Rzeszów University of Technology, 7% from the University of Silesia in Katowice, 7% from Jan Długosz University in Częstochowa, 6% from the Jagiellonian University, 4% from AGH University of Kraków, 3% from Gdańsk University of Technology).



WORKSHOPS FOR HIGH SCHOOL STUDENTS

On **22-26 May, 2023** the Institute of Nuclear Physics PAN held workshops for high school students organized within the program ZDOLNI (The Talented), coordinated by the Polish Children's Fund. It is an exceptional national program run in cooperation with leading universities and research centers in Poland. The program is dedicated to the best young students, full of passion and willing to develop their talents, who wish to enter the world of real science and face up difficult challenges even before the Matura secondary school examination. Each year the ZDOLNI scholarship holders have a possibility of taking part in 50 different classes selected according to their needs. The classes are specialist research workshops held at institutes of the Polish Academy of Sciences and at faculties of leading universities, as well as science camps, seminars and internships, at which their participants become members of research teams and groups.



This year, the Institute of Nuclear Physics PAN hosted young adepts of science, enthusiasts and winners of national and international school contests, for the fourth time. For a week, eleven persons worked under the supervision of IFJ PAN researchers over five scientific issues, such as cosmic rays and CREDO project (supervised by: dr hab. Robert Kamiński, dr David Alvarez Castillo, dr Oleksandr Sushchov, mgr Jerzy Pryga), whole-body spectrometry (supervised by: dr hab. inż. Renata Kierepko, mgr inż. Renata Franczak), electrospun polymer fibers (supervised by: dr hab. inż. Małgorzata Jasiurkowska-Delaporte), fractals (supervised by dr hab. Paweł Oświęcimka) and rare nuclear decays (supervised by: dr inż. Michał Ciemała). Besides every-day work within workshop groups, the participants could listen to a lecture given by dr hab. Katarzyna Pogoda and visit the experimental hall of Cyclotron Centre Bronowice.

The workshops were coordinated and organized by dr hab. Michał Krupiński.

MEETING OF THE PACIFIC OCEAN NEUTRINO EXPERIMENT (P-ONE) COLLABORATION

On **May 8-12, 2023**, the Institute of Nuclear Physics PAN hosted a meeting of the Pacific Ocean Neutrino Experiment (P-ONE) Collaboration. The purpose of the experiment, which is currently under construction in the north-east Pacific Ocean, is to observe high energy neutrinos coming from astrophysical sources and search for and investigate these sources.

The meeting gathered 42 participants – researchers, technicians, students – from Canada, the USA, Germany, Great Britain, and Poland. The main purpose of the meeting (organized twice a year in different institutions) was to discuss the readiness and plan of installation of the first regular measurement line of the Experiment in the Pacific waters, which will take place towards the end of 2024 or at the beginning of 2025. The participants of the meeting evaluated the readiness level, determined the main points in the action plan and decided to make an attempt to begin the installation in the next year. Moreover, plans of developing software for simulation, reconstruction and future analysis of experimental data, which will soon be available, were discussed. The event was accompanied by a meeting of Early-Career Scientists and a Collaboration Board meeting. Overall, 50 lectures were given (including an invited theoretical talk delivered by dr Rafał Maciuła) and 8 discussion panels were organized.

The meeting was organized and coordinated by the P-ONE experiment group from Kraków – dr hab. Paweł Malecki, Konrad Kopański and Wojciech Noga.

THE CEREMONY OF GRANTING THE TITLE OF HONORARY PROFESSOR OF THE HENRYK NIEWODNICZAŃSKI INSTITUTE OF NUCLEAR PHYSICS POLISH ACADEMY OF SCIENCES

May 18, 2023 marked a ceremonial, open session of the IFJ PAN Scientific Council. The session was featured by Professor Kazuya Saito, who by virtue of the resolution of the Council was awarded the title of Honorary Professor of the Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences in recognition of his magnificent contributions to thermodynamic studies of molecular condensed matter and exemplary cooperation with the Institute of Nuclear Physics PAN.



Prof. Kazuya Saito (Osaka University, Japan) is a world-class experimental physicist specializing in condensed matter physics. The scope of interests of Prof. Saito encompasses all physical aspects of liquid-crystal phases, molecular dynamics, and thermal, electric and magnetic properties of low-dimensional organic conductors. He has investigated such phenomena as conductivity in organic structures, Fermi surfaces in metals, fullerene isomers, molecular packing in gyroid structures, and polymer heat capacity. He is the winner of James J. Christensen Memorial Award and the Japanese Liquid Crystal Society Award. Over twenty years of Prof. Saito's collaboration with IFJ PAN that involved 15 employees from the Institute have resulted in the publication of 17 joint scientific papers and one monograph. IFJ PAN employees did numerous internships at the University of Tsukuba and Osaka, working in the team headed by Prof. Saito, while 7 Japanese co-workers of Prof. Saito took part in studies conducted in Kraków as part of internships and scientific visits.

The laureate, invited guests and audience were welcomed by Prof. dr hab. Tadeusz Lesiak, IFJ PAN Director, and Prof. dr hab. Antoni Szczurek, Chair of the IFJ PAN Scientific Council. Prof. dr hab. Antoni Szczurek recounted the course of the proceedings for the conferment of the title of IFJ PAN Honorary Professor to Prof. Kazuya Saito carried out by the IFJ PAN Scientific Council. Next, Prof. dr hab. Maria Massalska-Arodź delivered a laudation in honor of the renown scientist. The Chair of the Scientific Council read aloud and handed the diploma of IFJ PAN Honorary Professor to Prof. Saito and offered him his heartfelt congratulations, in which he was joined by IFJ PAN Director, Prof. dr hab. Tadeusz Lesiak.

The invited guests, among them Dr hab. Sebastian Pawlus, Director of the Institute of Physics, University of Silesia, Prof. dr hab. Jakub Rysz, Deputy Director of Marian Smoluchowski Institute of Physics, Jagiellonian University, Prof. dr hab. Zbigniew Galewski from the Faculty of Chemistry, University of Wrocław, Dr hab. Sebastian Kubis, Head of the Department of Physics, Cracow University of Technology, Prof. Nguyen Xuan Phuc from the Vietnam Academy of Science and Technology, delivered a number of speeches. The old and present colleagues of the Laureate (Prof. dr hab. Stanisław Urban, the Jagiellonian University, Prof. dr hab. Tadeusz Wasiutyński, Dr hab. Robert Pelka and Dr hab. Mirosław Gałązka) extended their congratulations to Prof. Saito, reminiscing about their joint scientific accomplishments.

Afterwards, the laureate delivered a lecture entitled "Intramolecular Structural Degrees of Freedom as an Essential Actor in Molecular Condensed Matter".

THE GENERAL MEETING OF THE POLISH LIQUID CRYSTAL SOCIETY

On **May 19, 2023** the Institute of Nuclear Physics PAN hosted a Seminar and the General Meeting of the Polish Liquid Crystal Society (PTC).

This all-Poland meeting was the 15th PTC event in a series, but for the first time organized at IFJ PAN. The meeting gathered physicists and chemists, i.e. 41 researchers in total, from the following scientific units: Military University of Technology, University of Wrocław, University of Silesia in Katowice, Poznań University of Technology, Institute of Molecular Physics Polish Academy of Sciences, Siedlce University of Natural Sciences and Humanities, Jagiellonian University, Cracow University of Technology and Institute of Nuclear Physics Polish Academy of Sciences.

The special guest of the event was prof. Kazuya Saiko from the University of Tsukuba in Japan, IFJ PAN Honorary Professor, who delivered an inaugural lecture. Overall, 9 lectures were given at the PTC seminar, including two talks by IFJ PAN employees.



ZAKOPANE SCHOOL OF PHYSICS 2023

This year's LVI Zakopane School of Physics: Breaking Frontiers: Submicron Structures in Physics and Biology took place on **May 23-27**. The conference is a recurrent event of an international range, organized since the mid-1960s and encompassing a wide scope of scientific problems related not only to novel measurement techniques, but also to the application of nuclear physics methods in studies of biomedical materials and condensed phase. The School is directed to early career scientists: students, PhD students and adjuncts at the threshold of the scientific career, who can present the results of their work or consult experienced mentors in a pleasant atmosphere.

The subject matter of this year's meeting included: applications of novel X-ray techniques, multifunctional materials, magnetic nanostructures, molecular magnets, and applications of physics in biology and medicine. Two special sessions were organized as part of the event: the first one devoted to measurement possibilities with the use of the X-ray laser in Hamburg (European XFEL), and the second one: to the ELI (Extreme Light Infrastructure) research infrastructure.



The participants of the conference represented 12 countries from all over the world (Croatia, Germany, Slovakia, France, Italy, Spain, Austria, Switzerland, Hungary, the Czech Republic, the USA, Poland), and ca. 30 research centers. 52 oral presentations, including 19 invited talks, were delivered and 17 posters were presented during the conference.

IFJ PAN AT INTARG FAIR

The IFJ PAN Team for Commercialization presented the scientific potential of the Institute to the participants of the prestigious innovation trade fair INTARG, organized in Katowice on **May 24-25, 2023**.



The members of the Team provided information about advanced research conducted at IFJ PAN, patented inventions, a wide range of specialized services offered by the Institute, in particular services related to dosimetry research, radiological protection and tumor treatment with the use of proton radiotherapy. Our participation in the fair gave us an opportunity to make valuable contacts with representatives of other R&D centers and the world of business, which may result in establishing cooperation in the range of innovative activities and undertaking joint research initiatives in the future.



ORDINARY SESSION OF THE GENERAL ASSEMBLY OF MEMBERS OF THE POLISH ACADEMY OF SCIENCES – KRAKÓW BRANCH

On **June 13, 2023**, the Institute of Nuclear Physics PAN hosted an Ordinary Session of the General Assembly of Members of the Polish Academy of Sciences – Kraków Branch with the participation of Directors of PAN Institutes from Kraków.

The session constituted the second round of scientific meetings at Kraków institutes with the goal to foster the integration of the environment around the Polish Academy of Sciences in the field of interdisciplinary scientific and research collaboration. The schedule of the session included: information on current activity of the Branch given by prof. Karol Życzkowski – President of the PAN Kraków Branch, and presentations illustrating the activity of the Institute, delivered by: prof. Tadeusz Lesiak, prof. Bogdan Fornal, dr hab. Wojciech Królas, IFJ PAN professor, and dr Ewa Pięta. After the official part of the session, the guests visited the Cyclotron Centre Bronowice and the Laboratory of Radiometric Expertise.

“SCIENCE FOR SOCIETY” CONGRESS

On **3-5 June 2023**, the Warsaw University of Technology and the World Hearing Center of the Institute of Physiology and Pathology of Hearing held the “Science for Society” Congress. The event was co-organized by the Main Council of Research Institutes, the Warsaw University of Technology, the Łukasiewicz Research Network, the Institute of Physiology and Pathology of Hearing, the Educational Research Institute and scientists from institutes of the Polish Academy of Sciences and universities.

The aim of the Congress was to present accomplishments of Polish research and educational centers, which, after their implementation, will have a significant impact on the development of modern society in our country.

The discussions were accompanied with exhibitions of research units illustrating their modern scientific accomplishments and a health town offering various medical services and presenting the newest solutions and implementations in the healthcare sector.

The Institute of Nuclear Physics PAN was an especially important participant of this event. The representatives of the Institute presented the successes of the Cyclotron Centre Bronowice – the only center in Poland running a proton radiotherapy program.

Furthermore, the guests of the event could learn about IFJ PAN’s contributions to the development of novel dosimetry and radiological protection techniques and about its laboratories, which on an every-day basis carry out measurements for the protection of workers exposed to radiation (LADIS) and environmental analyses for the protection of inhabitants (LER). At the plenary session the audience could listen to lectures delivered by Prof. Maciej Budzanowski and Prof. Renata Kopeć, discussing in detail the current state of knowledge and progress in these disciplines.



PhDiaFusion 2023

The international conference “Summer School of Plasma Diagnostics: PhDiaFusion 2023” took place on **June 19-23, 2023**. It is a biennial event organized in cooperation of IFJ PAN with the Institute for Magnetic Fusion Research (IRFM) of the French Alternative Energies and Atomic Energy Commission (CEA). The goal of the conference is to present the newest tendencies and scientific challenges in the field of experimental research of high-temperature plasma coupled in thermonuclear devices.

The conference is addressed mainly to young scientists – PhD students and undergraduates. Lectures are delivered by prominent scientists specializing in plasma diagnostics.

This year's edition under the title of "Plasma diagnostics and real-time control with the support of artificial intelligence", the fifth in the series, discussed the aspects of data processing and real-time diagnostic data interpretation, validation and control with emphasis on methods based on artificial intelligence. Huge amounts of generated data will require quick and efficient processes for analyzing plasma parameters taking into account reasonable computing costs.

The PhDiaFusion 2023 conference was organized at Niepołomice Royal Castle and was an in-person event. The conference was opened by dr. hab. Dariusz Bocian, IFJ PAN Scientific and Technical Director, who delivered a welcome speech. We also had the honor to host Prof. Jean-Luc Schneider - attaché for science and university cooperation of the French Embassy in Poland, who delivered a lecture emphasizing the importance of the Polish-French collaboration and discussed the ideas and tools for improving and strengthening this collaboration. Prof. Schneider was also a representative of the French Institute in Poland, which offered financial support for the conference.

The conference gathered 49 participants (from eight European countries, the USA and China), including 24 undergraduates, PhD students and young scientists, who presented the results of their research in the form of short presentations. 37 lectures were delivered in total - the best three speeches given by young scientists were distinguished and awarded books funded by the SPRINGER Publishing Company.

The conference proceedings shall be published in a special edition of the prestigious Journal of Fusion Energy.

We were particularly pleased with the fact that the conference was very popular with undergraduates and PhD students both from Poland and abroad, which corroborates the topicality of the problems discussed at this year's PhDiaFusion conference and the need for their further exploring.



HORIZON EUROPE INFORMATION DAY. REGIONAL MEETING WITH POLSCA PAN AT IFJ PAN



The goal of the meeting was to outline the mission of the Polish Science Contact Agency "PolSCA", discuss the possibilities of supporting PAN units in obtaining the EU funds and present a series of instruments dedicated to financing research from the Horizon Europe framework program.

The lectures were delivered by: Tomasz Poprawka - Director of the Polish Science Contact Agency (PolSCA) PAN, Anna Armuła from the National Contact Point for Horizon Europe - Macro-Region South-Eastern Poland, Aleksandra Górecka from the National Agency for Academic Exchange, and Kamila Chmielewska from the National Contact Point.

The event gathered over 100 participants, including 13 Horizon Europe Navigators, 16 representatives of the management staff of PAN institutes, 33 IFJ PAN employees and 31 employees of other PAN institutes.

SYMPOSIUM OF THE POLISH RADIOLOGICAL PROTECTION CONSORTIUM

On **July 3, 2023**, IFJ PAN hosted a symposium of the Polish Radiological Protection Consortium (PKOR) under the title of "Radiological Protection in Poland in the face of challenges of the Polish Nuclear Power Programme - research, development, HR". PKOR was founded on December 8, 2022 by six research institutes for supporting research in the field of radiological protection, with IFJ PAN as the initiator of this undertaking.

At the beginning of the Symposium, the President of the National Atomic Energy Agency (PAA) Andrzej Głowacki handed Prof. Tadeusz Lesiak, the IFJ PAN Director, a document confirming that IFJ PAN was granted an authorization to carry out research related to the commissioning and exploitation of nuclear power facilities.

The Symposium focused on issues related to radiological protection resulting from the planned construction of nuclear power plants and small module reactors SMR in Poland.

The goal of the Symposium was to present a report prepared by PKOR. The report discussed the current status of radiological protection in Poland in terms of preparations for commissioning of the nuclear energy program and postulates actions necessary to remedy deficiencies.

The conclusions of the Symposium included among others a proposition of establishing the Strategic Research Agency for Radiological Protection that would develop the most important guidelines for scientific policy in the field of radiological protection in order to get ready for launching the nuclear energy program in Poland.

The symposium gathered over 150 participants, including representatives of the National Atomic Energy Agency, Ministry of Climate and Environment, Chief Sanitary Inspector, National Center for Radiological Protection in Health Protection, and universities and institutions that are members of the Consortium.

YOUNG MULTIS 2023 – MULTISCALE PHENOMENA IN CONDENSED MATTER: A CONFERENCE FOR YOUNG RESEARCHERS



On **3-5 July, 2023**, IFJ PAN held a remote conference “Young Multis 2023 – Multiscale Phenomena in Condensed Matter: a conference for young researchers”. The event was a continuation of a series of scientific conferences organized every two years. The goal of the Young Multis conferences is to promote joint interdisciplinary activities of physicists, chemists and materials engineers from all over the world and to offer the possibility of maintaining and establishing new collaborations with world-class specialists.

The conference is addressed to undergraduates, PhD students and young scientists, who can present the results of their research in a nice and friendly atmosphere. The topics of this year’s meeting included liquid crystals, vitreous materials, molecular magnets, nanomagnets, molecular film systems, polymers, biological materials, and their applications. Both experimental and theoretical research results were presented at the conference.

The Young Multis 2023 conference gathered 93 scientists in total, including 40 representatives of foreign research centers. The participants of the conference represented 16 countries from all over the world (Morocco, Japan, Israel, Belgium, Slovakia, France, Croatia, Bulgaria, Greece, Spain, Portugal, Great Britain, Lithuania, Ukraine, Poland, Brazil) and nearly 30 scientific centers. 42 oral lectures were delivered and 23 conference posters were presented. The opening lecture entitled “Addressing the global health challenge: neutrons to study multiscale phenomena” was delivered by Prof. Mark Johnson (Institut Laue Langevin, Grenoble, France).

SCIENTIFIC COLLABORATION

NEW COLLABORATION BETWEEN IFJ PAN AND GENERATOR OF SCIENCE GEN IN JASŁO

On **May 31, 2023**, Ryszard Pabian, Mayor of the city of Jasło, and prof. Tadeusz Lesiak signed a didactic and research agreement on cooperation. The cooperation with the Generator of Science GEN in Jasło will aim at developing contacts between students and the community of scientists, among others by:

- supporting popularization science initiatives, holding classes by IFJ PAN employees in educational institutions subordinate to the city of Jasło, and inviting students to take part in various kinds of activities, i.e. lectures, discussion forums, seminars and workshops,
- cooperation in the scope of implementation of domestic and international educational projects, inviting students to take part in competitions, workshops and other events, and encouraging teachers to participate in conferences and seminars organized by the Institute,
- holding workshops and scientific lectures which will help to discover science in the field of exact sciences at schools and by the Generator of Science GEN.

The cooperation agreement opens up new perspectives: students will have an opportunity to develop their skills and interests, while the initiative supported by the Institute may lay the foundations for the next stage of education.

COOPERATION AGREEMENT WITH THE LAND FORCES OPERATIONS CENTER - LAND FORCES COMPONENT COMMAND "LT.-GEN. WŁADYSŁAW ANDERS"

On **July 5, 2023**, on behalf of the Institute of Nuclear Physics PAN, prof. Tadeusz Lesiak signed an agreement with the Land Forces Operations Center – Land Forces Component Command "Lt.-Gen. Władysław Anders". The cooperation between the parties was established for, among others, collaboration in the field of mutual exchange of information about the radiation situation by means of radioactive contamination monitoring, detection and identification for immediate recognition of increases in contamination level, cooperation in the area of expert evaluations of contamination hazard status and developing recommendations for safety procedures, as well as specialist consultancy in the field of reducing the range and impact of radioactive contamination for the protection of military personnel and civil population. Furthermore, the parties undertook to pursue joint research interests and scientific projects and keep each other informed about organized conferences, practices, workshops and other undertakings related to nuclear issues, radiological protection or contamination monitoring.

- In June this year we organized a series of trainings on soft skills.
- Guest lectures within the STER Polish National Agency for Academic Exchange program – The internationalization of PhD schools delivered by Prof. Diego Mantovani (Professor in Biomaterials & Bioengineering; Director of Laboratory for Biomaterials and Bioengineering, Laval University, Québec City, Canada). The trainings were addressed to KISD students and young scientists. The topics of the lectures: "The fundamental laws of 'scientific survival' (know yourself, plan ahead, and play chess). Criticism and constructive criticism", "The job market, and how to benefit from it at local, national, and international levels? Alternative careers to science, but still high science content"
- Within the STER program, the PhD Students' Government organized certified Polish- and English-language trainings for PhD students, at which the problems of planning your own scientific development and improving your personal effectiveness were discussed.
- The PhD Students' Government published the Code of Ethics for IFJ PAN PhD Students. Both PhD students and their supervisors are encouraged to familiarize themselves with its content

PHD STUDIES

- Changes in KISD authorities: since July 1, 2023 – the function of **the Director of Krakow School of Interdisciplinary PhD Studies (KISD) has been taken by dr hab. Mariola Kłusek-Gawenda, while dr. hab. Jakub Bielecki has been appointed as Deputy Director**
- **Appointment of mgr inż. Michał Adamek as Ombudsman for PhD students**
- Owing to establishing collaboration with the Science Watch Polska Foundation, KISD can now offer emergency psychological assistance to the PhD students. The Science Watch Polska Foundation organizes psychotherapeutic duty hours and provides individual meetings with qualified psychotherapists. The services are offered also in English

POPULARIZATION

INTERNATIONAL PROMOTION OF IFJ PAN BY MEANS OF EDUCATIONAL MOVIES

In May 2023, we completed the project "International promotion of IFJ PAN by means of educational movies", carried out as part of the program "Welcome to Poland" (Polish National Agency for Academic Exchange). The main goal of the project was to promote the scientific offer of the Institute of Nuclear Physics PAN through education and popularization of science and dissemination of the newest scientific accomplishments of research groups at IFJ PAN. These activities were addressed to a broadly defined public, in particular to high school and university students.

The movies produced within the project were published on the Institute's website and Internet platforms, especially on YouTube and Facebook.

As part of the project, we completed:

- a series of five films under the common title of “The fascinating world of physics”, of which each discussed a selected problem of modern physics thematically connected with research pursued at the Institute;
- a periodic production of short (10'+) video materials (podcasts) in a simple form of meetings with scientists and a panel discussion. Within this task we shot 28 episodes of the program “Physicists' couch”, in which a panel of typically three persons answered questions related to broadly-defined physics asked by the Internet users. To complete the task, we set up a mini recording studio for the regular recording of “Physicists' Couch”.

Within this task we produced five movies:

1. “Cyclotron – a particle accelerator” – two narrators show what physical phenomena lead to the acceleration of ions in the cyclotron. The ions accelerated in this way can be used in research and in proton radiotherapy.
2. “The mysterious Higgs particle” – a movie produced in connection with the 10th anniversary of discovery of this fundamental constituent for describing physical reality, a discovery made with the participation of scientists from IFJ co-running the ATLAS experiment at CERN. Why is the world around us as we know it? Why does atomic matter exist, and we as the consequence of its existence? The movie answers these questions, bringing closer the so-called “Higgs mechanism”, a fundamental phenomenon thanks to which elementary particles acquire mass.
3. “Picnic in the valley of stability” – the movie introduces the viewers to the world of nuclear physics, explaining the pathway of stability of atomic nuclei and the properties of unstable isotopes.
4. “In the country of spectra” – the movie tells the story about decays of unstable radioactive nuclides and about excited oscillations of atomic nuclei and nuclear spectroscopy.
5. “Physics is easy – time dilation” – the movie explains in an accessible manner why relativistic time dilation is a simple consequence of a fundamental experimental fact – the constancy of the speed of light in vacuum.

The project was supervised by Prof. Paweł Bruckman de Renstrom.

26TH SCIENCE PICNIC

On **May 26, 2023**, the IFJ PAN employees and PhD students took part in the 26th Science Picnic. The event is organized annually by the Polish Radio and the Copernicus Science Center and it constitutes the largest open-air event in Europe to promote science. Our Institute was represented by nine persons: dr hab. Agnieszka Kulińska, dr Anna Mroziak, mgr Małgorzata Sankowska, dr hab. Wojciech Gieszczyk, dr Krzysztof Król, dr Michał Sądel, mgr Jędrzej Walkowiak, Dariusz Morawski and Sławomir Stuglik. “Scientific Revolutions” were the main topic of this edition of the Picnic. The event, traditionally organized on the premises of the “PGE Narodowy” Stadium, gathered nearly 100 exhibitors. The area of the Picnic was divided into theme zones. The IFJ PAN stand (A11) was localized in the Future Zone. The visitors could take part in our shows from 11 am to 8 pm. Our attractions included:

- “Astrophysics on stage and cosmic rays in a pocket”, presenting the main assumptions of the CREDO project and its popularization in society;
- “Why did the crystals go into space, or following the tracks of radiation”, bringing closer the problem of ion radiation detection and its importance;
- “Thermonuclear energy – the energy of the future”, drawing attention to the problem of a growing demand for energy and the possibilities of solving this problem with the use of thermonuclear fusion.



The visitors of our stand could, among others, see the 3D models of luminescent detectors and the ITER tokamak, play a board game, or learn more about how to detect cosmic rays with the use of e.g. smartphones.

The 26th Science Picnic attracted nearly 30 000 visitors. The IFJ PAN stand enjoyed great interest of the participants of the event.

POPULAR SCIENCE SHOWS “EXCITING PHYSICS”



The shows were dedicated to different age groups (even to pre-schoolers).

The audience could take part in fascinating experiments and astonishing observations that kindle the interest in physics.

Each show was accompanied with a quiz with awards.

Onsite shows at IFJ PAN – 9 shows (from May 30 to June 2, 2023)

- **1350 participants,**
- **296 people and 36 groups taking part in the quiz,**
- **30 people/teams and 36 awarded groups (each group that was the youngest was awarded).**

Online shows (live broadcast via YouTube platform) – 3 shows

- **8 603 registered participants from all over Poland,**
- **248 people taking part in the quiz,**
- **25 awarded people/teams,**
- **967 messages in the chat.**



Hosts: dr Dominika Kuźma, dr Anna Mroziak, mgr inż. Małgorzata Sankowska (PhD student)

The project “Physics as the key to understanding the world” financed from the state budget as part of the program of the Ministry of Education and Science “Social responsibility of science”, project no. SONP/SP/550514/2022, amount of funding 169,336.00 PLN, total value of the project 188,340.00 PLN



NAMIOT MŁODEGO NAUKOWCA

The project “Young Scientist’s Tent” consists in organizing a series of workshops (from July 17 to August 4, 2023) dedicated to children aged 6 to 15 and held on the premises of the Institute of Nuclear Physics PAN. Each class will be devoted to a specific scientific issue. The host will first familiarize the participants with a given scientific problem, after which each participant will take on the role of a young scientist and prepare a model of a simple physical device or develop a physics experiment (depending on the discussed topic). The young constructors can take their models home.

More information: www.ifj.edu.pl/nmn/

Co-financed from the state budget as part of the program of the Ministry of Education and Science “Social responsibility of science”, project no. SONP/SP/550683/2022, amount of funding 211,490.00 PLN, total value of the project 235,227.00 PLN

THE BOOKLET

Information booklet about the Institute of Nuclear Physics PAN was published in June this year. The booklet is also available on-line.

