



THE HENRYK NIEWODNICZAŃSKI  
INSTITUTE OF NUCLEAR PHYSICS  
POLISH ACADEMY OF SCIENCES

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# The Institute a THOUSAND times the best

Newsletter of the Henryk Niewodniczański  
Institute of Nuclear Physics  
Polish Academy of Sciences

No. 3/2021  
October 2021



# Current affairs – a summary

- **Update of the Policy and recruitment procedures for scientific positions**
- **Training on “Changes in public procurement law 2021”**
- **A seminar summarizing HR activities:**  
[https://www.ifj.edu.pl/kariera/hrs4r/pdf/Prezentacja\\_HRS4R\\_Seminarium\\_17-06-2021.pdf](https://www.ifj.edu.pl/kariera/hrs4r/pdf/Prezentacja_HRS4R_Seminarium_17-06-2021.pdf)
- **Publishing of the mission of the Institute on the IFJ PAN website**
- **Election of the Company Social Labor Inspector – mgr. inż. Tomasz Pasiecznik**
- **Access to the Sage HRCloud platform for submitting holiday requests in electronic form**
- **Information security check**



# Current affairs – a summary

- **Changes in “Instructions on financial and accounting document circulation” and introduction of the Procedure for generating fixed assets – furniture**
- **Update of Rules for access to the IFJ PAN premises**
- **Changes in the Organizational Regulations in the Division of the Scientific and Technical Director – closing of the Investment and Exploitation Department and expansion of the responsibilities of the Technical Section**
- **Completion of the construction investment under the title "Reconstruction and adaptation of the technical room at Building no. 1 of the Institute of Nuclear Physics PAN for the needs of teletechnical infrastructure,,**
- **Completion of over 30 room renovations by the Technical Section at IFJ PAN**



## „Report on Research Activities 2017-2020”

The monograph summarizing the most important achievements in the scientific activity of IFJ PAN over the last four years was published in May 2021. These accomplishments were the subjects of intense studies in both basic and applied research. The Report also provides information on the activities of the Cyclotron Centre Bronowice, Division of Scientific Equipment and Infrastructure Construction, Krakow School of Interdisciplinary PhD Studies and accredited laboratories, and on popular science events organized by IFJ PAN with an unprecedented flourish (<http://rifj.ifj.edu.pl/handle/item/338>).





# IFJ PAN takes the patronage over Schools run by Brzesko County

- On 14 July, 2021, IFJ PAN entered into cooperation with high schools and educational institutions run by Brzesko County.
- The Institute also took the patronage over Mikołaj Kopernik High School in Brzesko.
- The main goal of the cooperation is to enable students to establish contacts with the scientific community by means of:
  - active participation of students in selected courses organized on the premises of the Institute,
  - classes conducted by the Institute employees at Schools,
  - helping in making contacts with domestic and foreign institutions,
  - supporting initiatives for popularizing science.



# Krakov School of Interdisciplinary PhD Studies

## Enrollment at KISD for the academic year 2021/2022

- The recruitment for the PhD School for the academic year 2021/2022 took place in July and September 2021.
- The recruitment in numbers: **68 applications** were submitted to the PhD School in total, including **48 applications to IFJ PAN** alone. **17 candidates** were accepted, including **10 students to IFJ PAN**.
- Additionally, by way of recruitment procedures for the programs of the Ministry of Education and Science and the National Science Centre grants earned through competitive processes (e.g. “Industrial Doctoral Program, Preludium BIS”), **8 candidates** were admitted, including **1 person to IFJ PAN**.
- 4 recruitment procedures for grants are still ongoing.



# Krakov School of Interdisciplinary PhD Studies

- **Expansion of the composition of the KISD organizers::**
  - **Strata Mechanics Research Institute of the Polish Academy of Sciences** to be accepted;
  - Declaration of will on accession to KISD expressed by **the Mineral and Energy Economy Research Institute of the Polish Academy of Sciences**.
- **NAWA program: STER – internationalization of Polish doctoral schools**

As the only PhD School not run by a university, KISD has received funding within the program of the Polish National Agency for Academic Exchange STER – internationalization of Polish PhD Schools. The program covers: activities related to acquiring foreign doctoral students, support for foreign mobility, development of international cooperation. The funding package covers the period from January 4, 2020, to December 31, 2023.



# Cyclotron Centre Bronowice

- **78 adult patients** in total underwent proton therapy at the Cyclotron Centre Bronowice from April to August 2021:
  - **9 patients** completed a series of irradiations at the proton eye radiotherapy facility (eye tumors),
  - **69 patients** completed a series of irradiations at the therapeutic gantry facility (tumors located outside of the eye).





# Division of Scientific Equipment and Infrastructure Construction

During the last 6 months of 2021 engagement of the DAI employees at IFJ PAN has provided following achievements:

1. The update of the Technical Annexes concluded between IFJ PAN and ESS ERIC has been finalized.
2. The new agreement between IFJ PAN and ESS ERIC covering tests of the cryomodules for the period 2022-2026 has been signed.
3. The agreement between IFJ PAN and CERN providing hardware and support for IFJ PAN by CERN expert during commissioning and operation of the test setup for superconductors measurements has been signed.
4. First stage (PDR) of the agreement between IFJ PAN and Oxford Instruments for delivery of the voltage-current characterization of the superconductors has been achieved.

These key and strategic achievement's will allow IFJ PAN to continue involvement both in the highly specialized activities which are the part of the Polish In Kind contribution to the ESS ERIC and in preparation of the test setup for superconductors measurements and a dedicated facility in Krakow.



# Division of Scientific Equipment and Infrastructure Construction

DAI engineers and technicians are executing the tasks in the workshop, offices and on ITER related test setup and the following achievements are in progress:

1. Test of diamond detectors for ITER project has been performed. Preparation of the final report is ongoing.
2. Preparation of the first assembly draft including cooling calculation as a proposal of IFJ PAN contribution the ALICE FoCal detector has been worked out.
3. The final design stage of the laminar chamber with fume cupboard function has been achieved. Preparation of the technical documentation has been started as well as first components has been ordered.
4. The production of final bunch of the aluminum support frames for the upgrade of T2K HA-TPC has been started. These frames are preparing at DAI workshop as part of the IFJ PAN contribution to the project.



# Seminars for young scientists

- The seminars are dedicated to **IFJ PAN PhD students** and **Institute's scientists who have not yet earned the habilitation qualification.**
- The seminars provide an opportunity to improve presentation skills and they constitute a platform for discussions and conversations between young scientists that may be helpful in the course of preparation of doctoral theses or conference contributions. Participation in the seminars gives a chance to share research experience with colleagues or receive help and support in solving problems often encountered by young scientists at the threshold of their careers.
- Seminars' hosts: **dr Michał Krupiński** and **dr hab. Paweł Błasiak.**
- Details under the following link: <https://samorzad.ifj.edu.pl/seminarium-dla-mlodych-naukowcow/>



# Horizon Europe

- Horizon Europe (2021-2027) is the EU's program for research and innovation that has replaced the Horizon 2000 program.
- Budget: ca. **€95,5 billion**
- The Polish Science Contact Agency (PolSCA) of the Polish Academy of Sciences in Brussels has set up a network of **Horizon Navigators**, i.e. a network of research managers of the Polish Academy of Sciences whose role is to support the flow of information about the new framework program Horizon Europe between the Institutes of the Polish Academy of Sciences.
- Launched by the Polish Science Contact Agency (PolSCA), the Horizon Navigators network will also contribute to sharing experience and good practices between its participants and will initiate and strengthen cooperation between the Institutes of the Academy.

**IFJ PAN representative in the Horizon Navigators network**  
**– mgr Małgorzata Lewandowska-Mączka**



# Equality Team at IFJ PAN

## Composition:

- prof. dr hab. Bogdan Fornal – Chair
- mgr Magdalena Kostecka
- mgr Kinga Krupnik
- mgr Małgorzata Lewandowska-Mączka
- dr Antoni Marcinek
- mgr inż. Małgorzata Reś-Gunia
- dr hab. Jakub Szlachetko
- dr hab. inż. Urszula Wiącek



# Equality Team at IFJ PAN

## ➤ Task:

- Preparation of a document entitled: “Gender Equality Plan for the Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences for the years 2022-2025” in line with the objectives specified by the European Commission for entities applying for grants within the Horizon Europe program.

## ➤ More information: <https://www.ifj.edu.pl/dla-pracownikow/komisje/Gender-Equality-Plan.pdf>

## ➤ We invite you to cooperate with us and contribute to the preparation of a multiannual action strategy aiming to observe the principles of equality and diversity, to support career advancement and to facilitate combining private and professional life.

## ➤ Contact: [gep@ifj.edu.pl](mailto:gep@ifj.edu.pl)



## PhD Student Disciplinary Board

- dr hab. Wolfgang Schäfer – Chair
- dr Katarzyna Pogoda
- dr inż. Iwona Sputowska

PhD students' representatives:

- mgr inż. Dominik Czernia
- mgr Anna Nykiel

## PhD Student Disciplinary Board of Appeal

- prof. dr hab. Marek Kowalski – Chair
- dr Piotr Konieczny

PhD students' representative:

- mgr inż. Wiktoria Stańczyk



# Awards and distinctions

- **Prof. dr hab. Antoni Szczurek** – a laureate of **Wojciech Rubinowicz Scientific Award of the Polish Physical Society** for “studies on photon-induced processes in hadron and atomic nuclei collisions in the high energy regime”
- **Prof. dr hab. Adam Maj** with the team including **dr hab. Jerzy Grębosz** and **Maestro Józef Skrzek** – winners of **Krzysztof Ernst Medal in 2021 for popularization of science**
- **Dr Maciej Trzebiński** among the finalists of the 9th edition of **the FameLab** competition for popularization of science organized by the Copernicus Science Centre and the British Council.





# The Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences Director's Award for scientific and organizational activity – 1st edition

- **Dr inż. Michał Ciemała** for developing a method of determining femtosecond lifetimes in neutron-rich nuclei excited in multi-nucleon transfer reactions with the use of the AGATA, PARIS and VAMOS spectrometers
- **Dr Anna Cwanek** for a series of publications on studies on radioactive contamination dispersion in the Northern Hemisphere environment
- **Dr Dominika Kuźma** for the organization, management and participation in science popularization events at the Institute of Nuclear Physics PAN
- **dr Rafał Staszewski** for the analysis of exclusive production of lepton pairs in two-photon proton–proton interactions in the ATLAS experiment



# The Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences Director's Award for scientific and organizational activity – 2nd edition

- **dr hab. Marcin Chrząszcz** for important contribution to searches for beyond the Standard Model phenomena and for the development of the physical program of the Future Circular Collider collaboration
- **dr inż. Iwona Sputowska** for an outstanding scientific accomplishment – a pioneering analysis of correlation and fluctuation phenomena in particle production in heavy-ion collisions at the Large Hadron Collider energies

**3rd edition – deadline for application submission – October 15, 2021**



## Conclusion of the 3rd edition of the QuickPhysX 3 contest

- 1st place and the Audience Award – **dr inż. Agnieszka Szumska** for the presentation “Ionizing radiation – a way from euphoria to phobia”
- 2nd place – **inż. Szymon Bacher** for the presentation “A home-made experiment studying the usefulness of masks”
- 3rd place – **mgr Kajangi Gnanachandran** for the presentation “Biomechanics and biophysics of cancer cells: atomic microscopy as an innovative tool for early diagnosis”
- The presentations are accessible under this link:  
<https://www.ifj.edu.pl/konkurs/>



# Events and conferences

- **9th meeting of the CCB International Advisory Committee – August 27, 2021**
- **Summer School of Plasma Diagnostics: PhDiaFusion 2021 Neutron diagnostics development for ITER, DEMO and IFMIF-DONES – September 20-24, 2021**
- **“XFEL for beginners” workshop – April 27-28, 2021**
- **“CREDO and cosmic radiation” – May 12-13, 2021**
- **Children’s Day at IFJ PAN – June 1, 2021**
- **IFJ PAN Open Day for students – June 18, 2021**
- **Małopolska Researchers’ Night – September 24, 2021**
- **Popularization**



## 9th meeting of the CCB International Advisory Committee

- The 9th meeting of the IFJ PAN CCB International Advisory Committee (IAC) took place at IFJ PAN on August 27, 2021 via the ZOOM platform.
- The meeting gathered 35 participants, including 10 members of the IAC Advisory Committee. 13 lectures were delivered, whose authors summarized research progress at Cyclotron Centre Bronowice, presented results of previous experiments and proposed new experiments. In its report from the meeting, the Committee highly appreciated the research progress in CCB and provided recommendations for the proposed projects.



# Summer School of Plasma Diagnostics: PhDiaFusion 2021

- The international conference “Summer School of Plasma Diagnostics: PhDiaFusion 2021” took place on September 20-24, 2021. The event is organized every two years by IFJ PAN in cooperation with the French Institute for Magnetic Fusion Research (IRFM) of the French Alternatives Energies and Atomic Energy Commission (CEA).
- The conference aims to discuss the newest trends and scientific challenges faced in experimental studies on high temperature plasma produced in thermo-nuclear devices.
- The conference is addressed mainly to young scientists – PhD and undergraduate students. The lectures are delivered by prominent scientists with expertise in tokamak plasma diagnostics. This year’s conference, the fourth in the cycle, was held under the title “Neutron diagnostics development for ITER, DEMO and IFMIF-DONES” and was devoted to neutron diagnostics dedicated to the ITER and DEMO reactors and the IFMIF-DONES neutron source laboratory, which are all currently in the design or construction phase.
- The conference gathered 44 participants (from 7 European countries), including 20 undergraduate and PhD students, who presented their scientific findings in short talks. 30 lectures were given in total. The conference also featured a lecture delivered by prof. Jean-Luc Schneider – the attaché for science and university collaboration of the Embassy of France in Poland – discussing the current scientific relations between the two countries and prospects for their development.



## “XFEL for beginners”

- The 2nd edition of the “XFEL for beginners” workshop took place on April 27-28, 2021, and was organized by IFJ PAN in cooperation with the Polish Synchrotron Radiation Society and National Centre for Nuclear Research.
- The workshop aims at introducing Polish scientists to the X-ray free-electron lasers research problems and measurement methods.
- For the pandemic reasons the workshop was held remotely and included lectures given by scientists working directly at XFEL objects. The workshop also included a course devoted to the preparation of experiments for XFEL studies. The lectures were supplemented by practical classes with the goal to introduce its participants to laboratory works required for the preparation of experiments at XFEL sources. The whole course was organized and conducted by a group of researchers and students of the Department of Applied Spectroscopy IFJ PAN.
- **450 participants** from Polish institutes and universities and foreign research centers registered for the event.



## “CREDO and cosmic radiation” – May 12-13, 2021

- This popular science event took place in May 2021 and was organized in the form of five live broadcasts as part of the project “Physics as a key to understand the world” (funded from the Ministry of Education and Science program “Social responsibility of science”).
- The shows took the form of a discussion between the two hosts of the program (prof. Piotr Homola and prof. Robert Kamiński), interspersed with video materials. The hosts spoke about the possibility of registering cosmic ray particles with the use of smartphones. The show was accompanied by the event “Breaking a record for catching particles in team competition”. The particles registered during the game will constitute material for research analysis available for everyone willing to participate in the project.

### Summary:

- **1,835 devices connected live,**
- **5 550 views on YouTube,**
- **over 9,187 chat messages.**





## Children's Day at IFJ PAN

- The event took place on June 1, 2021, and was broadcast live. The participants had (virtual) meetings with IFJ PAN scientists. The program of the event featured:
  - a show presenting surprising physical experiments entitled “Dr Dominika’s tricks of physics”,
  - a lecture given by prof. dr hab. Piotr Zieliński “Naturally seen, naturally heard”,
  - a show by dr hab. Piotr Homola “Catching secondary cosmic ray particles”,
  - a series of interesting experiments conducted jointly by a group of PhD students and scientists of the Institute,
  - the quiz “Understanding physics” in which they had to answer questions asked via chat.
- **44 schools** from all over Poland (among others from Cracow, Gdańsk, Warsaw, Olsztyn) registered for the event, which gathered altogether 1 631 pupils at live transmissions.



# Open day for students

- June 18, 2021, marked the virtual IFJ PAN Open Day with the goal to introduce students to the problems of basic and interdisciplinary research carried out at the Institute and to present a wide offer of thesis topics and student internships, including the possibility of meetings with the representatives of the PhD school and the School students.
- The activities of all scientific divisions of the Institute and CCB were presented during the event (approximately 60 lectures were delivered). The attendees could take part in virtual lab tours, listen to presentations describing research problems investigated at the Institute and have a chat with IFJ PAN employees and potential supervisors.

Zaprasza na  
**Dzień otwarty dla studentów**  
**18 czerwca 2021** ONLINE

**RÓŻNORODNA I CIEKAWA TEMATYKA Z ZAKRESU BADAŃ PODSTAWOWYCH**

- fizyki i astrofizyki cząstek
- fizyki jądrowej i oddziaływań silnych
- fizyki materii skondensowanej.

**FASCYNUJĄCA TEMATYKA ZAGADNIENI INTERDYSCYPLINARNYCH**

- fizyki medycznej
- inżynierii nanomateriałów
- radiochemii
- biologii radiacyjnej i środowiskowej
- i wiele innych...

**OFERTY PRAC DYPLOMOWYCH**  
Oferty praktyk studenckich, prac inżynierskich, licencjackich, magisterskich oraz studiów doktoranckich.

Jesteś zainteresowany pracą naukową w renomowanym międzynarodowym zespole?  
Serdecznie zapraszamy na Dzień Otwarty IFJ PAN. Aktywnie uczestnicz 18 czerwca 2021 r. od godz. 11:00 do 14:00 online!  
<https://www.ifj.edu.pl/edukacja/oferta-dla-studentow/dzien-otwarty-2021/>

Institute of Nuclear Physics  
Im. H. Niewodniczańskiego  
Polskiej Akademii Nauk  
ul. Radzikowskiego 152  
31-342 Kraków

# Małopolska Noc Naukowców

w Instytucie Fizyki Jądrowej PAN

**Jak naukowcy zmieniają nasz świat?**

24 września 2021

Ze względu na zagrożenie epidemiczne spotykamy się 24 września 2021 r. całkowicie w formie on-line (12:00-22:00).

## Within the framework of the Małopolska Researchers' Night 2021 our program included:

- Dr. Dominika's Physics Tricks
- The quiz "Understanding Physics"
- Eco-constructor
- The Physicists' couch
- Where is the limit of serious physics?
- Science Horror 2.0
- Experiments of the Young Engineer
- Meanders of Science: 4 videos
- Laboratories open anyway: 4 videos
- The world through the eyes of a physicist: 15 videos
- Around the world in 90 seconds (greetings to IFJ PAN from all over the world)
- QUIZ FIZ team competition for secondary schools (for the first time)
- SCIENCE4ECO art competition

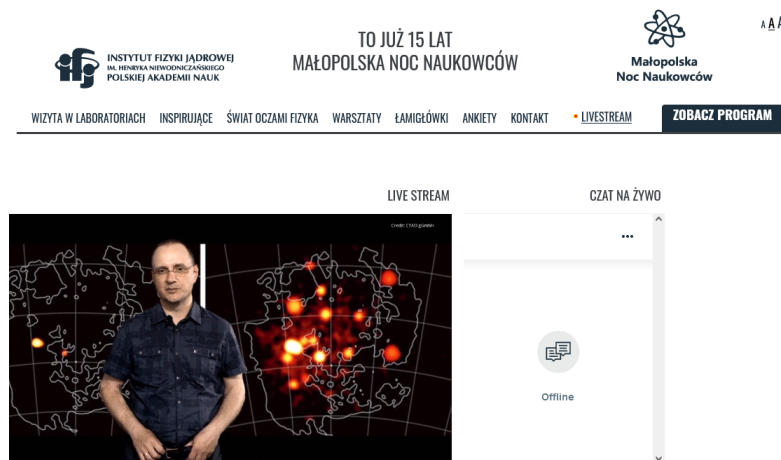
October 2021

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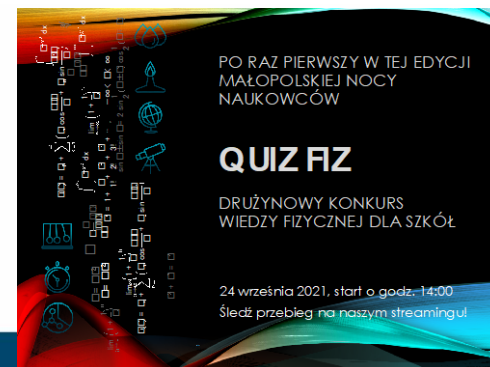
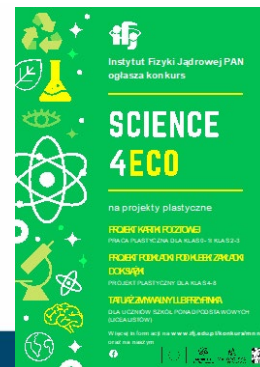
HR EXCELLENCE IN RESEARCH

All materials prepared for the event are presented on the IFJ PAN website.



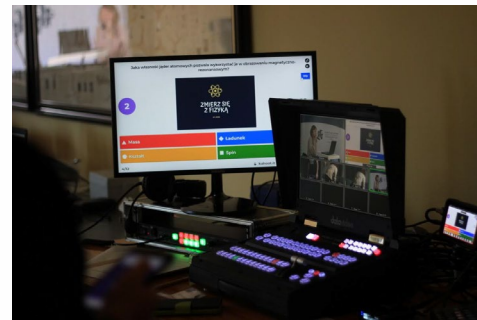
## MAŁOPOLSKA NOC NAUKOWCÓW W IFJ PAN

Już po raz 15 spotkamy się z Wami w IFJ PAN! W tym roku ze względów epidemicznych w formie online. Zapraszamy śledzić transmisję z naszego Instytutu. Zadawajcie pytania i komentujcie wszystko na czacie. Nie zapomnijcie zobaczyć co kryje się pod kafelkami poniżej. Mamy nadzieję, że znajdziecie tam inspirację, spojrzycie na świat "naszymi oczami", rozwiążcie krzyżówki / łamigłówki, a najmłodsi wkroczą w świat cząstek elementarnych poprzez kolorowanki. Zapraszamy!!!



27





The number of activated transmissions: ca. **2400** (this year we were followed also by schools)



The number of IFJ PAN employees and PhD students involved in the preparation of the event: ca. **140**



The number of PhD students involved in the preparation of the event: **38**

**23** movies in total were produced as a result of our joint efforts.

Photos Lidia Grin, Marcin Perzanowski



## Popular Science Team

- **The quiz “Understanding Physics”** was carried out as part of the project “Physics as a key to understand the world” funded from the Ministry of Education and Science program “Social responsibility of science”. The task of the participants was to provide answers to questions published on the Facebook profile in the comments section. The questions from the field of natural sciences (especially from the discipline of physics) were published once a week. The quiz attracted 93 participants, out of whom 24 were awarded. The quiz can be accessed on the Facebook page of the project.
- **The competition “Understanding physics”** conducted at Mikołaj Kopernik High School in Brzesko. The task of the students was to prepare video materials illustrating interesting physics experiments. The best materials were published as tasks in the quiz “Understanding physics”. The event was coordinated by dr Dominika Kuźma.
- **A virtual lesson of physics** for third-graders – organized for pupils of Orzeł Biały 18 Primary School in Olsztyn. Host: dr Dominika Kuźma. The lesson was organized in the form of workshops at which the pupils prepared simple models of physical devices.
- The game **“Look into the depths of the Universe”** – organized as part of the project “Physics as a key to understand the world”. The task of the team was to detect secondary cosmic ray particles using devices such as smartphones, tablets, laptops with the CREDO Detector application. Each activity in the game was awarded points. Duration of the game: from July to August 2021.



# Team for Popularisation of Scientific Research IFJ PAN

- Transmission of the next episodes of the **“Physicists' Sofa” series**:
  - 11 regular episodes with the participation of dr Maciej Trzebiński, prof. Paweł Jochym, prof. Jerzy W. Mietelski, prof. Robert Kamiński, prof. Marcin Wolter.
  - 8 special episodes: 1 episode devoted to PhD students and PhD studies at IFJ PAN (hosted by dr Maciej Trzebiński with the participation of the following guests: Juliusz Chojenka, Grzegorz Ziarko and Andrzej Kubiak), 7 episodes dedicated to the 30th anniversary of Poland's full membership in CERN with the participation of prof. Agnieszka Zalewska, prof. Marek Kowalski and prof. Paweł Brückman.
- **Broadcast of 15 one-minute movies/podcasts dedicated to the 30th anniversary of Poland's membership in CERN** with the participation of 11 IFJ PAN researchers who shared their personal histories and reflections related to this research center.
- Two 60-minute on-line programs were transmitted as part of the Małopolska Researchers' Night 2021, in which a panel of scientists answered questions asked by the audience via live chat.
- Translations of a number of popular science movies
- IFJ PAN has received funding for popularization activities within the NAWA grant “International promotion of IFJ PAN through educational movies” (for the years 2021-2023).



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The IFJ PAN newsletter is available at: [www.ifj.edu.pl/instytut/biuletyn](http://www.ifj.edu.pl/instytut/biuletyn)

You are all welcome to cooperate with us and contribute to the Newsletter!

Contact

email: [doi@ifj.edu.pl](mailto:doi@ifj.edu.pl)