SELF-ASSESSMENT REPORT ON THE QUALITY OF EDUCATION IN THE DOCTORAL SCHOOL

Szkoła Doktorska

Narodowe Centrum Badań Jądrowych
Instytut Chemii i Techniki Jądrowej

Michał Spaliński

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VISITING CARD

Basic Information about the Doctoral School

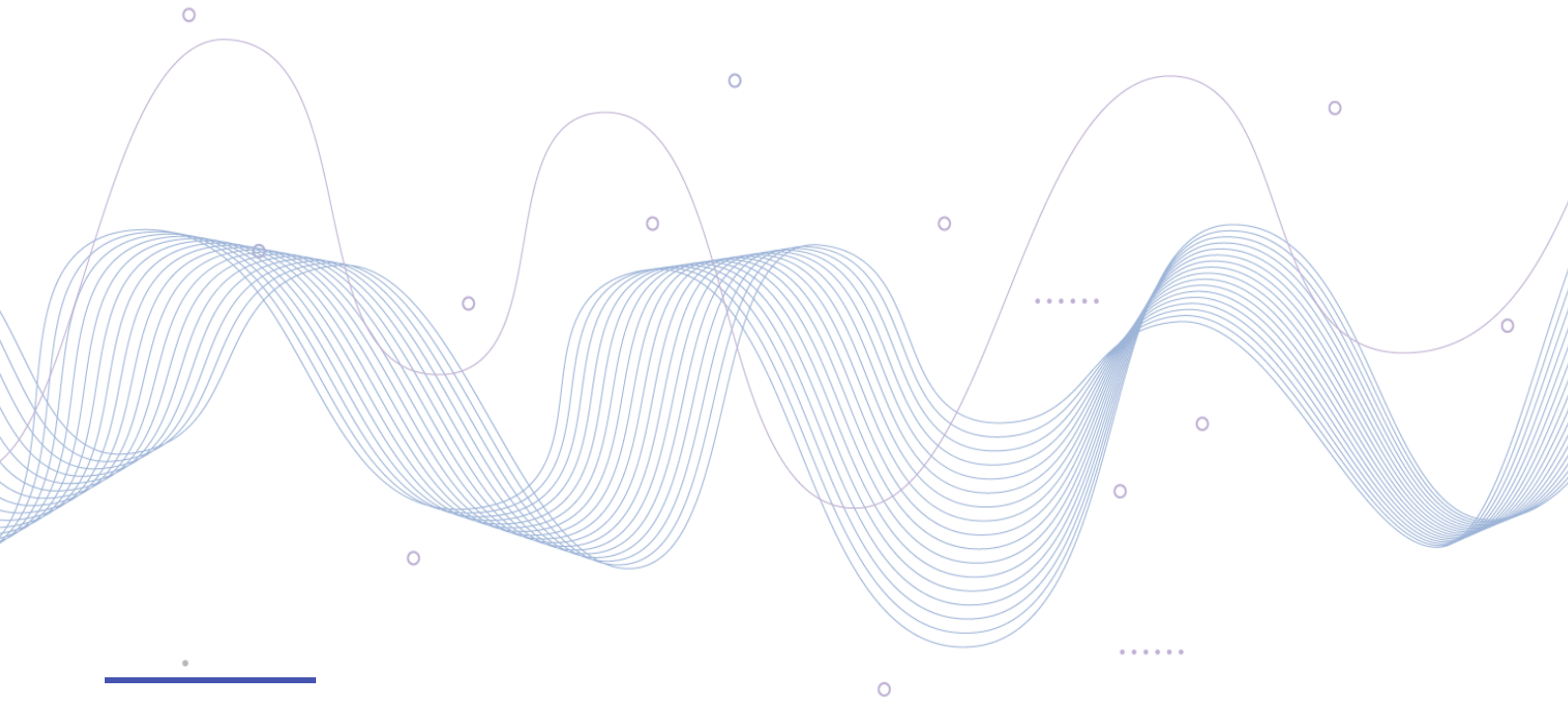
Year of Creation

2019

Institutions running the doctoral school

Narodowe Centrum Badań Jądrowych

Instytut Chemii i Techniki Jądrowej



Field of Education	Education Disciplines
Natural sciences	chemical sciences physical sciences

Name/Scope of the Education Program (PL)	Name/Scope of the Education Program (EN)
Program Kształcenia w Szkole Doktorskiej prowadzonej w jednostkach NCBJ i IChTJ	Education Program at the Doctoral School run in the Units National Center for Nuclear Research and Institute of Nuclear Chemistry and Technology

Additional Information about the Doctoral School

Educating Staff

Numerical data for the evaluation period

Educating Staff	Instructors	Supervisors	Assistant Supervisors
Number of people	0	39	29

Doctoral Students

Number of doctoral students (total): 71

Recruitment during the evaluation period	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	Total
Number of recruited doctoral students	19	11	22	13	11	9	85
Number of doctoral students who completed the doctoral school	9	13	0	0	0	0	22
Number of doctoral students removed from the doctoral student list	5	0	1	1	1	0	8

Mid-term evaluation results	Positive	Negative
Number of Doctoral Students	44	0

Educational Programs	Number of Doctoral Students
Education Program at the Doctoral School run in the Units National Center for Nuclear Research and Institute of Nuclear Chemistry and Technology	71

Additional Numerical Data on Doctoral Students

Number of foreign doctoral students	52
Number of doctoral students with disabilities	0
Number of doctoral students in the Implementation Doctorate program	1
Number of doctoral students in the EU program	0
Number of doctoral students employed by the institution running the doctoral school as academic teachers or research staff	0

Graduates

Numerical data for the evaluation period

Number of graduates who applied for initiation of proceedings for the award of a doctoral degree	14
Number of doctoral students who completed the doctoral school	13

INFORMATION ON THE ENTITY'S COOPERATION WITH THE DOCTORAL STUDENTS' COUNCIL

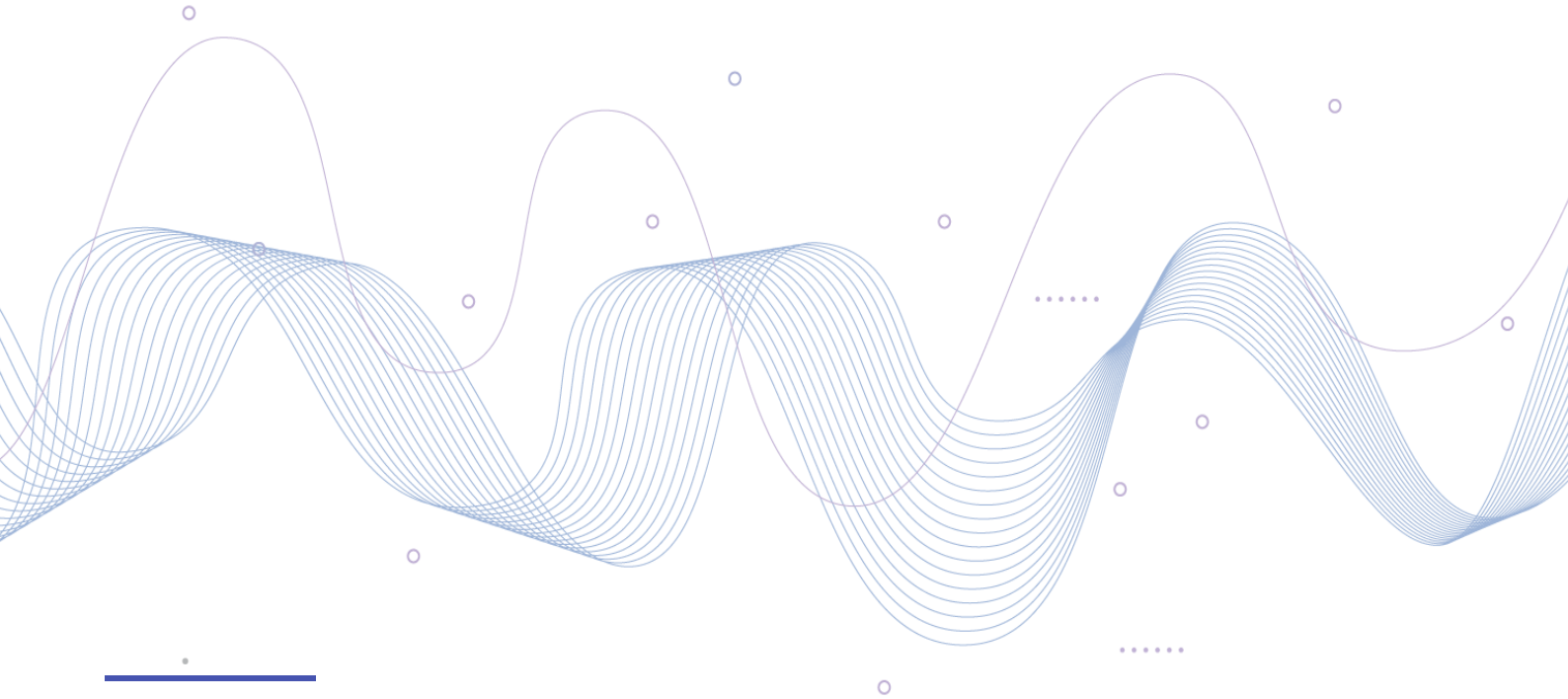
According to the law, all doctoral students collectively form the student government. In the early years of the Graduate School, when student numbers were low, formal representatives were not appointed. Instead, communication and decision-making took place through regular meetings open to all students. These meetings have been held at the beginning of each semester and whenever students requested them. However, with the increasing number of students, there is now a need to formalize interactions with the student government. We are currently working on this process.

All regulations and the education program have always been published on the Graduate School webpage and clearly communicated to students via email, ensuring transparency and accessibility. While feedback was rare in practice, in 2020, concerns were raised about program overload. This led to a series of meetings and consultations, resulting in a reduction in the number of mandatory courses. Students can also express their opinions on the education process and training programs during first-term consultations, conducted individually with each student after their first semester. These meetings involve the Director of the Graduate School and the Discipline Coordinator.

Ongoing communication with the doctoral community is managed by the Graduate School Administrative Coordinator, whose office is open daily. When required, communication is conducted in English, which is particularly important for international students needing assistance with residency matters and other formalities. In addition, we organize annual meetings with the committees for doctoral dissertations of the Scientific Councils. These sessions clarify PhD defense procedures and deadlines and provide a platform for students to ask questions and voice concerns.

To support student integration, the school provides funding for student-organized social events, typically informal gatherings such as group pizza meetings.

INFORMATION ON THE DOCTORAL SCHOOL GROUPED BY 8 EVALUATION CRITERIA



1. Adequacy of the education program and individual research plans to the learning outcomes for qualifications at PRK level 8 and their implementation

Adequacy of the Education Program

Knowledge

P8S_WG:

To ensure that our graduates have mastered the fundamentals tenets of their discipline at a level which makes it possible to reshape existing paradigms we require that during the first two years our students pass 4 exams related to 4 basic courses in their discipline (Block 1 of the Programme). They also need to take at least two specialised courses related to their field of study (Block 3).

P8S_WK:

Familiarity with the fundamental dilemmas of our civilization is achieved through courses of the career development block (Block 6). Wider societal issues also appear in seminars (Block 5).

Skills

P8S_UW:

The ability to apply diverse knowledge in order to formulate innovative solutions of complex problems is developed through participation in seminars (Block 5) as well as through research and thesis work. Through hands-on methodology courses (Block 2) our students gain skills such as modern methods of data analysis.

P8S_UK:

The ability to communicate and discuss complex specialist topics at a level allowing for participation in the international research community is developed through active participation in seminars (Block 5), as well as through preparation of conference talks. All our activities are conducted in English, which is also a key element of education at our school.

P8S_UO:

To develop the ability to plan research, our students work on their thesis projects in collaboration not only with their supervisors, but typically in international teams. The importance of functioning effectively in research teams is also addressed in lectures and workshops comprising the career development block (Block 6).

P8S_UU

Our students learn to manage their development as scholars mainly through courses in the career development block (Block 6).

Social competences

P8S_KK

Our students develop the capacity to evaluate their own contributions to research as well as those of others during the seminars in which they actively participate (Block 5).

P8S_KO

Our students are familiarised with their societal obligations as part of their career development courses (Block 6).

P8S_KR

Our students learn to uphold and develop the ethos of the research community as part of the career development courses (Block 6). This circle of ideas is also addressed in the Graduate Seminar (Block 5).

Adequacy of students' activities

The adequacy of the students' activities, described in their Individual Research Plans is related to the innovative nature of their research, which requires thorough knowledge of the state of their discipline and its fundamental problems (P8S_WG, P8S_WK). The tasks outlined in the Individual Research Plans implicitly assume that the results will be published in top research journals and communicated through conference talks and posters. This requires and facilitates attaining the outcomes listed in the PRQ8 (P8S_UW, P8S_UK, P8S_UO).

Implementation of the Education Programme and the Individual Research Plans

The Education Program is implemented in the form of lectures and problem solving sessions. Some of the latter are led by 3rd or 4th year students, if they wish to gain this type of experience.

The Individual Research Plans are implemented through research conducted in collaboration with the thesis supervisor. In most cases there is also an auxiliary supervisor who works very closely with the student. An important role in this process is also played by seminar and conference talks given by our students. Our students also have the opportunity to visit other institutions, often abroad, which also presents an excellent opportunity to develop their eloquence. Finally, our students are strongly encouraged to apply for external funding, such as NCN grants.

Manner of implementation of the interdisciplinary education process

Our education process is at core interdisciplinary, which is largely possible to the broad range of projects and areas of specialisation represented at the School. A particularly important role is played by the Graduate Seminar. This leads to acquisition of transversal skills by doctoral students, examples being critical thinking, creativity, initiative, problem-solving, risk assessment, and decision-making.

Reliability of the curriculum improvement process

Since its inception, the School has tried to strike the right balance between the need for structured instruction and time available for research. Finding that balance was not easy and was in fact changed by relaxing the course requirements, which originally were too heavy. The curriculum improvement process is driven by: the need to strike the right balance between coursework and research and feedback from students.

Self-evaluation

Our teaching program directly addresses the learning outcomes given by PQF8. We believe that in recent years we have found

the right balance between organised instruction and time available to the students for their thesis research.

2. Method of verifying learning outcomes for qualifications at PRK level 8

Accessibility and Unequivocalness of Verification Rules

The verification of learning outcomes for qualifications at level 8 of the Polish Qualifications Framework (PQF) is governed by clearly defined and publicly accessible regulations. It is based on the completion of lectures, seminars, mid-term evaluations, and the analysis of annual reports. These elements are comprehensively described in the General Regulation and program regulations, providing clarity and transparency. The relevant documents are available, both Polish and English language versions, on the School website:

https://gradschool.ncbj.gov.pl/documents/

The assessment framework aligns with the learning outcomes specified for level 8 of the PQF, guaranteeing that doctoral candidates demonstrate advanced knowledge, research competencies, and the ability to contribute significantly to their fields. The verification process includes mandatory milestones such as coursework evaluations, annual reports, seminar presentations, and obtaining the supervisor's opinion on the thesis preparation.

Transparency and Reliability of the Verification Process

The doctoral school ensures compliance with level 8 of the PQF through structured courses designed to develop the necessary competencies. The verification of learning outcomes is carried out using multiple assessment methods, including:

Reliability of the Process of Enhancement of Learning Outcomes Verification Methods

The doctoral school systematically updates its verification methods to keep them effective. Changes are introduced based on feedback from doctoral candidates, supervisors, and instructors.

Staff are actively involved in improving verification processes through meetings and consultations. To support consistency and quality, the School is in the last stages of preparing a handbook for supervisors and lecturers with guidelines on learning outcomes, evaluation standards, and good practices.

One of the key tools for verifying learning outcomes in the Doctoral School is the doctoral seminar. In order to enhance the verification process, we have decided to involve a larger number of academic staff members, ensuring the participation of experts from various fields relevant to the doctoral projects. Additionally, we have introduced individual consultations with these experts during the preparation of the seminar. This solution not only improves the quality of feedback but also allows for a more thorough assessment of the doctoral students' progress and the development of their research projects. The seminars are also open to all faculty members, whose active participation enables in-depth discussions that contribute to the verification of the learning outcomes defined in the individual research plans. Another important aspect of these seminars is that the majority of the audience often comes from fields that are quite distant from the seminar's specific research area. This diversity stimulates discussions not only on problem-solving approaches but also on technical aspects such as data analysis, which can be applied across various disciplines, including, for example, experimental particle physics and astrophysics. This creates an opportunity to verify the degree in which doctoral students develop transversal skills such as critical thinking, creativity, initiative, problem-solving, risk assessment, and decision-making. These competences are essential for the career progression of researchers in both academic and non-academic environments.

In an important development aimed at enhancing the methods of verification of learning outcomes was the transition away from a purely textual form of the annual reports which was used originally, to a form which includes a spreadsheet detailing the student achievements in a format amenable to quantitative analysis. This has enabled us to monitor student progress in a much more reliable, quantitative way. This was partly motivated by the need for a systematic process of evaluating the

students’ achievements required for a reliable implementation of the STER program. This process is still under development, although it has already yielded important insights.

Self-Evaluation

The doctoral school assesses its verification system as clear, reliable, and aligned with level 8 PQF requirements. Continuous improvements are made to maintain high standards and adapt to new challenges. One such improvement is the systematic collection of structured data about the students’ progress, which was introduced recently and is still under development. Another example is the creation of the Supervisor's Handbook, which includes important recommendations aimed at improving the methods of assessing learning outcomes as well as other aspects of the educational process. In the coming years, we plan to further develop support materials and training for staff to ensure consistent application of verification procedures.

3. Qualifications of academic teachers or research staff conducting education at the doctoral school

The adequacy of scientific and professional achievements and professional activity of individuals with respect to the scope of education delivered to doctoral students.

Qualifications of Doctoral School teachers necessary to achieve the learning outcomes are ensured through the selection of world-class researchers who are recognized for their outstanding contributions to science. This task is made relatively simple by the fact that the research staff at NCBJ and IChTJ includes many top-notch scholars who are very active and have very significant accomplishments. These experts publish in top international journals in their respective fields, ensuring their research meets the highest academic standards. Moreover, they regularly present their findings at the most important international conferences, actively participating in the exchange of cutting-edge knowledge. Additional advantage is the experience in teaching and in supervising doctoral students. This guarantees that doctoral students receive education and mentorship of the highest quality, fully supporting the achievement of the intended learning outcomes. The selected teachers' expertise is carefully aligned with the education programme to ensure that they can effectively deliver courses, mentor students, and support their academic and professional development. The profiles of five academic teachers or members of scientific staff who hold the highest qualifications in every discipline offered by its doctoral school are presented in the attachments.

Methods used to verify the qualifications and competencies of staff members

The recruitment of teachers is conducted by program coordinators based on an analysis of achievements in the aforementioned categories, including significant research contributions, publications in top international journals, grant applications and active participation in leading scientific conferences. Such data is publicly available and also collected by the entities in the dedicated databases.

At NCBJ, data on scientific achievements in particular include: publications, monographs/books/reports, conferences, seminars, teaching activities, editorial committees, membership of scientific organisations, reviews or popularisation. This data is collected in a database system, from which it is possible to generate reports on all employees engaged in research activities.

In addition, according to the Legislative Act of 30th April 2010 on research institutes, it is helpful to have periodic evaluations of research staff carried out by committees appointed by the Faculty Council. The appointed committees are dedicated to specific scientific disciplines and also include external representatives. The rules for carrying out these evaluations are described in detail in the regulations issued by the directors of the Institutes running the School.

Actions for the professional development, including actions related to serving as supervisors or auxiliary supervisors

The enhancement of qualifications and competencies among doctoral school staff in relation to their personal scientific development is ensured by internal mechanisms of the respective entities. These mechanisms involve regular assessments of academic staff development, evaluating scientific activity, the quality and quantity of publications, organizational involvement, and efforts to secure research grants.

The enhancement of competencies, including mentoring doctoral students and fostering transversal skills, is supported by the School through the preparation of handbooks for lecturers and supervisors, which will soon be available on the School’s website. Additionally, a training session titled "Communication and Collaboration in a Multicultural Team" was conducted as part of the NAWA-funded project "Welcome to Poland."

The nature and significance of resolved and ongoing disputes regarding the fulfilment of duties by the doctoral school’s staff members

One of the resolved disputes concerned a doctoral student who reported difficulties in collaboration with their auxiliary supervisor. In response to the complaint, a meeting was organized with the discipline coordinator and the Director of the Doctoral School to thoroughly assess the situation. Following this discussion and in agreement with the primary supervisor, it was decided to discontinue the involvement of the auxiliary supervisor in the doctoral student's project.

Another case involved a doctoral student who was dissatisfied with the collaboration with the supervisor, citing a lack of

support. The supervisor, in turn, stated that the student had not made sufficient progress. Despite a series of meetings aimed at resolving the situation, during which various methods of supporting the student's research work were suggested, the doctoral student ultimately decided to discontinue their studies.

Method used to assess the quality and effectiveness of teaching

To assess the quality and effectiveness of teaching, including how well staff members fulfill their responsibilities, we have implemented a student survey system conducted after the completion of courses. Another way, which has proved surprisingly fruitful, is through informal conversations with the students, who have been quite candid in conversations with the School staff. The results of these inquiries are analyzed by the School Council and taken into account when assigning lecturers.

Self-evaluation

We believe that our Doctoral School succeeded in ensuring the highest qualifications of academic teachers and academic staff working with doctoral students. Our teachers and supervisors are recruited amongst the world class scientists with a vast international experience. However, we plan to enhance the mechanisms for gathering feedback from doctoral students, including regular surveys, closer collaboration with the doctoral student government, and periodic meetings with supervisors.

4. Quality of the recruitment process

Quality and accessibility of information and internal regulations

The information about the operation of the School along with internal regulations pertaining to admissions are presented on the School website at

https://gradschool.ncbj.gov.pl

A handbook for students is also available there.

Overview of the admissions procedure

The competitions are initiated by posting lists of potential thesis topics. In general, applications are sought twice every year, so that students can begin the program either at the beginning of the winter semester (starting in October) or at the beginning of the spring semester (starting in February).

Lists of doctoral projects offered are always announced with a specific application deadline. Lists of these potential thesis topics for Physics sciences and Chemistry sciences are published separately and the applicants apply for a specific topic (with the option to provide a backup topic). The selection of applicants is very competitive, as some topics attract many applications.

The selection process involves two stages. The first stage is focused on the education and prior research experience relevant to the chosen topic. Graduate students work closely with senior scientists pursuing cutting-edge research, and those scientists play a decisive role in the selection process. The applicants should thus highlight in their research statements any relevant experience (such as involvement in research projects). If they have little relevant experience (e.g. because they wish to pursue something very different in their Ph.D.) they should take care to explain their motivation. This may play an important role in whether they will go on to the second stage.

Those applicants deemed most suitable for their chosen projects will be invited to take part in the second stage, which includes an oral exam designed to ensure that all incoming graduate students have a firm grasp of the basic concepts relevant to their chosen discipline. This is followed by a conversation about their research experience and interests.

The Admissions Committee was appointed by the School's director in summer 2019. It includes the director and deputy director as well as the Discipline Coordinators from both the disciplines currently represented in the School. The Admissions Committee members take part in all the entrance interviews. The presence of the directors of the School at the interviews is a reflection of the importance we attach to the admissions process. The interviews are conducted by members of the Admissions Committee, who invite the future doctoral project supervisor and usually one or more specialists.

Since the majority of our candidates are not based in Warsaw, interviews are conducted online. Given that all our teaching is done in English, that is also the language used during interviews. While we require a working knowledge of English, we are careful not to allow the level of proficiency to influence the outcome of the interview, which is based exclusively on the candidate's grasp of their discipline and their research experience. We are always also ready to accommodate any special needs of people with disabilities.

Scholarships are often funded by external entities, such as NCN. Initially the grant PIs held a separate interview prior to the School entrance exam, but many times the candidates selected that way did not pass the School entrance exams. For this reason, since 2020 the School interview comes first and the PI is always invited to participate.

Assessment of candidates

The interview consists of three parts, which all together require about 75 minutes on average.

Part I: this an oral exam where the applicant is asked to present three topics, one from each section, selected by the exam committee from a separate list for Physics, Chemistry. The goal of this part of the interview is to ensure that all graduate students begin with a good grasp of the basic tenets of their field at the undergraduate level. During the exam 3 topics are picked at random from a list published on our website and the candidate is expected to briefly present each of them. Notes may not be used. The presentation of the selected topics is the point of departure for questions from the interview panel. Applicants need to pass this part of the exam to go onto the next stage.

Part II: a short (10 minutes) presentation of the applicant's research experience (such as undergraduate thesis work).

Part III: applicants will typically be asked to read an article beforehand and present its main points (10 minutes). Notes or other materials may be used. The form of this part of the exam may differ depending on the requirements of external funding agencies.

The results of the selection process have until now been communicated to the applicants by email, although recently we have begun to issue negative decisions in the form of an official administrative decision. In cases when the candidate did not pass part I of the interview this is in addition communicated to the candidate verbally by members of the panel. In doubtful cases we recommend that the applicant should prepare and apply again in the future. There have been instances of applicants who were successful second time around.

We have not had appeals of our decisions so far, but if such should arise in the future they would be considered by the School Council.

Measures aiming to improve the admissions process.

The admissions process has changed somewhat over time. Initially a web-based portal was used, but for various technical reasons this was abandoned and since 2020 we switched to having applications sent by email. The essence of the process was not changed however.

Apart from advertising the projects offered on the School website, we strongly encourage the prospective Ph.D. supervisors to advertise their projects on bulletin boards and other means based on their research networks. We have also tried to attract candidates by placing advertisements in the quarterly publication "Semestr". We are continually looking for ways to reach suitable applicants.

Some mistakes have occasionally been made at the interview stage, where we accepted a borderline candidate. Such students typically have problems, and their struggles have a negative effect on the morale of the other students. We have learnt to be more steadfast in such situations, and maintaining high standards remains the cornerstone of our strategy.

The effectiveness of the admissions process can be measured by the drop-out rate. We have had 8 students abandoning their project and leaving the School (out of 71 admitted). In almost all instances these were students whose qualifications were assessed as borderline during part I the interview.

Self-evaluation

We believe that our process of selecting candidates is very effective, at the system level, but its implementation was sometimes too lax. The cases when a candidate was admitted who later did not perform adequately were almost always borderline admissions. To eliminate such situations, we have become more strict in implementing the admissions procedure.

While we get a lot of applications, most of them are weak and only about 10% of candidates are admitted which is rather a low number. We are very keen to find ways to attract more highly qualified candidates. We hope this will happen as we expand our growing alumni network.

5. Quality of scientific or artistic supervision and support for conducting scientific activities

The method and criteria for appointing supervisors.

According to our regulations, the Doctoral School Council develops a list of thesis topics along with proposed thesis supervisors and presents them to the directors of NCBJ and IChTJ for approval. Within 3 months from the date of commencement of education, the School Council appoints the doctoral student's supervisor or supervisors (or an auxiliary supervisor). Supervisors are selected from among world-class scientists, ensuring the highest standards of academic guidance. The selection criteria include their publication record, active participation in international collaborations, conference presentations, and success in obtaining research grants.

Replacement of supervisors

The Doctoral School Regulations state that in justified cases, the School Council, after consulting the student, may decide to change the supervisor - at the request of the student, supervisor or on its own initiative. So far we have experienced one such situation in which a doctoral student reported difficulties in collaboration with their auxiliary supervisor. In response to the complaint, a meeting was organized with the discipline coordinator and the Director of the Doctoral School to thoroughly assess the situation. Following this discussion and in agreement with the primary supervisor, it was decided to discontinue the involvement of the auxiliary supervisor in the doctoral student's project.

The requirements imposed on supervisors

The responsibilities of supervisors include assisting students in formulating and refining their Individual Research Plan, supervising its implementation, and ensuring that students meet the requirements of the education program. Additionally, supervisors are responsible for monitoring students' progress, encouraging participation in scientific conferences, and guiding them in publishing their research in peer-reviewed journals. They also facilitate students' involvement in research projects and international collaborations where possible. At the end of each academic year, supervisors are required to submit a written assessment of the doctoral student's progress to the School Council, ensuring that academic standards and research objectives are met.

The analyses of the work of supervisors and methods of resolving conflicts

One of the methods of supervising the quality of supervision is the annual evaluation process, in which supervisors submit written assessments of their doctoral students' progress to the School Council. This allows for an indirect assessment of how well supervisors support their students in achieving research milestones. Additionally, feedback from doctoral students is collected through informal discussions and direct communication with the Doctoral School administration. Cases of dissatisfaction or concerns regarding supervision are addressed individually, often involving meetings with the discipline coordinator or the Doctoral School Director to find appropriate solutions.

Another important measure is the mid-term evaluation, where students' research progress is assessed independently by an Evaluation Committee. While the primary focus is on the doctoral students' work, the results also provide insights into the effectiveness of supervision.

The access to necessary infrastructure
Each student is provided with an individual workspace, including a desk in a shared office, access to computers, and a well-maintained network infrastructure that supports their research activities. For advanced numerical calculations, students have access to the high-performance computing resources of the CIŚ supercomputer (computing farm), which allows for complex simulations and data analysis. Additionally, the Doctoral School provides licenses for specialized software, such as Mathematica, to support theoretical and computational research.

Doctoral students are also participating in cutting-edge experimental research conducted at world-class facilities. Opportunities include involvement in experiments at CERN, KEK, and the Warsaw Cyclotron. These collaborations provide students with hands-on experience in working with state-of-the-art scientific instruments and methodologies, further enhancing their research capabilities.

The Doctoral School also provides financial support for international research visits and conference participation. Funding is available through the School's own resources, as well as external grants, including NCN (National Science Centre) grants and the NAWA STER programme. This support enables doctoral students to conduct research at leading scientific institutions worldwide, establish international collaborations, and present their findings at prestigious conferences.

Collaboration with Renowned Experts from Other Institutions

Almost all projects undertaken by the Doctoral School are international and involve collaboration with leading experts from prestigious institutions worldwide, as evidenced by the co-authors listed in articles published in top international journals. These partnerships ensure a high level of scientific exchange and enable doctoral students to engage in a globally recognized academic environment.

Students also participate in specialized seminars, where speakers from around the world present the latest research findings. These events provide opportunities for students to stay current with developments in their fields and interact with experts from diverse international institutions.

Additionally, thanks to the NAWA STER grant, 32 long-term international internships were organized, allowing students to gain hands-on experience at leading research institutions abroad. These internships enhanced their academic and professional skills while offering the chance to collaborate with experts in a global context.

Co-supervised doctorates, auxiliary supervisors from abroad - 3 auxiliary supervisors from abroad (4 PhD students): University of Oxford (dr Aprajita Verma), L'Institut d'Astrophysique de Paris (prof. Patrick Peter), Istituto Nazionale di Astrofisica - Osservatorio di Astrofisica dello Spazio di Bologna (INAF-OAS) dr Daniela Vergani.

Self-assessment

The Doctoral School ensures a transparent and well-defined process for appointing or changing supervisors, with the School Council playing a central role in these decisions. Supervisors are carefully selected from world-class scientists based on their publication records, international collaborations, and experience in guiding doctoral students. In cases where a change of supervisor is necessary, the School follows a consultative process with the student to address any issues and facilitate a smooth transition. The Doctoral School also offers robust support, including access to advanced infrastructure, high-performance computing resources, and international collaborations, ensuring students have the necessary tools to succeed in their research and professional development.

6. Integrity of the mid-term evaluation process

Description of the system of midterm evaluation of doctoral students

The midterm assessment is carried out after completing the second year of studies. The Director of the Graduate School appoints members of the 3-person mid-term Assessment Committee for each doctoral student subject to evaluation and appoints the chairman. All members of the committee must have a habilitation degree; at least one must be employed outside the entities running the Graduate School. The mid-term assessment can be carried out at the meeting of the Committee or remotely (on the GoToMeeting, Zoom or other platform providing audio and video transmission).

Before the meeting, members of the Committee are provided with the documentation of the doctoral student from the Graduate School in the form of Annual Reports, the supervisor's opinion and the Individual Research Plan.

During the Committee meeting, the doctoral student presents a multimedia presentation on the obtained research results for a maximum of 20 minutes. The midterm assessment includes the assessment of the advancement level in the implementation of the Individual Research Plan and the assessment of the most important scientific achievements of the doctoral student related to the implementation of IRP.

In an open vote, the Committee makes its decision by a simple majority of votes in the presence of all members of the Committee. After the evaluation, the Committee presents the results to the director of the Graduate School with justification in writing. The Committee may also make recommendations for the further implementation of an individual research plan. The Chairman of the Committee informs the doctoral student about the result of the mid-term assessment (usually through email).

Method of appointing committee members

The 3-person mid-term assessment Committee for each doctoral student is appointed by the Director of the Graduate School. It consists of the Chairman (usually the discipline program coordinator form Doctoral School), one employee of the entities running the Graduate School (an expert in the field relevant to the evaluated students doctoral project) and one member from the external institution. This selection is based on the level of scientific achievements and the relevance of the expertise for the individual research plan.

Timeliness of evaluation

The midterm evaluation is conducted in accordance with legal requirements, which state that it should take place at the midpoint of the education period. However, due to the lack of precise definition in the regulations, we have established that the evaluation should occur within one or two months from the the completion of two years of education. Out of 44 evaluations conducted, 31 were completed within one month, 11 within two months, and two were delayed by six months due to extended research internships abroad.

The measures taken by the evaluated entity to ensure transparency, impartiality, and objectivity

The Doctoral School is committed to ensuring transparency, impartiality, and objectivity in all evaluation processes. To achieve this, we follow clear and publicly available criteria for assessments, involving independent experts in evaluation committees. To ensure that our regulations clearly state that the supervisor of the evaluated doctoral student, co-author of the publication, or the supervisor of his master's or bachelor's thesis may not be a member of the mid-term assessment Committee.

The method of communicating the result of the midterm evaluation

The Chair of the Midterm Evaluation Committee communicates the results to doctoral students via email. The full text of the evaluation report is available for review at the Doctoral School Office.

The procedure for handling objections

Specific regulations for handling objections were not included in the Doctoral School's regulations. It was assumed that general regulations and standard principles of transparency, fairness, and the right to appeal would apply in such cases. Doctoral students may submit their objections in writing to the Council of Doctoral School, where they will be reviewed. We acknowledge that such specific procedures should be added to the regulations governing the Midterm Assessment.

Self-evaluation.

The midterm evaluation system for doctoral students ensures transparency, impartiality, and objective assessment. The evaluation committees are composed of qualified members, including external experts, to guarantee unbiased assessments. Due to the high specialization of the research, our doctoral school has decided to form committees for specific thematic groups (sometimes even for a single student), which, despite the high costs, ensures a more precise assessment of progress and matches experts to the specific nature of the research, guaranteeing high-quality evaluation. While evaluations are mostly conducted within the required timeframe, occasional delays occurred due to extended research internships. Results are communicated promptly and transparently, with full reports available for review. While the system is effective, we recognize the need for a formal procedure to handle objections, which will be addressed in future revisions.

7. Internationalization

Degree of internationalisation of the staff

The research staff at NCBJ and IChTJ are very active, as their main focus is research. They regularly take part in conferences and workshops as well as research visits all over the world. Many of them are involved in international collaborations such as CMS and ATLAS at CERN. We have had some supervisors or auxiliary supervisors based abroad. There are also a number of researchers of foreign origin who are working at NCBJ and ICHTJ and are supervising students. Some of them are introduced on our website:

https://gradschool.ncbj.gov.pl/our-faculty/

Their connections with institutions abroad have played a role in establishing international collaborations and in the scientific development of our graduate students and their employment prospects. This has also played a role in attracting foreign researchers who have given lectures or seminar talks, or hosted visits by our students.

Degree of internationalisation of the education process

During the past three years we had been carrying out a project which was part of the STER program funded by NAWA. This project made it possible for our students to participate in research visits in leading institutions all over the world for periods between one and three months. Altogether our students went abroad 31 times and spent altogether 49 months gaining experience in leading research centres around the world. Apart from the research visits funded by NAWA through the STER program, currently enrolled students made 103 trips (research visits, conferences, workshops) funded from other sources, including research grants hosted by NCBJ and ICHTJ or funds of other research institutions around the world (such as CERN) or agencies such as the Fulbright Commission.

In addition to research visits, our students have in the past four years taken part in many international workshops and conferences, giving over 192 talks and presenting 73 posters.

The research carried out by our students, typically in collaboration with their supervisors and other research personnel both in Poland and outside, has resulted in 147 publications in international journals, typically leading journals in their fields of research.

How the educational process caters to the needs of foreign students

The majority of our students are of foreign origin, so all lectures, tutorials and seminars are conducted in English. Due to the collaborative nature of most of the research conducted here the atmosphere is very similar to other research institutes in Europe.

Integration of international students

The school is a thoroughly international undertaking, with students from almost
18 different countries having been admitted since October 2019. The numbers are:

Poland	19
India	16
Italy	10
Iran	4
Spain	3
Kenya	3
Cameroun	3

Mexico 2
Lebanon 2
Switzerland 1
Etiopia 1
Ukraine 1
Germany 1
China 1
France 1
Pakistan 1
UK 1
Morocco 1

The integration of these international students is of paramount importance to our success. Many of them are rather far from their home countries and come from very diverse cultures and backgrounds. To help with integration, the students have desk space in areas where they are in close proximity to other students.

As part of the STER programme, a “Handbook” for all doctoral students starting their education at school was created to facilitate their functioning at the School, as well as more generally in Poland. One of its parts is addressed to foreign students and includes useful information about Polish culture, customs and traditions.

Apart from common educational activities, the school encourages social integration through regular outings, typically for a pizza meal. The school also organises other events such as a
Christmas party. We have also had movie nights.

For those who wish to pick up some Polish, the Institute organises Polish language courses which are available to our foreign students free of charge.

Our parent institutions also try to help with accommodation which is a big problem in our city. NCBJ has a number of apartments which are rented out to incoming students for up to a year at sub-market cost. We also encourage students to collaborate in finding apartments they can share. As part of the NAWA project "Welcome to Poland" - "Communication and collaboration in a multicultural team" workshops were also organized for all doctoral students. They could learn how to better communicate and collaborate in a team of people from different cultures.

Methods used to increase the international recognition

In the fields of Physics and Chemistry international recognition is a necessary condition for making meaningful contributions to the progress of science. Because of this we try hard to gain that recognition by a number of means:

Support for workshops/conferences: One important way to do that is to make sure that our students regularly participate in international conferences and that when they do they are well prepared. For this reason much effort is devoted to developing their abilities in the area of presenting their work.This is indispensable for a research career in physics.
International collaboration: NCBJ staff typically conduct research in collaboration with colleagues abroad, and this benefits the students. Examples: CERN groups, astro, neutrinos. Most projects are anchored in such activities.
Joint degrees: While we have had auxiliary supervisors from abroad, we have not had a joint degree. We are currently In the process of signing an agreement for one of our students to work towards a joint degree with an institution in France.
Graduate School Networks: Talks have been held with the University of Ghent for NCBJ to enter an international network of doctoral schools. The Doctoral School applied for EU funding under the MARIE SKŁODOWSKA-CURIE ACTIONS Doctoral Networks (DN) programme with two separate proposals. Both applications were prepared in collaboration with international partners and focused on the implementation of joint research and training projects.

To attract gifted candidates, including foreign students, the research project supervisors use web-based bulletin boards and other means specific to their field of research.

We strongly believe that the level of international recognition for our school can be raised and maintained by ensuring that our graduates secure postdoctoral positions at leading research centres around the world. Among our graduates there are a number of such cases which are listed on our website:

https://gradschool.ncbj.gov.pl/our-alumni/

We hope that we can maintain close contact with our graduates by various means. One way we are trying to do that is by providing our alumni with email addresses which will make it possible to contact them. These addresses are intended to remain valid indefinitely. As the number of our alumni grows, we hope to organize events which would give them the opportunity to share their experience with our students.

Self-evaluation

We are happy with our efforts to create a truly international community of young researchers engaged in collaborative research at the highest level. We are now concerned with maintaining this success, which faces a number of challenges. What is most needed is the funding necessary to maintain the level of mobility which we have been able to attain thanks to the STER project which we were awarded in 2021. We are planning to apply for another such grant in the near future. A major problem which our students face is the high cost of accommodation which would need to be offset by higher scholarships. Here again we have been greatly aided by the STER grant in the past, and we hope we can secure another such grant this year.

8. Effectiveness of doctoral education

Percentage of individuals who obtained a doctoral degree	Doctoral students who applied for initiation of proceedings for the award of a doctoral degree	Doctoral students who were awarded a doctoral degree	Doctoral students who were denied the award of a doctoral degree
in the number of doctoral students who completed their education at the doctoral school during the evaluation period	64 %	59 %	0 %
in the total number of doctoral students who completed their education at the doctoral school	64 %	59 %	0 %

Summary of program completion statistics

Total number admitted: 71
Completed the program: 20
Resigned: 8
Thesis submitted before the end of the 4-year program: 16
Thesis submitted within 2 years of completing the program: 2

Scientific achievements

Publications in top research journals with global reach: 147
Average number of publications per student at graduation: 2.8
Conference talks: 192
Conference posters: 73
Average number of conference talks per student at graduation: 4.7
Long research visits in foreign institutions (1-3 months): 30, total months: 49
Short foreign trips: 103

Student feedback on the quality of education

We seek student feedback through anonymous polls as well as through formal and informal conversations. This has led to important insights concerning:

the evaluation process
the program load
the functioning of the graduate seminar
their interactions with their thesis supervisors
their interactions with their peers
the need for some form of counselling

In consequence, a number of important changes were instituted in the operation of the School, such as:

reductions in the program load,
the drive toward a more rigorous, quantitative assessment of student progress through the collection of structured data,
the creation of a Student's Handbook,
the creation of a Supervisor's Handbook,
the implementation of tutoring sessions for students preparing talks for the graduate seminar,
the introduction of meetings (by the director and discipline coordinator) with individual students after 3 months.

Methods of utilising data on post-grad careers

Information about post-doctoral appointments of our graduates in an important recruiting tool:and is highlighted on our website:

https://gradschool.ncbj.gov.pl/our-alumni/

Self-evaluation

We consider the drop-out rate to be much too high. We are addressing it in two ways:

More rigorous admission standards.
Efforts aimed at catching problems as early as possible.

1. chemical sciences

Achievement Description

1 Emilia Majka

Emilia Majka was accepted into the NCBJ-ICHTJ Doctoral School in October 2020. Her PhD thesis focuses on the synthesis and studies of core-shell nanoparticles, specifically gold nanoparticles coated with the radionuclides 197mHg and 197Hg. The goal of her research is to utilize these nanoparticles in Auger-Meitner radionuclide therapy. Additionally, Emilia has participated in other research projects, including the separation processes of the radionuclides 135La and 43,44Sc from 40Ca and 44Ca targets that were irradiated in a cyclotron.

During her studies at the Doctoral School, Emilia Majka published three papers. She served as the author and investigator of a grant “promotorski” the National Science Centre (NCN) and presented her work at three international conferences. At the large conference International Symposium on Trends in Radiopharmaceuticals (ISTR-2023) in Vienna, she received the first prize for the best contribution by a young scientist. Similarly, at the NOMRad – NOMATEN International Radiopharmaceutical Conference, she was awarded first prize and financial support for her oral presentation. In 2022, Emilia Majka was honored with a prestigious Fulbright scholarship, which she completed at Duke University. Her doctoral defense is scheduled for June 2025.

2 Nelson Rotich Kiprono

Nelson Rotich Kiprono was accepted into the NCBJ-ICHTJ Doctoral School in January 2021. In his doctoral thesis, he focuses on the application of nuclear methods in hydrometallurgical research. For his studies, he utilized various physicochemical and analytical techniques, including gamma spectrometry, transmission electron microscopy (TEM), scanning electron microscopy (SEM), inductively coupled plasma mass spectrometry (ICP-MS), X-ray fluorescence, and neutron activation analysis. A significant achievement in his work was the use of small neutron generators (D–T sources) for monitoring hydrometallurgical processes. Nelson is the author of four publications and co-authored a paper published in one of the leading scientific journals, Science, in Issue 379, Pages 561-566, 2023. His doctoral defence is scheduled for April 2025.

3 Nasrin Abbasi Gharibkandi

Nasrin Abbasi Gharibkandi was accepted into the NCBJ-ICHTJ Doctoral School in May 2021. Her research focuses on the synthesis and biological studies of radiobioconjugates based on 103Pd and 109Pd nanoparticles, exploring their potential application in Auger electron therapy. A significant aspect of her work is dedicated to studying the 103Pd(, 103Rh)and 109Pd(, 109mAg)recoil reactions in the metallic phase. An essential part of her doctoral thesis involves numerous in vitro studies using adherent cell cultures and three-dimensional spheroids as tumor models with defined microenvironments.

Nasrin's doctoral dissertation, titled “Radiopharmaceuticals based on 103Pd/103Rh and 109Pd/109mAg In Vivo Generators for the Therapy of Breast Cancer (HER2+) and Hepatocellular Carcinoma,” is scheduled for defense in June 2025. She is a co-author of nine papers published in renowned international journals, with eight of them being as the first author, and has delivered oral presentations at various national and international conferences. Additionally, she has participated in research grants funded by the National Science Center and the COST Action. Nasrin has also been accepted for a postdoctoral position at the University of Missouri (USA).

2. physical sciences

Achievement Description

1 Margherita Grespan

Dr Margherita Grespan’s research applied methods of artificial intelligence to the analysis of gravitational wave data, in particular to the detection of supernovae signals in gravitational wave data. She has co-authored 7 research articles, published in leading international journals. She has delivered 12 conference talks, including 6 at major international conferences. She has also presented 5 conference posters, including 3 at major international conferences. She is also a recipient of a Bekker grant awarded by NAWA. For her postdoctoral research she is going to the University of Oxford.

2 Sree Kanth Hari Kumar

The primary objective of Sree Kanth Hari Kumar’s research is to study the lensing of gravitational waves in General Relativity and theories beyond General Relativity. This research is motivated by several existing theoretical and experimental results, such as the Hubble tension, existence of singularities, dark energy, dark matter, as well as difficulties of unification of GR with quantum mechanics. Sree Kanth Hari Kumar has co-authored 7 research articles, published in leading international journals. He has delivered 6 conference talks at international conferences.He is also a recipient of a DoRA plus grant.

3 Krzysztof Lisiecki

Krzysztof Lisiecki’s research addresses important open questions in extragalactic astronomy: how do stars, metals and cold dust co-evolve in massive galaxies at high-redshifts? In particular, he has studied the interstellar medium properties of retired (quenched) galaxies, which involved familiarisation with state-of-the-art cosmological simulations. Krzysztof Lisiecki has co-authored 5 research articles, published in leading international journals. He has delivered 2 conference talks. He has also presented 6 conference posters. He has been awarded two grants: PRELUDIUM as well as the prestigious grant Perły Nauki.

4 Victor Martinez-Fernandez

The research of dr Victor Martinez-Fernandez addressed the problem of next-to-leading order and higher-twist corrections to the determination of the Generalized Parton Distributions in view of the precision era ushered in by a new generation of experiments, such as AMBER at CERN and the electron-ion collider (EIC), among others. He has co-authored 3 research articles, published in leading international journales, and has delivered 10 conference talks. He has also presented a poster at a major international conference. He is also a recipient of the PRELUDIUM grant. Having obtained his degree, dr Martinez-Fernandez has secured a postdoctoral research position at CEA, Saclay in France.

ATTACHMENTS

Adequacy of the education program and individual research plans to the learning outcomes for qualifications at PRK level 8 and their implementation

No.	File type	Filename
1	Education programmes during the evaluation period	EDUCATION PROGRAM_2019.pdf
2	Education programmes during the evaluation period	EDUCATION PROGRAM_2021.pdf

Method of verifying learning outcomes for qualifications at PRK level 8

No.	File type	Filename
1	The method of assessing the learning outcomes for qualifications at level 8 of the PQF	Verification Rules for Learning Outcomes for Qualifications at PRK Level 8.pdf

Qualifications of academic teachers or research staff conducting education at the doctoral school

No.	File type	Filename
1	chemical sciences	Sylwetki_chemia_eng.pdf
2	physical sciences	Lecturer_Profiles.pdf

Quality of the recruitment process

No.	File type	Filename
1	The compositions of the admissions committees during the evaluation period and the rationale for their selection with the aim of maintaining high admission standards	Justification for the Composition of the Recruitment Committee in the Context of Guaranteeing and Ensuring a High Standard of Recruitment.pdf
2	The admissions rules of the doctoral school during the evaluation period	RECRUITMENT RULES_2019.pdf
3	The admissions rules of the doctoral school during the evaluation period	RECRUITMENT RULES_2021.pdf
4	The regulations of the doctoral school during the evaluation period	REGULATIONS_2019.pdf
5	The regulations of the doctoral school during the evaluation period	REGULATIONS_2021 .docx.pdf

Quality of scientific or artistic supervision and support for conducting scientific activities

No.	File type	Filename
1	Internal regulations that pertain to the midterm evaluation and that are in force during the evaluation period, such as evaluation rules and criteria	Rules for the conduct of the midterm assesment.pdf

STATEMENTS

- I hereby declare that the information contained in the self-assessment report is fully consistent with the factual and legal status.
- I hereby declare that the information contained in the self-assessment report in Polish and English is fully identical in substance.
- I hereby declare that the documents attached to the self-assessment report in Polish and English are fully identical in substance.

Signature

AUTHORIZATIONS

Added files

D.011.1.18.2025_Spaliński_pełnomocnictwo ewaluacja szkół doktorskich_system SEDok.pdf

D.011.1.17.2025_Malinowska_pełnomocnictwo ewaluacja szkół doktorskich_system SEDok.pdf

Education Program at the Doctoral School run in the Units National Center for Nuclear Research and Institute of Nuclear Chemistry and Technology

Program Assumptions

The need to establish a doctoral school by two scientific and research units: the National Centre for Nuclear Research (NCBJ) and the Institute of Nuclear Chemistry and Technology (IChTJ) - has been present for a long time. It arises from the shared history of the institutes dating back to the 1950s, the complementarity of the research they conduct, and more recently, from the growing needs of the economy and science, which require specialized education for personnel in the Polish Nuclear Energy Program (PPEJ) and the continuously developing applications of ionizing radiation. There is also a need to strengthen the academic staff in Polish science due to its growing position in the global research space and the emphasis placed on innovation. Both research institutions and universities, as well as government administration bodies implementing programs related to atomic energy, require educated employees with broad interdisciplinary knowledge in the field of nuclear physics and chemistry. Talented doctoral graduates with in-depth specialist knowledge in nuclear physics, astrophysics, radiochemistry, radiation chemistry, or radiobiology will significantly strengthen the Polish scientific community. The globalization of scientific research and the open research space in Europe offer guarantees of employment not only in the country but also in many foreign institutions.

The institutes establishing the Doctoral School are leading units in their respective disciplines (in the latest categorization: NCBJ-A+, IChTJ-A, and in the previous one: NCBJ-A, IChTJ-A+). Within the framework of the current individual doctoral studies at these units, education is offered that is unavailable at any of the university centres in the country. In this regard, the creation of a doctoral school offering systematic studies in the field of natural sciences and, more specifically, in the physical and chemical sciences is highly justified. New solutions, an expanded curriculum, and a clearly defined evaluation system for doctoral students and supervisors will contribute to raising the quality of doctoral dissertations and ensuring their timely completion. This will be supported by a stable scholarship system, clear recruitment criteria, and professional management of the School.

The development of modern science increasingly depends on the use of unique research facilities built and operated by international teams of scientists. The research opportunities provided by large research facilities, such as the Maria reactor at NCBJ and the unique POLFEL structural research facility being built in Świerk, offer valuable prospects for scientific research. The results obtained at such facilities have both cognitive and practical significance in fields such as physics, structural chemistry, biology, medicine, and materials science.

One of the features of the Doctoral School is to be the interdisciplinary nature of the education provided. The combination of the potential of two scientific disciplines will allow for a change in the teaching model through a joint Doctoral School program that expands the scope of education, and, in the future, encourages the integration of activities that stimulate the search for new research fields enabling the preparation of interdisciplinary dissertations. Among the research fields currently requiring particular integration are three domains present in the statutory research programs of both institutes: nuclear energy, radiopharmacy, and materials science.

1. Research in Nuclear Energy and Materials Physics

   The Polish Nuclear Energy Program, adopted by the Council of Ministers on January 28, 2014, imposes the requirement to "ensure the supply of specialized staff/human capital" and build "technical and scientific research infrastructure for Polish nuclear energy." Ensuring the support infrastructure for nuclear oversight and government administration in the safe operation of nuclear energy facilities according to IAEA guidelines requires the preparation of specialized staff. Highly qualified specialists in nuclear physics and chemistry are needed to implement further stages of the nuclear program, assess technical solutions, and oversee the commissioning of new facilities. There is also a need for skilled personnel in research and scientific units, supporting the Polish Nuclear Energy Program (PPEJ) and the technical support unit (TSO) under development. This also fits into the Responsible Development Strategy and supports the development of National Smart Specializations (KIS).

   The complementary and appropriate competencies of the two institutes that established the Doctoral School are in line with the creation of the TSO, an organization from which future employees will be recruited, including specialists trained in the School. NCBJ specializes in nuclear physics and reactor physics, while IChTJ develops nuclear chemistry. Both units conduct materials research.

2. Research in Radiopharmacy

   Poland, operating the Maria research reactor, is currently one of the key global suppliers of radiopharmaceuticals. The POLATOM Radioisotope Centre, part of NCBJ, is the producer and distributor of radiopharmaceuticals. In the near future, a cyclotron, as part of the CERAD project, will be added to the list of facilities producing isotopes. The isotopic preparations produced at the center are used in medicine, science, industry, and environmental protection. The conducted scientific research is application-oriented and focuses on radiopharmacy, nuclear chemistry and technology, as well as disciplines such as radiochemistry, biochemistry, and immunology. The result of the research is the development of proprietary technologies that are then implemented at the unit. At the same time, more basic research in the field of radiopharmacy is carried out at IChTJ, where new radiopharmaceuticals for both diagnostics and therapy are designed and synthesized. Significant achievements in the field of radiopharmacy at IChTJ and NCBJ make the intensive development of this topic a priority. Radiopharmacists trained at the Doctoral School will contribute not only to the parent institutions but also to the rapidly emerging centers for producing radiopharmaceuticals for diagnostic studies using positron emission tomography (PET).

3. Basic Research in Chemistry and Physics

   By integrating certain research domains, we aim to further develop several fields that have been a source of pride for the institutes and have generated interesting doctoral topics. These include:

   - Biochemistry
   - Radiation Chemistry
   - Nuclear Physics
   - Condensed Matter Physics

- Plasma Physics
- High-Energy Physics
- Cosmic Ray Physics, Astrophysics, Cosmology

Basic research ensures the continuous development of disciplines through contact with global science and the introduction of innovative solutions. The Doctoral School will be established to strengthen the international prestige of both scientific and research institutions, enabling them to compete with leading foreign entities in the field of research and to complement education in Polish universities in the physical and chemical sciences.

General Provisions

1. Doctoral students are required to follow an individual education program agreed upon with their supervisors and approved by the School's Council.
2. Classes organized by the School will be available to students regardless of their year of study.
3. Before the start of each semester, the School will announce a list of proposed courses and assign ECTS points to them. Depending on how many students express interest in a given course, the School's Council will decide which courses will be offered in the upcoming semester.
4. Classes may be conducted in a tutorial format.
5. Classes may be conducted in an e-learning format.
6. Classes may be conducted in the traditional semester format, in the form of short cycles of weekly lectures or as intensive workshops lasting a shorter period.
7. All classes conducted within the Doctoral School will be available to students from universities and other research institutions that have entered into cooperation agreements with one of the units running the Doctoral School. In such cases, the classes may be registered and announced in the USOS system (or an equivalent) of the respective university.
8. Classes within the School will mostly be conducted in English.
9. The School will aim to support (based on grants for young researchers or other means from the institutions' own resources):

    a. Obtaining language qualifications, including Polish language courses for foreigners
    b. Participation of students in summer and winter schools for doctoral students

Program Blocks and Requirements

The courses offered in the school are grouped into blocks that form the requirements for completing the education program. In addition to completing courses chosen from the thematic blocks listed below, students must pass exams in the fundamentals of their discipline before the mid-term evaluation. These exams correspond to the doctoral examination, and their detailed structure is defined by the School's Council. It is assumed that most of the courses conducted by the School will be attractive to students, regardless of their primary research discipline.

I. Basic Knowledge Block

This block is designed as preparation for discipline exams preceding the mid-term evaluation and covers fundamental areas of physics and chemistry. In the physics discipline, this includes mechanics, quantum theory, electrodynamics, and statistical physics. In the chemistry

discipline, it includes physical chemistry, inorganic chemistry, and coordination chemistry. The courses are not mandatory, but an exam is required.

II. Methodological Courses Block

Example courses:

- Machine Learning and Data Science (2 ECTS)
- Mathematical Methods (2 ECTS)
- Computational Methods in Chemistry and Physics (2 ECTS)
- Statistical Methods in Experiment Analysis (2 ECTS)
- Programming Tools and Pragmatics of Large Computational Clusters (1 ECTS)
- Parallel Computing (2 ECTS)
- Programming Environment Linux/Bash/Python (1 ECTS)

A minimum of 3 ECTS points from this block is required during the first 4 semesters of study.

III. Specialist Lectures Block

This block includes lectures for doctoral students held at higher education institutions (particularly those with which the Institutes have educational cooperation agreements) as well as monographic lectures conducted within the School.

Example courses:

- Extragalactic Astrophysics (2 ECTS)
- Radiopharmaceutical Chemistry (1 ECTS)
- Quantum Chromodynamics (3 ECTS)
- Nuclear Physics (2 ECTS)
- Materials Physics, including Radiation Effects (2 ECTS)
- Neutrino Physics (2 ECTS)
- Radiobiology (2 ECTS)
- Radiochemistry and Radiation Chemistry (3 ECTS)

A minimum of 6 ECTS points from this block must be completed during the first 6 semesters of study, with at least 4 points obtained during the first 4 semesters (i.e., before the mid-term evaluation).

IV. Research and Development Issues Block

Example courses:

- Nuclear Energy (2 ECTS)
- IP Protection, Commercialization, Collaboration with Industry (1 ECTS)
- High-Temperature Reactors (1 ECTS)
- Application of Large Research Facilities (1 ECTS)
- Application of Nuclear Methods in Science, Industry, and Medicine (1 ECTS)

A minimum of 1 ECTS point from this block must be obtained during the first 6 semesters.

V. Seminars Block

- Doctoral seminars conducted by the School (1 ECTS per semester)
- Specialist seminars held at the Institutes or other centers (1 ECTS per semester)

Every doctoral student is required to attend at least one specialist seminar throughout their studies and actively participate in one of the Doctoral Seminars conducted by the School throughout their studies. Attendance must be confirmed by a record in the index at the end of each semester.

VI. Presentation of Results and Applying for Research Funding Block

Example courses:

- Preparing Presentations, Publications, Seminar and Conference Talks (1 ECTS)
- Preparing Grant Proposals (1 ECTS)
- Science Popularizer Workshop (1 ECTS)
- Voice Emission and Public Speaking Techniques (1 ECTS)

A minimum of 2 ECTS points from this block must be obtained during the first 4 semesters.

VII. Professional Practice Block

- Exercises for lectures within the doctoral school (may be conducted by doctoral students after mid-term evaluation)
- Supervision of trainees, interns, and students conducting exercises in the laboratory

Courses in this block are optional.

Completion

To meet the program requirements for the mid-term evaluation, a minimum of 17 ECTS points and a positive result from the discipline exam are required. To meet the program requirements for the entire period of study, a total of 30 ECTS points must be earned. Results of the courses and exams are entered into the doctoral student's index by the instructor of each course.

1. For courses conducted outside the School, the completion rules adopted by the unit organizing the courses apply.
2. Courses conducted by the School may end with an exam or be graded without an exam.
3. For courses conducted by the School, the doctoral student may take the exam in either the first or second term set by the lecturer. If the doctoral student does not obtain a passing grade in the regular term, they may request a committee exam before the School's Council in justified cases.
4. The grading scale set in the School's regulations applies.

Education Program at the Doctoral School run in the Units

National Center for Nuclear Research and Institute of Nuclear Chemistry and Technology

Program assumptions

The need to establish a doctoral school by two scientific and research units: the National Center for Nuclear Research (NCBJ) and the Institute of Nuclear Chemistry and Technology (IChTJ) has existed for a long time. It results from the common history of institutes dating back to the 1950s, the complementarity of their research, and recently from the growing needs of the economy and science awaiting specialist training of staff for the Polish Nuclear Power Program (PPEJ) and constantly developing applications of ionizing radiation. It is also necessary to strengthen the staff in Polish science due to its increasing position in the global research area and the emphasis placed on innovation. Both research institutions and universities, as well as state administration units implementing programs related to atomic science, expect educated employees with extensive interdisciplinary knowledge in the field of nuclear physics and chemistry. Talented graduates of doctoral studies with in-depth specialist knowledge in the field of nuclear physics, astrophysics, as well as radiochemistry, radiation chemistry and radiobiology will significantly contribute to the Polish scientific staff. Globalization of scientific research and open research space in Europe guarantee work not only in the country, but also in numerous foreign institutions.

The institutes establishing the Doctoral School are the leading units in their disciplines (in the last categorization NCBJ-A +, IChTJ-A, in the previous one: NCBJ-A, IChTJ-A +). As part of the individual doctoral studies currently conducted in these units, education is offered which is not available in any of the university centers in the country. In this aspect, the creation of a doctoral school offering systematic studies in the field of exact and natural sciences, and more specifically in the disciplines of physical and chemical sciences, is perfectly appropriate. New solutions, extension of the study program, and a strictly defined system of evaluation of doctoral students and supervisors will allow to improve the quality of doctoral dissertations and their timely implementation. A stable scholarship system, clear recruitment criteria and professional school management will help in this.

The development of modern science increasingly depends on the use of worldwide unique research devices built and operated by international teams of scientists. Large research devices, such as the Maria reactor located in NCBJ and the unique device for structural research POLFEL, which is being built in Świerk, provide valuable opportunities for research conducted as part of the Doctoral School. The results of research obtained on such devices have both cognitive and practical importance in such fields as physics, structural chemistry, biology, medicine and materials research.

One of the features of the Doctoral School is the interdisciplinary nature of its teaching. The combination of the potential of two scientific disciplines will allow for a change in the teaching model through a joint program of the Doctoral School broadening the profile of education, and in the future also for the integration of activities stimulating the search for new research fields enabling the preparation of interdisciplinary dissertations. Among the research fields that currently require special integration, three domains can be mentioned, which are present in the statutory research programs of both institutes. These are: nuclear energy, radiopharmaceutical and material research.

1. Research in the field of nuclear energy and material physics

The Polish Nuclear Power Program, adopted by the Council of Ministers on January 28, 2014, requires "to ensure the supply of specialized human resources / human capital" and to build "technical, scientific and research facilities for Polish nuclear energy". Provision of facilities supporting the nuclear supervision and government administration in the field of safe operation of nuclear power facilities in accordance with IAEA guidelines requires the preparation of specialized personnel. We need high-class specialists in nuclear physics and chemistry who can implement the next stages of the nuclear program, correctly assess

the technical solutions introduced and guide the commissioning of new facilities. Qualified staff in research and development units, which strengthen the PPEJ, and the leaven of the technical support unit - TSO, are also needed. It is also in line with the Responsible Development Strategy and allows to support the development of National Smart Specializations (NSS).

The competences of the two institutes establishing the Doctoral School are complementary and adequate in the context of the created TSO, an organization whose future employees will be recruited, inter alia, from specialists educated at the School. The NCBJ domain is nuclear physics and reactor physics, while the IChTJ develops nuclear chemistry. Material tests are carried out in both units.

2. Research in the field of radiopharmacy

Poland, operating the Maria research reactor, is currently one of the most important suppliers of radiopharmaceuticals in the world. The producer and distributor of radiopharmaceuticals is the POLATOM Radioisotope Center, which is part of the NCBJ. In the near future, the cyclotron, developed under the CERAD project, will be added to the list of isotope generating devices. Isotope preparations produced in the center are used in medicine, science, industry and environmental protection. The conducted research is application-oriented and relate to radiopharmacy, chemistry and nuclear technology, as well as such scientific disciplines as: radiochemistry, biochemistry and immunology. The result of the research is the development of own technologies, which are then implemented in the unit. At the same time, more fundamental work in the field of radiopharmaceuticals is carried out at IChTJ, where new radiopharmaceuticals are designed and synthesized for both diagnostics and therapy. Due to the great achievements in the field of radiopharmacy of two centers - IChTJ and NCBJ - intensive development of this subject is purposeful. In the future, radiopharmacists educated at the Doctoral School will not only supply mother institutions, but also other centers that are emerging rapidly, producing radiopharmaceuticals for diagnostic tests performed with the positron emission tomography (PET) technique.

3. Basic research in chemistry and physics

By integrating some research domains, we want to further develop many fields that have so far been the pride of institutes and generate interesting topics for doctorates. These are:

- Biochemistry
- Radiation chemistry
- Nuclear Physics
- Physics of Condensed Matter
- Plasma physics
- High Energy Physics
- Physics of cosmic rays, astrophysics, cosmology

Basic research guarantees the constant development of disciplines by maintaining contact with world science and introducing innovative solutions. The Doctoral School will be created with a view to strengthening the international prestige of both research and development centers, which can boldly compete with leading foreign units in the field of research, and supplement education at Polish universities in the field of physical and chemical sciences.

General arrangements

1. Doctoral students are required to implement an individual study program agreed with their supervisors and approved by the School Council.
2. Classes organized by the School will be available to students regardless of the year of study.
3. Before the beginning of each semester, the School publishes the list of proposed classes and assigns them the number of ECTS points (except for the obligatory examinations referred to in the description of the 1st program block below). Depending on the number of people willing to participate in a given class, the School Council will select the classes to be conducted in the coming semester.
4. Classes can be conducted in tutorial mode.
5. Classes may be conducted in the e-learning mode.
6. Classes may be conducted in the usual semester mode, in the form of short series of several weekly lectures or in the form of intensive workshops lasting for a shorter period.
7. All classes conducted as part of the doctoral school will be made available to students of universities and other scientific units that have concluded a cooperation agreement with one of the Units running the Doctoral School.
8. Classes within the framework of the School are conducted in English.
9. The school will try to support (based on a grant for young scientists or otherwise from the units' own resources)
a. acquiring foreign language qualifications, including Polish language courses for foreigners
b. participation of students in summer and winter schools for doctoral students

Program blocks and requirements

The classes offered at the school are grouped into blocks used to formulate the requirements for passing the curriculum. It is assumed that a significant part of the activities conducted by the School may be attractive to students, regardless of the primary discipline in which they conduct their research.

I. Basic knowledge block

These classes cover the basic sections of physics and chemistry. In the discipline of physics, this block covers Mechanics, Quantum Theory, Electrodynamics, and Statistical Physics. In the field of chemistry, this block covers Physical Chemistry, Radiation Chemistry, Fundamentals of Radiobiology, Chemistry and Nuclear Energy. Classes in this block are not compulsory, but an examination is required on the date set by the teacher. Students must pass these examinations prior to the mid-term evaluation.

II. Block of methodological classes

For example:

- Machine Learning and Data Science
- Mathematical methods
- Computational methods in chemistry and physics
- Statistical methods in the analysis of experiments
- Programming tools and the pragmatics of programming large computing clusters
- Parallel processing
- Linux / Bash / Python development environment

It is required to obtain a minimum of 6 ECTS points from this block during the first 4 semesters of study.

III. Block of specialized lectures

This block includes lectures for doctoral students conducted at universities (in particular those with which the Units have a teaching cooperation agreement), as well as monographic lectures conducted as part of the School.

For example:

- Extragalactic Astrophysics
- Radiopharmaceutical chemistry
- Quantum chromodynamics
- Nuclear physics
- Material physics including radiation effects
- The physics of neutrinos
- Radiobiology
- Radiochemistry with radiation chemistry

It is required to obtain a minimum of 12 ECTS points in this block during the first 6 semesters of study, including a minimum of 6 ECTS points in the first 4 semesters.

IV. A block of research and development issues

For example:

- Nuclear energy
- IP protection, commercialization, cooperation with the industry
- High-temperature reactors
- Application of large research devices
- Application of nuclear methods in science, industry and medicine

It is required to obtain a minimum of 3 ECTS credits during the first 6 semesters.

V. Block of seminars

- Weekly doctoral seminars conducted by the School
- Weekly specialist seminars held at the Units or at other centers

Each doctoral student is obliged to participate in at least one specialist seminar throughout the study period and to actively participate in one of the Doctoral Seminars conducted by the School throughout the study period. Participation in seminars must be confirmed by an entry in the index after each semester.

VI. Block related to the presentation of results and applying for research funds

For example:

● Classes on the preparation of presentations, publications, seminars and conferences

● Classes on the preparation of grant applications

● Popularizer workshop

● Classes on voice emission and other aspects of public speaking

It is required to obtain a minimum of 3 ECTS credits during the first 4 semesters of study.

VII. Block of apprenticeships

● Classes for lectures at the doctoral school (may be conducted by doctoral students after the mid-term evaluation)

● Taking care of interns, apprentices and students who perform exercises in the studio

Classes in this block are not compulsory.

Passing

The results of credits and exams are entered into the doctoral student's index by the person conducting the classes.
1. With regard to classes carried out outside the School, the rules of obtaining credits adopted in the unit organizing the classes shall apply.
2. Classes conducted by the School may end with an examination or a credit without an examination.
3. In the case of classes conducted by the School, the doctoral student may take the exam on the first or second date set by the lecturer. If the doctoral student does not obtain a positive grade in the normal manner, then in justified cases, he / she may apply for an exam before the School Council.
4. The grading scale provided in the School Regulations is valid.

Verification Rules for Learning Outcomes for Qualifications at PRK Level 8

The learning outcomes required to achieve PRK Level 8 are verified through:

1. Exams assessing knowledge in individual subjects covered by the Doctoral School Curriculum.
2. Completion of seminars included in the Doctoral School Curriculum.
3. Analysis of students' achievements obtained through the implementation of the Individual Research Plan, as described in the Annual Reports.
4. Verification of foreign language proficiency.

For individuals seeking to obtain a doctorate through an external pathway, verification is conducted through:

1. Exams assessing knowledge in subjects covered by Block 1 of the Doctoral School Curriculum.
2. Submission of information regarding participation in specialist seminars at any academic or research institution.
3. Submission of information confirming the completion of monographic lecture courses at any academic or research institution.
4. Analysis of candidates' achievements, particularly:
   a. Publications in internationally recognized scientific journals.
   b. Conference presentations.
5. Verification of foreign language proficiency.

Prof. dr hab. Krzysztof Bobrowski

Employed as a Professor of Chemistry at the Institute of Nuclear Chemistry and Technology (IChTJ) in Warsaw, Poland, he also serves as the Head of the Pulse Radiolysis Laboratory. He was Deputy Head of the Department of Radiation Chemistry and Technology (2002–2011), Chair of the Scientific Council at IChTJ (2003–2007), and a member of the Scientific Council at the Institute of Physical Chemistry of the Polish Academy of Sciences (2007–2010). He received his PhD degree in 1976, habilitation in 1991, and the title of Professor awarded by the President of the Republic of Poland in 1998.

His research interests include radiolytically and photochemically induced radical processes in biologically relevant compounds, sulfur and selenium radical chemistry in peptides and nucleobase analogs, long-range electron transfer processes in peptides and proteins involving aromatic and sulfur-containing amino acid residues essential to oxidative stress, and, more recently, the application of ionizing radiation for the removal of pollutants from water and wastewater.

Publications

He is the co-author of over 150 articles in peer-reviewed journals (Journal of the American Chemical Society, Chemosphere, Free Radicals in Biology and Medicine, Chemical Research in Toxicology, Organic & Biomolecular Chemistry, Free Radical Research, Journal of Proteomics, Chemistry – A European Journal, Journal of Physical Chemistry, Journal of Physical Chemistry A and B, Talanta, Chemical Engineering Journal, International Journal of Molecular Sciences, Molecules) and chapters in recently published monographs (*Advanced Oxidation Processes for Wastewater Treatment* (Elsevier), *Topics in Current Chemistry Collections* (Springer), *Encyclopedia of Radicals in Chemistry, Biology and Materials* (Wiley), and *Recent Trends in Radiation Chemistry* (World Scientific)).

Supervision

He has supervised **seven PhD dissertations**.

National and International Collaborations

For many years, he has been engaged in broad and long-term scientific collaborations with both national (Adam Mickiewicz University in Poznań, University of Gdańsk) and international academic and research institutions, including Radiation Laboratory at the University of Notre Dame (Notre Dame, USA), Istituto per la Sintesi Organica e la Fotoreattività, CNR (Bologna, Italy), Laboratoire de Chimie Physique, Université Paris-Saclay (Orsay, France), Universidad de Chile (Santiago, Chile), Université Paris V and VI (Paris, France), Risø National Laboratory (Denmark), and Hahn-Meitner Institute (Berlin-West, Germany).

Other Achievements

He has received awards from the Polish Radiation Research Society, the Polish Academy of Sciences (Secretary of the Division of Biological Sciences), as well as prizes from the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences and the Institute of Nuclear Chemistry and Technology. He has been invited to give lectures at numerous scientific institutions, including University of Santiago (Santiago, Chile), Heart Research Institute (Sydney, Australia),

Brookhaven National Laboratory (Upton, NY, USA), National Institute of Standards and Technology (Gaithersburg, MD, USA), University of Calgary (Calgary, Canada), ETH (Zurich, Switzerland), Gray Laboratory (Northwood, UK), University Paris XI (Orsay, France), KTH, Royal Institute of Technology (Stockholm, Sweden), and "La Sapienza" University (Rome, Italy), as well as at prestigious conferences in his field, such as International Conferences on Ionization Processes, Gordon Research Conferences on Radiation Chemistry, Miller Conferences on Radiation Chemistry, PULS Conferences, and EUCHEM Conferences on Organic Free Radicals.

Memberships

He was a nominated member of the "Chemical Sciences" Council in the Polish Committee for Scientific Research (KBN) (2003/2004) and in the Ministry of Science and Information Technology (2005, 2008). He has also served as a reviewer of research projects funded by the U.S. Department of Energy, CONICYT (Chile), Swiss National Science Foundation, Israel Science Foundation, and Health Research Council of New Zealand. More recently, he was a Visiting Professor at the Notre Dame Radiation Laboratory (University of Notre Dame, USA) in 2016 and 2017, and at the University of Chile in Santiago in 2017 and 2019. From 2013 to 2017, he served as Chair of the Miller Trust for Radiation Chemistry. Currently, he is also an expert member of the EMIR&A Scientific Committee (the French National Accelerator Network for Irradiation and Analysis of molecules and materials), and a member of the Editorial Board of *Redox Biochemistry and Chemistry* and the *International Journal of Molecular Sciences*. He is also a recipient of the Maria Skłodowska-Curie Medal (No. 42) awarded by the Polish Radiation Research Society in 2013, the Medal of Merit for Adam Mickiewicz University in 2016, and was awarded the Gold Cross of Merit by the President of the Republic of Poland in 2012.

Prof. dr hab. Jan Czesław Dobrowolski

Prof. Jan Czesław Dobrowolski is employed as a Professor of Chemistry at the Institute of Nuclear Chemistry and Technology (IChTJ) in Warsaw, Poland. He is the Head of the Laboratory of Spectroscopy and Molecular Modeling and a member of the Scientific Council of the Institute. He completed his Master's thesis in the Laboratory of Intermolecular Interactions at the Faculty of Chemistry, University of Warsaw, in 1983. He obtained his PhD in technical sciences in 1992, and habilitation (DSc) in physical chemistry in 2003. Simultaneously, between 1986 and 1990, he completed evening studies at the Faculty of Mathematics, University of Warsaw. In 2011, he was awarded the title of Professor by the President of the Republic of Poland.

Research Interests

Prof. Dobrowolski's research interests include various aspects of computational chemistry of small molecules, including:

- Determination and analysis of physicochemical parameters (such as interaction energy) of molecules and intermolecular complexes formed via hydrogen bonding, electron donor-acceptor interactions, and ligand–central ion interactions;
- Determination and analysis of differentiating parameters for various molecular forms such as conformers, tautomers, constitutional isomers, topological isomers, enantiomers, etc.;
- Topics in physical organic chemistry, including construction and analysis of aromaticity indices, chirality measures, descriptors of substituent effects, and heteroatom incorporation effects;
- IR, Raman, and chiro-optical spectroscopies (VCD, ROA, and ECD), including analysis of spectroscopic parameters to gain insights into intermolecular interactions, detection, and characterization of interactions in crystals, and applications of new spectroscopic techniques;
- Topics in mathematical chemistry, including selected aspects of graph theory and topological isomerism.

Publications

Prof. Dobrowolski is the author or co-author of over 200 scientific articles (with over 3,200 independent citations) published in peer-reviewed journals such as *International Journal of Quantum Chemistry, RSC Advances, Journal of Molecular Liquids, Journal of Chemical Information and Computer Sciences, Advanced Functional Materials, Journal of Chemical Information and Modeling, Journal of Physical Chemistry A, Journal of Physical Organic Chemistry, Journal of Organic Chemistry, Organic & Biomolecular Chemistry, ACS Omega, International Journal of Molecular Sciences, Chemical Society Reviews, Astrophysical Journal, Spectrochimica Acta A, Chemical Communications, Journal of Raman Spectroscopy, MATCH Communications in Mathematical and in Computer Chemistry, and Croatica Chemica Acta*.
He has also contributed 5 book chapters and several translations of pharmacopoeial monographs.

Supervision

He has supervised **six PhD dissertations**.

Collaborations

For many years, he has maintained broad and long-term scientific collaborations with the Department of Chemical Physics at the Faculty of Chemistry, Jagiellonian University, and with the Theoretical Chemistry Group (formerly Laboratory of Spectroscopy and Intermolecular Interactions) at the Faculty of Chemistry, University of Warsaw. He is also affiliated with the National Medicines Institute in Warsaw.

Grants

He has served as the Principal Investigator (PI) of two completed NCN OPUS grants and is currently leading two ongoing NCN OPUS projects.

Teaching

For the International Doctoral Studies conducted by IChTJ, he delivered a series of 15 lectures titled *"Fundamentals of Molecular Spectroscopy – Optical Spectroscopy"* twice (in 2008/2009 and 2014), as well as a series of 8 lectures titled *"Lecture Notes on Molecular Diversity: Isomerism, Substituent Effect, Aromaticity"* for doctoral students of the Doctoral School of IChTJ and NCBJ in 2022/2023.
Between 2004 and 2018, he was also a co-organizer and Scientific Council member of the one-day ChemSessions Seminars for Doctoral Students of the Warsaw District, organized by the Warsaw Branch of the Polish Chemical Society (PTChem).

Dr hab. Hanna Lewandowska-Siwkiewicz, Prof. at IChTJ

Dr. Lewandowska-Siwkiewicz is affiliated with the Institute of Nuclear Chemistry and Technology (IChTJ) and the Academy of Economics and Humanities. She conducts scientific research in the fields of radiobiology, radiation chemistry of polymers, and bioorganic chemistry.

Her research interests focus on interactions involving nitric oxide, biochemical signaling pathways, and polymer systems. She also investigates polymeric materials for biomedical and industrial applications, analyzing their interactions with biologically active molecules and their role in controlled signal transmission and material design.

Her research further includes studies on the influence of electron charge distribution on the properties of biologically active compounds, the role of natural polyphenols in cellular signaling and cancer protection, as well as the development of methods for detecting irradiated food products.

As part of her teaching activities, Dr. Lewandowska-Siwkiewicz delivers lectures on polymer chemistry at the NCBJ-IChTJ Doctoral School, focusing on the application of radiation technologies in the synthesis and study of polymers. Additionally, she offers lecture courses at the Academy of Economics and Humanities, covering fundamentals of chemistry and pharmaceutical chemistry.

Publications:

Number: 34
H-index: 15
Citations: 1218
Examples of journals:

- *Journal of Inorganic Biochemistry*
- *JBIC Journal of Biological Inorganic Chemistry*
- *Dalton Transactions*
- *The Journal of Nutritional Biochemistry*
- *European Journal of Medicinal Chemistry*

Grants:

Leader of a project or task in over 10 projects, including international and national ones, among others:

- CRP IAEA 24388
- NCN 2012/07/D/ST4/02177
- Orlen Asfalt - INCT OA/GD/24/2020
- TeamCables Euratom 755183
- NCBiR Cavitel Bio POIR.01.01.01-IP.01-00-005/20
- CEI 305.3938-2
- IAEA F23036
- RPMA.01.02.00-14-5770/16

Teaching experience:

Academic lecturer:

- Academy of Economics and Humanities in Warsaw (UEHS) (since 2023)
- International Graduate School of Physics and Chemistry (IChTJ/NCNR) (since 2021)
- TeaM Cables Winter & Summer Schools (2021, 2022)
- State University of Computer Science and Business Administration in Łomża (2007/2008)

Supervision of PhD students:

- Supervisor of the doctoral dissertation of Małgorzata Dąbrowska-Gralak (defended in 2023)
- Supervisor of an industrial PhD (Orlen Asfalt - IChPW)
- Supervisor of MSc students at the Faculty of Medical and Health Sciences, AEH

International collaborations:

Scientific internships:

- Università Degli Studi di Milano, Italy
- University of Warwick, UK (Marie Curie Fellowship)
- Institute de Chimie des Substances Naturelles, France
- MD Anderson Cancer Center, USA

Other achievements:

- Evaluator of grant applications for H2020-MSCA PF and IF at the European Commission (2018-2023)
- Presentations at international conferences (e.g., CRP IAEA in Vienna, Nutech)
- Membership in the Polish Radiation Research Society (PTBR)

Dr. Sylwester Sommer

Specialist in radiobiology, biological dosimetry and radiation protection. Educator in the field of nuclear energy. Gives a lecture on radiobiology at Warsaw University Medical Physics Department. Author and coauthor of about 40 scientific publications (Radiation Research, International Journal of Radiation Biology, Radiation Protection Dosimetry, Biuletyn PAA).

He received Master's degree at Faculty of Biology, University of Warsaw and PhD in Radiobiology, in Military Institute of Hygiene and Epidemiology, Warsaw, Poland. PHD thesis title: "The radiation sensitivity of human chromosomes 2, 8 and 14 in peripheral blood lymphocytes of seven donors". Since 2013 head of accredited Laboratory for Biological Dosimetry of Institute of Nuclear Chemistry and Technology in Warsaw, Poland.

Main scientific interest are biological dosimetry, dicentric chromosome assay, micronuclei assay, the role of biodosimetry in radiation protection, radiation protection from the biological point of view, radiation protection and nuclear safety in Poland, environmental genotoxicity. He is a specialist in quality management and quality assurance in cell biology laboratory.

Dr Sommer cooperates as an associated member in European dosimetry network RENEB. He is also a member of ISO/TC 85/SC 2/WG 18 Biological dosimetry group which prepare and review the ISO standards regarding biological dosimetry. Dr Sommer took part in 2 European project in the field of biodosimetry: MULTIBIODOSE (Multi-disciplinary biodosimetric tools to manage high scale radiological casualties) and RENEB (Running the European Network of Biological and Retrospective Physical Dosimetry).

Dr. Sommer supervised one master's thesis and several bachelor's theses at the Faculty of Physics (Medical Physics) at the University of Warsaw, where he has also taught the subject "Radiobiology" for over 10 years.

Prof. dr hab. Andrzej G. Chmielewski

Professor Andrzej G. Chmielewski is a distinguished chemist specializing in chemistry, nuclear energy, and the industrial and environmental applications of nuclear methods. Since 1982, he has served as the Director of the Institute of Nuclear Chemistry and Technology (IChTJ). He was also affiliated with the Warsaw University of Technology from 1967 to 1983 and again from 2002 to 2013, where he taught courses in chemistry and chemical engineering.

Professor Chmielewski's scientific achievements include over **150 publications** and authorship or co-authorship of **64 patents**, many of which have been successfully implemented in industry.

He has delivered lecture series for students of the Warsaw University of Technology as well as for doctoral candidates at IChTJ. Within the framework of the International Doctoral Studies at IChTJ and the NCBJ-IChTJ Doctoral School, he has given lectures on the chemical aspects of nuclear energy and the use of nuclear techniques in industry and environmental protection.

Professor Chmielewski has **supervised 16 PhD dissertations and over 100 master's theses.**

As a Technical Officer at the International Atomic Energy Agency (IAEA) in Vienna, he delivered lectures and served as **an expert and lecturer in many countries worldwide**. From 2005 to 2013, he was also a lecturer at the IUSS University of Advanced Studies in Pavia (Italy) within the Master's Degree in Nuclear and Ionizing Radiation Technologies (NIRT) program, as well as a lecturer in postgraduate studies at the University of São Paulo (Brazil).

He has been awarded the title of Visiting Professor at Hefei University (China) and Honorary Professor at Pavlodar University (Kazakhstan).

Prof. dr hab. Andrzej Stanisław Kupść

Current positions:

- from 2009 – researcher, Dept. of Physics and Astronomy, Uppsala University, Sweden
- from 2019 – adjunct, National Centre for Nuclear Research (NCBJ), Poland

Academic degrees and titles:

- 2021 Professor, nomination by the President of the Republic of Poland
- 2011 DSc (Habilitation), Institute for Nuclear Studies (INS), Poland
- 2009 Docent, Uppsala University (UU), Sweden
- 1994 PhD, Institute for Nuclear Studies, Poland
- 1989 MSc, Warsaw University, Poland

Previous positions:

- 1998 – 2009 Senior research engineer, The Svedberg Laboratory / UU
- 1995 – 1997 Postdoc UU
- 1995 – 2018 Assistant prof. INS/NCBJ (leave of absence from 1998)
- 1990 – 1994 PhD studies at INS

PhD supervisor (main):

Li Caldeira-Balkeståhl, UU (→2016); Lena Heijkenskjöld, UU (→2016); Damian Pszczel, NCBJ-UU (→ 2018); Viktor Thorén, UU (→2022); Nora Salone, NCBJ (2020→) [+ secondary supervisor for five other PhD projects]

Membership in collaborations:

- **LHCb/**CERN (2021-)
- **PrecisionSM:** (2019-2024) WP co-spokesperson
- *Precision tests of the Standard Model* [STRONG2020 EU project]
- **BESIII/**IHEP Beijing (2013-) Strange Baryon and Charm WG Coordinator, PhD Award committee
- **KLOE-2**/Frascati (2015-) Deputy physics coordinator, (2008-2015) Policy Board member
- **MesonNet:** (2012-2014) Work Package (WP) Spokesperson
- *Research Network on light meson production and decays* [HADRON3 EU project]
- **WASA-at-COSY**/Juelich (2005-2009) IT coordinator, (2009-2015) Physics Coordinator

Selected merits:

- **Member of NuPECC WG:** “Hadron Physics”, Long Range Plan for Nuclear Physics in Europe (2017)
- **Conference Advisory Committee Member:** “From Phi to Psi”: Novosibirsk (2011), Rome (2013), Novosibirsk (2019), Pisa (2022)
- **Editorial board member:** Chinese Journal of Physics C. (from 2020)
- **Co-organizer**: MesonNet workshops (2012,2013,2014); Probing baryon weak decays: from experiment to lattice QCD, Warsaw, (2023,2024); Workshop on Discrete Symmetries in Particle, Nuclear and Atomic Physics, Trento, Italy (2018).
- **Reviewer for international journals:** Nature, Phys. Rev. Lett., Phys. Lett. B, Phys. Rev. D, Chin. J. Phys. C, and Sci. Bul.
- **Long term research visits:** FZ Juelich (Germany), INFN Frascati (Italy), CERN, IHEP Beijing (China).
- **Invited seminars**: HAPSO China (online), Warsaw U. (2022), KEK, Japan; PKU, Beijing; Warsaw U., (2019); IHEP, Beijing (2018); Indiana U., Bloomington (2017)
- **Latest talks on conferences and workshops:** 2023 ECT* workshop, Trento; Symmetry2022, Vienna; CHARM2021, (Mexico/zoom); INPC2019, Glasgow; ICHEP18, Seoul; EPS-HEP2017, Venice

Teaching

Uppsala U.: Mechanics (2009-2018), Electromagnetism (2019-),Thermo-Fluid Science(2009-), Sustainable Energy Conversion (2021-), Supervision of ca 20 BSc/MSc projects at UU, Lectures at PhD schools (JGU Mainz, U. Indiana,KMI Nagoya, NCBJ)

Publications

- According to the data extracted from INSPIRE-HEP (http://inspirehep.net/) on 2025-03-06 (http://inspirehep.net/search?p=f+a+kupsc): published papers: 874, citations: 29 842, h-index: 82.
- Papers by collaboration: 120 LHCb (2660#cite), 583 BESIII (15 644#cite)
- Phys. Rev. Lett. -- 142 publications, Nature Phys. – 2, Nature – 1, Phys. Rept. – 2
- Orcid: 0000-0003-4937-2270
- Scopus: 909 published papers; 19 432 citations; h-index: 66.

Recent research grants:

- **2022—2025** Principal Investigator
  Title: *Measurement of charmed baryon-antibaryon asymmetry at LHCb*
  The Swedish Research Council

- **2025—2028** Principal Investigator
  Title: *Tests of fundamental symmetries using polarized baryons*
  National Science Centre, Poland

- **2021—2024** Principal Investigator

Title: *A roadmap for a CP violation signal in hyperon decays*
National Science Centre, Poland

- **2019 – 2024** co-Principal Investigator
  Title: *Precision SM: Precision hadron physics for tests of the Standard Model*
  European Commission

Dr hab. Enrico Maria Sessolo, prof. NCBJ

Education

- 2019 National Centre for Nuclear Research, Warsaw, Poland – Habilitation
- 2010 University of Kansas, Lawrence, KS, USA – PhD in Physics
- 2007 University of Kansas, Lawrence, KS, USA – MSc (particle physics)
- 2003 University of Padua, Padua, Italy – Laurea (MSc) (astrophysics)

Academic Positions

- 2021 – Present: National Centre for Nuclear Research, Warsaw – Associate Professor
- 2016-2020: National Centre for Nuclear Research, Warsaw – Assistant Professor
- 2017: Technical University of Dortmund – Humboldt Fellow
- 2011-2015: National Centre for Nuclear Research, Warsaw – Postdoc
- 2010-2011: Fort Hays State University, Hays, KS, USA – Instructor

Grants

- 2021-2026 Principal Investigator, National Science Centre (Poland) "SONATA BIS" Grant
2020/38/E/ST2/00126, "Searching high and low: a multi-scale approach to the physics beyond the Standard Model,"
- 2018-2022 Principal Investigator, National Science Centre (Poland) "SONATA" Grant
2017/26/D/ST2/00490 "Patterns of New Physics from flavor and dark matter experiments"
- 2017 Humboldt Fellowship for Experienced Researchers, TU Dortmund, Germany

Selected Publications

K. Kowalska, E.M. Sessolo, "Entanglement in flavored scalar scattering," JHEP 07 (2024) 156
K. Kowalska, E.M. Sessolo, "Naturally small Yukawa couplings from trans-Planckian asymptotic safety," JHEP 08 (2022) 262
L. Darmé, M. Fedele, K. Kowalska, E.M. Sessolo, "Flavour anomalies from feebly interacting
particles," JHEP 03 (2022) 085
K. Kowalska, E.M. Sessolo, Y. Yamamoto, "Flavor anomalies from asymptotically safe
gravity," Eur.Phys.J.C (2021) 4,272
L. Roszkowski, E.M. Sessolo, S. Trojanowski, "WIMP dark matter candidates and searches –
current status and future prospects," Rept.Prog.Phys 81 (2018) 6, 066201
Full list:
https://inspirehep.net/literature?sort=mostrecent&size=25&page=1&q=a%20sessolo

Selected Invited Talks at International Conferences

"Entanglement in Flavored Scalar Scattering" – Asymptotic Safety Meets Particle Physics (and
Friends), DESY, Hamburg, 19.12.2024

"Naturally small Yukawa couplings in asymptotic safety" – CATCH22+2, Dublin Institute for
Advanced Studies, 05.05.2024
"BSM model for g-2 above and below the electroweak scale" – SchwingerFest22, UCLA, Los
Angeles, 16.06.2022
"Dark Matter, what it is and how to determine its properties" – COSMO16, University of
Michigan, 08.08.2016

Teaching Experience

• Fall 2021, Fall 2023:
Classical Electrodynamics (NCBJ, Warsaw)
• Spring 2011:
Introductory Quantum Mechanics (PHYS 677, Fort Hays State University)
College Physics 2 (PHYS 112, Fort Hays State University)
College Physics 2 Lab Session (PHYS 112L, Fort Hays State University)
• Fall 2010:
College Physics 1 (PHYS 111, Fort Hays State University)
College Physics 1 Lab Session (PHYS 111L, Fort Hays State University)
Physical Science (PHYS 102, Fort Hays State University)
Physical Science Lab Session (PHYS 102L, Fort Hays State University)
• Summer 2010:
College Physics 2 (PHSX 115, University of Kansas)

Dr hab. Katarzyna Małek, prof. NCBJ

Education and Academic Degrees:

- 2020 – Habilitation (dr hab.) in Astronomy, Jagiellonian University, Kraków, Poland
- 2011 – PhD in Physical Sciences, Cardinal Stefan Wyszyński University, Warsaw, Poland
- 2006 – MSc in Physical Sciences, Cardinal Stefan Wyszyński University, Warsaw, Poland
- 2004 – BSc in Physical Sciences, University of Warsaw, Faculty of Physics, Poland

Current Positions:

- Since 2023 – Head of the Astrophysics Division, National Centre for Nuclear Research (NCBJ)
- Since 2021 – Associate Professor, NCBJ
- Since 2018 – Research collaborator, Laboratoire d'Astrophysique de Marseille (LAM), France

Previous Positions:

- 2014–2021 – Assistant Professor, NCBJ
- 2017–2018 – Postdoctoral Fellow, LAM (UMR7326 - CNRS-INSU, Aix-Marseille University), France
- 2011–2013 – JSPS Postdoctoral Fellow, Department of Particle and Astrophysical Science, Nagoya University, Japan
- 2006–2011 – Research Assistant, Center for Theoretical Physics PAS, Warsaw, Poland

Grants and Awards:

- 2022 – NAWA PHC Polonium grant
- 2021 – Award of the Director of the Department of Basic Research at NCBJ for science outreach in astronomy
- 2018 – NCN SONATA BIS grant "ASTROdust"
- 2014 – NCN SONATA grant
- 2011 – JSPS Postdoctoral Fellowship, Japan
- 2007 – Visegrad Group Young Scientist Award in Physics

Supervision of Students:

- 2019–2023 – PhD supervisor for Gabriela Riccio and Mahmoud Hamed (defended in 2023)
- 2021 – Assistant supervisor, MSc thesis of Krzysztof Lisiecki, Nicolaus Copernicus University in Toruń

- 2016 – Assistant supervisor, PhD thesis of Tomasz Krakowski, NCBJ
- 2013–2017 – Assistant supervisor, PhD thesis of Małgorzata Siudek, CFT PAS
- 2008–2009 – Supervisor of BSc theses (Krzysztof Goc, Marta Mech), UKSW
- 2022–2024 – Member of PhD evaluation committees (GeoPlanet and Graduate School of Physics and Chemistry)

Membership in Scientific Societies:

- 2024 – Member of the Astronomy Committee, Polish Academy of Sciences (PAN)
- Since 2021 – Member of the International Astronomical Union (Division H, J)
- Since 2020 – Member of the Inclusion Working Group, European Astronomical Society
- Since 2020 – Member of the Polish Astronomical Society and the European Astronomical Society

Research Stays in Poland and Abroad:

Numerous research stays between 2011–2023 (Japan, France, Italy, Chile)

Publications:

Since submitting her habilitation application in 2019, she has published 58 scientific articles in leading journals such as Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, and Physical Review Letters, with two more already accepted for publication. In many papers, she is listed as second or third author, reflecting her key scientific contribution, especially as an expert in determining and validating the physical properties of galaxies.

Selected Major Lectures and Presentations:

- Aspen, USA, 2024: Can we trace the dust in low-surface brightness galaxies? (invited)
- LSST Europe (Croatia 2023, Rome 2022)
- Cosmology School, Kraków 2022 (invited)
- Marseille, 2022: VIPERS: Hidden diversity of intermediate redshift galaxies
- PTA conferences and other national and international conferences

Organizational Activities:

- Since 2023 – Head of Astrophysics Division, NCBJ
- 2023 – Rubin-LSST Poland (SOC), XLI PTA Meeting, Toruń (SOC), LOFAR Family Meeting, Olsztyn (LOC)
- 2022 – Introduction to Cosmology, Kraków (SOC)

Science Outreach:

Since 2015 – Editor of "Delta", a popular science monthly magazine published by the University of Warsaw

Dr hab Michał Bluj, prof. NCBJ

Dr Michał Bluj is an experimental high-energy physicist working in the CMS experiment at the Large Hadron Collider (LHC) at CERN, Geneva. His scientific interests focus on studying the properties of the Higgs boson, discovered in 2012. In particular, he is engaged in measurements of the CP structure of the Higgs boson and its coupling to tau leptons.

He began his scientific career at the University of Warsaw, where he earned his MSc degree (2000) with a thesis on searches for Higgs bosons in data from the DELPHI experiment at CERN. He then pursued his PhD at the Andrzej Sołtan Institute for Nuclear Studies (now NCBJ), which he completed in 2006 with a dissertation on the CP structure of the Higgs boson in decays to four leptons.

Between 2007 and 2013, he worked in Portugal (LIP, Lisbon) and France (LLR, École Polytechnique), contributing to the commissioning of the CMS experiment and its early data analyses, including the development of tau lepton reconstruction techniques and searches for Higgs boson decays into tau pairs.

Since 2013, he has been affiliated with NCBJ, where he obtained his habilitation (2020) and became the leader of the CMS group in 2021. He represents NCBJ in the CMS Poland consortium and coordinates the national project “CMS Experiment at CERN (2022–2026)”. He has twice served (2015–2017 and 2023–2025) as coordinator of the CMS Tau Physics Object Group, responsible for the development and calibration of tau lepton reconstruction algorithms.

Grants:

- 2015–2018 – NCN OPUS grant (2014/12/B/ST2/02543) titled “Tau lepton decays as a tool for studying the properties of the Higgs boson with the CMS experiment at the LHC”.
- 2022–2026 – Coordinator of the project “CMS Experiment at CERN” (No. 2022/WK/14).

Awards:

- 2019 – NCBJ Award for contributions to tau lepton reconstruction algorithms and the observation of the Higgs boson coupling to fermions.
- 2023 – Award of the Director of the Department of Basic Research at NCBJ for the first measurement of the CP structure of the Higgs boson Yukawa coupling to the tau lepton.

Publications:

Author or co-author of approximately 1,000 scientific publications, mainly related to the DELPHI and CMS experiments at CERN.

Dr hab. Paweł Sznajder

Graduated from the Warsaw University of Technology and earned his Ph.D. at the National Centre for Nuclear Research (NCBJ), where he conducted research within the COMPASS experiment at CERN. After completing a postdoctoral position at the Institute of Nuclear Physics (IPN) in Orsay, he returned to NCBJ, where he currently works in the Theoretical Physics Division.

His main scientific interests focus on exploring the three-dimensional structure of hadrons within the framework of perturbative Quantum Chromodynamics (QCD). In particular, he specializes in describing exclusive processes, interpreting existing experimental data, and preparing for future measurements.

With experience gained from both international research projects and national scientific institutions, Dr. Sznajder brings valuable expertise in hadron physics and experimental data analysis methods.

Publications

68 published articles in international scientific journals.
Citations / h-index (based on Inspire): 5142 / 37.

Grants and Projects (as Principal Investigator)

• 08.2021 - 07.2024: Ministerial grant for outstanding young scientists.
• 06.2020 - 06.2023: SONATA 15, National Science Centre (Poland), No. 2019/35/D/ST2/00272.
• 02.2020: French Government Scholarship.
• 04.2018 - 03.2019: CRADA agreement between NCBJ (Poland) and JLab (USA), No. CRADA/2017S002.

Student Supervision and Teaching

Postdoc:

• 2021 - 2023: Kemal Tezgin (BNL), within the LDRD project.

Ph.D. Students:

• 2020 - 2024: Víctor Martínez Fernández (NCBJ), co-supervisor, graduated with distinction.

Master Students:

• 2022, 2023: Bartosz Skura (WUT), summer internship.
• 2019 - 2021: Oskar Grocholski (UW), laboratory work.

Teaching:

• Summer semester 2025: 'Practical use of statistical and numerical methods', 45 hours, NCBJ.

• Summer semester 2023: 'Practical use of statistical and numerical methods', 45 hours, NCBJ.
• Summer semester 2022: 'Practical use of statistical and numerical methods', 45 hours, NCBJ.

Reviewer

• Department of Energy.
• European Physical Journal A (EPJA).
• JLab Program Advisory Committee (PAC).

Justification for the Composition of the Recruitment Committee in the Context of Guaranteeing and Ensuring a High Standard of Recruitment

In the opinion of the Doctoral School Council, the Recruitment Committee has a fundamental impact on all aspects of the School's functioning. Therefore, and given that the School's directors and discipline coordinators possess both the necessary knowledge and relevant experience, the School Director, in consultation with the School Council, decided not to delegate the responsibilities related to recruitment.

As a result of these arrangements, the Recruitment Committee was established on August 12, 2019, with the following members:

1. Prof. Michał Spaliński, PhD, DSc (NCBJ) – Chair of the Recruitment Committee
2. Prof. Aleksander Bilewicz, PhD, DSc (IChTJ)
3. Assoc. Prof. Ewa Gniazdowska, PhD, DSc (IChTJ)
4. Assoc. Prof. Jakub Wagner, PhD, DSc (NCBJ)

RECRUITMENT RULES FOR THE DOCTORAL SCHOOL

Institutions Conducting the Doctoral School:
National Centre for Nuclear Research (NCBJ)
Institute of Nuclear Chemistry and Technology (IChTJ)

Institutions' Entitlements to Confer the Doctoral Degree:
Doctor of Physical Sciences in the discipline of Physics (NCBJ)
Doctor of Chemical Sciences in the discipline of Chemistry (IChTJ)

Duration of Education in the Doctoral School:
8 semesters.

RECRUITMENT PROCESS

One month before the recruitment announcement, the Doctoral School Council publishes on the recruitment website a list of potential supervisors, proposed dissertation topics, and a list of subjects for the basic subject exam.

The first stage of recruitment involves the submission of documents by candidates via the Doctoral School recruitment website. Documents may be submitted in English.

1. Candidates register on the Doctoral School recruitment website, providing their full name and contact details (email and phone number).
2. The candidate receives a recruitment number via email (e.g., SD/001, where SD stands for Doctoral School, and the number corresponds to the order of applications).
3. The candidate uploads the following documents to the recruitment website:

- Curriculum vitae
- Master's degree diploma or a certificate confirming graduation (if the diploma is not yet available). Foreign candidates must provide equivalent documents that grant the right to apply for a doctoral degree in the country where the issuing institution operates.
- A motivation letter including a brief description of interests, scientific achievements, involvement in research activities, justification for pursuing education at the Doctoral School, and a selection of one or two dissertation topics from those listed on the recruitment website.
- Diploma supplement (list of grades obtained in first- and second-cycle studies or during an integrated master's program).
- Name, affiliation, and email address of the supervisor of the bachelor's/engineering/master's thesis.
- Consent for personal data processing (template available on the recruitment website).

Additionally, candidates may submit:

- A list of scientific publications and patent applications.

- Information about participation in international academic exchange programs, projects, research internships, industrial placements, or active participation in scientific conferences.
- Certificates or other documents proving foreign language proficiency.

The Recruitment Committee reviews the submitted documents for formal correctness. Failure to meet formal requirements results in a request to correct deficiencies within seven days of notification. Failure to comply leads to exclusion from further recruitment proceedings.

A list of recruitment numbers of candidates who qualify for the second stage is published on the recruitment website, and candidates are notified via email.

The second stage is a competitive selection process conducted by the Recruitment Committee with the participation of potential supervisors. The process may be conducted in English.

1. The Recruitment Committee evaluates the submitted documents and assigns a score between 0 and 5 points.
2. The candidate presents their previous academic achievements (master's thesis or other work) in a 10-minute presentation, optionally using pre-prepared slides (0-5 points).
3. The basic subject exam (Chemistry or Physics) consists of three randomly selected questions from a predefined list available on the recruitment website, covering different thematic groups. The Committee may ask additional questions. Candidates must respond without using supplementary materials (0-15 points). **A minimum of 8 points is required to pass.**
4. The candidate answers questions related to their future dissertation topic (supplementary materials may be used) (0-5 points).

Scores are provided to candidates after the competition concludes.

A final list of admitted candidates in each discipline is prepared. This list (with recruitment numbers) is published on the Doctoral School recruitment website, and candidates are informed of the results via email.

To be admitted, a candidate must score at least 8 points on the basic subject exam.

A candidate may appeal the Recruitment Committee's decision to the Director of the Doctoral School within 14 days of the decision announcement. Appeals may only be based on violations of the recruitment conditions or procedures. The Director's decision is final.

DOCTORAL SCHOOL RECRUITMENT RULES

Entities Leading the Doctoral School:

- National Centre for Nuclear Research (NCBJ)
- Institute of Nuclear Chemistry and Technology (IChTJ)

Entities' Rights to Confer the Doctoral Degree:

- Doctor of Physics in the discipline of physics (NCBJ)
- Doctor of Chemistry in the discipline of chemistry (IChTJ)

The Doctoral School Council announces on the recruitment page of the School, at least 1 month before the end of the application submission period, a list of research project topics along with descriptions and the names of supervisors. Candidates applying for admission to the Doctoral School select 1 or 2 topics as research projects they wish to engage in with the intention of writing their doctoral thesis.

The first stage of recruitment involves candidates applying and submitting documents through the Doctoral School's recruitment portal. Submitting documents in English is allowed. Documents in other languages may be accepted with the consent of the School's director.

1. Candidates submit the following documents via the recruitment portal:
   a. Curriculum Vitae.
   b. Master's degree diploma, certificate of completion, or a statement of the expected diploma issuance date. The diploma (or an official document confirming the conferral of the degree) is not required at the time of application, but is required before the commencement of studies. In the case of foreign candidates, equivalent documents are required, granting the right to apply for a doctoral degree in the country where the issuing institution operates within its higher education system.
   c. Motivation letter, containing a description of the candidate's research interests, scientific achievements, and involvement in scientific activities. This letter should highlight the candidate's preparation for engaging in research on the chosen research projects offered by the Doctoral School.
   d. Diploma supplement (list of grades obtained during the first and second degree studies or a list of grades obtained during integrated master's studies).
2. Candidates provide the name, surname, affiliation, and email of the supervisor of their bachelor's/engineering/master's thesis.
3. Candidates must consent to the processing of personal data.
4. Additionally, candidates may include:
   a. a list of scientific publications and patent applications.
   b. information about participation in international scientific exchange programs, involvement in projects, research internships, and industrial practices, and active participation in scientific conferences.
   c. certificates or other documents proving foreign language proficiency.

The second stage of recruitment involves an analysis of the submitted documents by the Recruitment Committee and the supervisors of the proposed topics. No later than a week after the deadline for submitting applications, the supervisor of each project presents a ranked list of candidates to the Recruitment Committee, based on the submitted documents and their suitability for the project. In consultation with the Recruitment Committee, supervisors contact the candidates who best meet the requirements of the research project and invite them for an interview. Up to three candidates can be invited for each topic.

The third stage of recruitment consists of interviews, which are conducted in English. In justified cases, they may be held using electronic communication tools that provide both audio and video transmission.

The interview begins with an exam in a basic subject covered by the Doctoral School's education (chemistry or physics). The candidate presents 3 topics selected randomly from a list of questions published on the Doctoral School's recruitment page, one from each thematic group. Members of the Recruitment Committee ask additional questions during and after the response. The candidate answers without using any reference materials. The committee evaluates the answers on a scale from 0 to 15 points. A minimum of 8 points is required for a positive evaluation.

If the exam described above ends with a positive evaluation, the second part of the interview involves the candidate presenting their achievements (master's thesis or others) in a 10-minute presentation. The candidate may use previously prepared materials, such as a presentation. The committee evaluates the presentation on a scale from 0 to 5 points.

In the third and final part of the interview, the candidate answers questions related to the topic of their future doctoral thesis, with the option to use reference materials. The committee evaluates the answers on a scale from 0 to 5 points.

Based on the above scoring, the Recruitment Committee selects candidates qualified for the respective projects.

If, as a result of this procedure, there are projects that have not been assigned to any candidate, and candidates who have not been accepted for any of the topics they indicated, the Recruitment Committee may offer such candidates the opportunity to work on a doctoral thesis in one of the remaining projects, provided that the supervisor of such a project agrees to this solution.

Candidates are informed of the results of the interview no later than a week after it has been conducted.

Candidates for the Doctoral School have the right to appeal the decision of the Recruitment Committee to the Director of the Doctoral School within fourteen days from the announcement of the decision. The basis for the appeal may only be the indication of a breach of the recruitment conditions or procedure. The Director's decision is final.

DOCTORAL SCHOOL REGULATIONS
(hereinafter referred to as the "**Regulations**")

Adopted by the Scientific Councils of the National Centre for Nuclear Research and the Institute of Chemistry and Nuclear Technology based on Article 205(2) of the Act of July 20, 2018, on Higher Education and Science.

General Characteristics and Profile

§1

1. The Regulations define the organization of education at the Doctoral School (hereinafter referred to as the **Doctoral School**) jointly run by the research institutes: the National Centre for Nuclear Research and the Institute of Chemistry and Nuclear Technology (hereinafter referred to as the **Entities Running the Doctoral School**).
2. The main headquarters of the Doctoral School and its Secretariat are located at the National Centre for Nuclear Research, Pasteur Street 7, Warsaw.
3. The Doctoral School educates doctoral students in the field of exact and natural sciences, in the disciplines of physical sciences and chemical sciences.
4. Education at the Doctoral School is carried out based on the curriculum and an individual research plan. The curriculum is established by the Scientific Councils of the Entities Running the Doctoral School. The individual research plan is developed by the doctoral student in consultation with the supervisor.
5. The implementation of the educational program requires knowledge of the English language.

Organizational Structure of the Doctoral School

§2

1. The organizational structure of the Doctoral School includes:
   a) The Director of the Doctoral School,
   b) The Deputy Director,
   c) Discipline Coordinators,
   d) The Council of the Doctoral School,
   e) The Recruitment Committee,
   f) Evaluation Committees.
2. The Doctoral School is managed by the Director of the Doctoral School with the assistance of the Deputy Director. The Director and Deputy Director are appointed jointly by the Entities Running the Doctoral School.
3. The Director of the Doctoral School:
   a) Announces the academic calendar and organizes the implementation of the curriculum,
   b) Evaluates the implementation of the educational program, including the research conducted by doctoral students,
   c) Appoints the Recruitment Committee and serves as its chairperson,
   d) Appoints Evaluation Committees for mid-term assessments of doctoral students' individual research plans.
4. The Director of the School, in consultation with the Directors of the Entities Running the Doctoral School, appoints the Discipline Coordinators.

5. Discipline Coordinators:
   a) Supervise and are responsible for the implementation of the curriculum in their discipline,
   b) Participate in the mid-term assessment of the implementation of individual research plans by doctoral students.
6. The Director of the School, Deputy Director, and Discipline Coordinators form the Council of the Doctoral School.
7. The Council of the Doctoral School:
   a) Prepares the list of topics and list of supervisors and submits them to the Directors of the Entities Running the Doctoral School for approval before announcing the recruitment for the academic year,
   b) Approves the doctoral students' progression through the doctoral program,
   c) Decides on the extension of the deadline for submitting the doctoral dissertation,
   d) Decides on the removal of a doctoral student from the list of doctoral students.

Recruitment to the Doctoral School

§3

1. Recruitment to the Doctoral School is conducted through a competition organized by the Recruitment Committee.
2. The Directors of the Entities Running the Doctoral School determine the number of doctoral students admitted to the Doctoral School for a given year.
3. The recruitment rules are outlined in the Recruitment Rules for the Doctoral School, established by the Scientific Councils of the Entities Running the Doctoral School and posted on the Doctoral School’s website.

§4

1. A person may be admitted to the Doctoral School if they:
   a) Hold a master's degree, master's in engineering, or an equivalent title,
   b) Have obtained a passing grade in an exam from a fundamental subject in which the candidate will be educated at the Doctoral School,
   c) Have been qualified by the Recruitment Committee.
2. A person admitted to the Doctoral School:
   a) Begins education and gains doctoral student rights upon taking the oath,
   b) Receives a student ID and academic transcript.

Education in the Doctoral School

§5

1. The education period at the Doctoral School begins upon taking the oath and ends with the submission of the doctoral dissertation.
2. Education in the Doctoral School lasts 4 years (8 semesters).
   The Director of the Doctoral School may, upon the doctoral student's request, suspend their education for a period corresponding to maternity leave, leave on the terms of maternity leave, paternity leave, and parental leave as specified in the Labor Code of June 26, 1974. The request must include documentation confirming the circumstances justifying the suspension of education.

§6

1. Within 12 months from the start of their education, the doctoral student, in consultation with their supervisor(s), prepares an individual research plan, including a schedule for the preparation of the doctoral dissertation, and submits it to the relevant Discipline Coordinator as a representative of the Entity Running the Doctoral School.
2. The implementation of the individual research plan is subject to mid-term evaluation halfway through the period of education outlined in the curriculum (described in §13).
3. The individual research plan may be updated annually when submitting the annual reports (described in §11).
4. The individual research plan specifies the deadline for submitting the doctoral dissertation. At the doctoral student's request and with the supervisor's consent, this deadline may be extended by the School Council, but not longer than by 2 years.

§7

1. Within 3 months of starting their education, the School Council assigns a supervisor(s) to the doctoral student (and, if necessary, an assistant supervisor).
2. The supervisor must hold a postdoctoral degree or a professorial title, and the assistant supervisor must hold a doctoral degree.
3. In justified cases, the School Council, after hearing the doctoral student, may decide to change the supervisor at the request of the doctoral student, the supervisor, or on its own initiative.
4. The supervisor(s) and the assistant supervisor (if assigned):
   a) Agree with the doctoral student on the individual research plan prepared by the student,
   b) Provide assistance to the doctoral student in their research work,
   c) Supervise the fulfilment of the doctoral student's obligations as defined in the curriculum,
   d) After each year of education, submit a written opinion to the School Council on the doctoral student's progress.

§8

The doctoral student has the right to vacation breaks of no more than eight weeks per year, scheduled in accordance with the academic calendar, agreed upon with the supervisor, and reported to the Director of the School.

Obligations of the Doctoral Student

§9

The basic obligations of the doctoral student include:
a) Implementation of the curriculum and individual research plan,
b) Systematic research work under the supervisor’s guidance aimed at preparing the doctoral dissertation,
c) Participation in lectures and seminars resulting from the individual research plan,
d) Passing exams and obtaining credits,

e) Submitting appropriate documentation and gaining credit for each academic year,
f) Obtaining a positive result from the mid-term evaluation,
g) Active participation in academic life,
h) Promoting the dissemination of research results (publications, conference presentations, popularization),
i) Adhering to academic norms, principles of coexistence, and customs,
j) Undertaking professional practices according to the curriculum,
k) Complying with the Regulations.

Documentation of the Education Process

§10

1. Results of exams, credits, and professional practices are documented by entries in the academic transcript.
2. Grades for exams and credits are awarded on the following scale:
   a) Very Good - 5.0
   b) Good Plus - 4.5
   c) Good - 4.0
   d) Satisfactory Plus - 3.5
   e) Satisfactory - 3.0
   f) Unsatisfactory - 2.0
3. The doctoral student is entitled to a resit exam.
4. After each year of education, the doctoral student submits an annual report, prepared according to the form available on the Doctoral School's website (hereinafter referred to as the Annual Report).
5. The doctoral student documents their achievements and academic activity on their personal page on the Doctoral School’s website.

§11

1. The academic year is the unit of assessment in the Doctoral School, which consists of two consecutive semesters.
2. To complete the academic year within the specified deadline in the academic calendar, the doctoral student must submit the following documents to the School Council:
   a) The Annual Report,
   b) An updated individual research plan (if necessary).
3. The School Council decides on the completion of the academic year based on the Annual Report, the supervisor’s opinion mentioned in §7(4d), the doctoral student’s website, and any other documents submitted by the doctoral student.
4. The completion of the year is documented by an entry in the academic transcript.

Participation in Research

§12

1. The doctoral student participates in research in their research group at the Entity Running the Doctoral School, where they will defend their doctoral dissertation.
2. With the supervisor's consent, the doctoral student may participate in research projects.

Mid-term Evaluation

§13

1. The implementation of the individual research plan by the doctoral student is subject to a mid-term evaluation after two years of doctoral studies.
2. The mid-term evaluation is conducted by the Evaluation Committee.
3. The Evaluation Committee consists of 3 individuals who hold at least a postdoctoral degree in the discipline in which the doctoral dissertation is being prepared, including at least one person employed outside the Entities Running the Doctoral School. The supervisor(s) of the evaluated doctoral student cannot be members of the Evaluation Committee.
4. The mid-term evaluation is based on:
   a) Documentation of the studies in accordance with the Program of Education at the Doctoral School,
   b) A presentation by the doctoral student summarizing the results achieved during the implementation of the individual research plan, followed by a discussion with the Evaluation Committee,
   c) The supervisor's opinion on the progress of the doctoral dissertation,
   d) The doctoral student’s Annual Reports.
5. The mid-term evaluation ends with either a positive or negative result.

§14

1. The doctoral student will be removed from the list of doctoral students if:
   a) They receive a negative result in the mid-term evaluation,
   b) They fail to submit the doctoral dissertation by the deadline specified in the individual research plan,
   c) They resign from the program.
2. A doctoral student may be removed from the list of doctoral students if:
   a) They make unsatisfactory progress in preparing the doctoral dissertation,
   b) They fail to fulfil the doctoral student’s obligations outlined in §9 of the Regulations.
3. The decision of the School Council to remove a doctoral student from the list can be appealed.

Doctoral Scholarship

§15

A doctoral student at the Doctoral School, who does not hold a doctoral degree, is entitled to a doctoral scholarship (hereinafter referred to as the "Scholarship").

1. The Scholarship is paid from:
   a) Funds allocated by the minister responsible for higher education and science for maintaining and developing research potential, including education at the Doctoral School,
   b) Other funds available to the Entities Running the Doctoral School.

2. In case of removal from the list of doctoral students, the Scholarship payments are suspended starting from the first day of the month following the month when the decision became final.

Final Provisions

§16

1. The Regulations come into force on October 1, 2019.
2. Amendments to the Regulations may be introduced by the Scientific Councils of the Entities Running the Doctoral School through a resolution after consulting with the doctoral students' self-government. The provision of Article 205(3) of the Act of July 20, 2018, on Higher Education and Science applies accordingly.
3. In matters not regulated by the Regulations, generally applicable legal provisions apply, particularly the Act of July 20, 2018, on Higher Education and Science.

DOCTORAL SCHOOL REGULATIONS

(hereinafter referred to as the **Regulations)**

Adopted by the Scientific Councils of the National Center for Nuclear Research and the Institute of Nuclear Chemistry and Technology pursuant to Art. 205 sec. 2 of the Act of July 20, 2018 Law on Higher Education and Science.

General characteristics and profile

§1

1. The Regulations define the organization of education at the Doctoral School (hereinafter referred to as the Doctoral School) run jointly by research institutes - the National Center for Nuclear Research and the Institute of Nuclear Chemistry and Technology (hereinafter referred to as the Entities Running the Doctoral School).
2. The headquarters of the Doctoral School and its Secretariat are located at the National Center for Nuclear Research, at ul. Pasteura 7, Warsaw.
3. The Doctoral School educates doctoral students in the field of natural sciences in the following disciplines: physical sciences and chemical sciences.
4. Education at the Doctoral School is conducted on the basis of an educational program and an individual research plan. The curriculum is established by the Scientific Councils of Entities Running the Doctoral School. An individual research plan is developed by the doctoral student in consultation with the supervisor.
5. The implementation of the education program requires knowledge of the English language.

Organizational structure of the Doctoral School

§2

1. The organizational structure of the Doctoral School includes:
    a) the Director of the Doctoral School,
    b) the Deputy Director,
    c) Coordinators of Disciplines,
    d) the Council of the Doctoral School,
    e) the Recruitment Committee,
    f) Evaluation Committees.
2. The Doctoral School is managed by the Director of the Doctoral School with the participation of the Deputy Director. They are appointed jointly by the Entities Running the Doctoral School.
3. Director of the Doctoral School:
    a) announces the academic calendar and organizes the implementation of the education program,

b) evaluates the implementation of the education program, including research conducted by doctoral students,

c) appoints the Recruitment Committee and serves as its chairman,

d) appoints Evaluation Committees for the purpose of conducting mid-term evaluations of individual research plans of doctoral students.

4. The School Director, in consultation with the Directors of the Entities Running the Doctoral School, appoints Coordinators of Disciplines.

5. Discipline Coordinators:

a) supervise and are responsible for the implementation of the education program in a given discipline,

b) participate in the evaluation of the implementation of individual research plans of doctoral students.

5. The School Director, his Deputy and Coordinators of Disciplines form the Doctoral School Council.

6. Doctoral School Council:

a) develops a list of theses topics and a list of thesis supervisors and presents them to the Directors of Entities Running the Doctoral School for approval before announcing the recruitment for a given year,

b) credits doctoral students for consecutive years of education,

c) decides whether to extend the deadline for submitting the doctoral dissertation by the doctoral student,

d) decides whether to remove the doctoral student from the list of doctoral students.

Recruitment to the Doctoral School

§3

1. Recruitment to the Doctoral School takes place through a competition conducted by the Recruitment Committee.

2. The directors of the Entities Running the Doctoral School define the number of people admitted to the Doctoral School in a given year.

3. The rules of the competition are presented in the Principles of Admission to the Doctoral School, defined by the Scientific Councils of Entities Running the Doctoral School and posted on the website of the Doctoral School.

§4

1. A person may be admitted to the Doctoral School who:

a) holds the professional title of Master, Engineer or an equivalent title,

b) has obtained a positive grade in the examination in the basic subject in which the candidate will study at the Doctoral School,

c) has been qualified by the Recruitment Committee.

2. A person admitted to the Doctoral School:

a) begins education and acquires the rights of a doctoral student upon taking the oath,

b) receives a student ID and a Grade Book.

Education at the Doctoral School

§5

1. The period of education at the Doctoral School begins with the taking of the oath and ends with the submission of the doctoral dissertation.
2. Education at the Doctoral School lasts 4 years (8 semesters).
The Director of the Doctoral School, at the request of the doctoral student, suspends the education of a doctoral student for a period corresponding to the duration of the maternity leave, leave on the terms of maternity leave, paternity leave and parental leave, as specified in the Act of June 26, 1974 - Labor Code. Documents confirming the existence of circumstances justifying the suspension of education should be attached to the application.

§6

1. Within 12 months from the date of commencement of education, the doctoral student, in consultation with the supervisor(s), develops an Individual Research Plan containing, in particular, a schedule for the preparation of a doctoral dissertation and presents it to the appropriate Discipline Coordinator, as a representative of the Entity Running the Doctoral School.
2. The implementation of an Individual Research Plan by a doctoral student is subject to a mid-term evaluation in the middle of the education period specified in the education program (described in §13).
3. An individual research plan may be updated once a year when submitting Annual Reports (described in §11).
4. An individual research plan specifies the deadline for submitting a doctoral dissertation. At the request of the doctoral student and with the consent of the supervisor, this period may be extended by the School Council, but not longer than by 2 years.

§7

1. Within 3 months from the date of commencement of education, the School Council appoints the doctoral student's supervisor or supervisors (or an auxiliary supervisor).
2. The supervisor may be a person with the degree of habilitated doctor or the title of professor, and the auxiliary supervisor - a person with the title of doctor.
3. In justified cases, the School Council, after consulting the student, may decide to change the supervisor - at the request of the student, supervisor or on its own initiative.
4. The Supervisor(s) together with an Auxiliary Supervisor (if appointed):

a) agree with the doctoral student on the Individual Research Plan developed by the doctoral student,
b) provides the doctoral student with assistance in his/her scientific work,
c) supervise the fulfillment by the doctoral student of the obligations specified in the education program,
d) after the end of each year of education, he/she presents to the School Council a written opinion on the doctoral student's progress.

§8

A doctoral student has the right to vacation leave not exceeding eight weeks a year - on dates taking into account the academic calendar, agreed with the supervisor and made known to the School Director.

Duties of a doctoral student

§9

The basic duties of a doctoral student include:
a) implementation of the education program and Individual Research Plan,
b) systematic scientific work under the supervision of the supervisor aimed at developing a doctoral dissertation,
c) participation in lectures and seminars resulting from the individual research plan,
d) taking exams and obtaining credits,
e) submitting relevant documentation and obtaining credits for subsequent years of education,
f) obtaining a positive result of the mid-term evaluation,
g) active participation in scientific life,
h) caring for the dissemination of scientific research results (publications, conference presentations, popularization),
i) compliance with the norms, rules of coexistence and academic customs,
j) undergoing apprenticeships in accordance with the education program,
k) acting in accordance with the Regulations.

Method of documenting the course of education

§10

1. The results of exams, credits and apprenticeships are documented by the entry in the index.
2. Grades for examinations and credits are given according to the following scale:
a) Very good - 5.0

b) Good plus - 4.5
c) Good - 4.0
d) Sufficient plus - 3.5
e) Satisfactory - 3.0
f) Insufficient - 2.0.

3. A doctoral student shall have the right to a resit examination.
4. After each year of education, the doctoral student shall submit an Annual Report prepared in accordance with the form available on the website of the Doctoral School (hereinafter referred to as the Annual Report).

§11

1. The crediting period at the Doctoral School is the year of education, which is understood as two consecutive semesters.
2. In order to complete the year of education within the period specified in the academic calendar, the doctoral student is obliged to submit the following documents to the School Council:
   a) Annual Report,
   b) updating of the Individual Research Plan (if necessary).
3. The School Council decides to complete the year of education on the basis of the Annual Report, the supervisor's opinion referred to in §7 item 4d, and possibly other documents presented by the doctoral student.
4. Completion of the year is documented by an entry in the index.

Participation in scientific research

§12

1. The doctoral student participates in research in his research group in the Entity Running the Doctoral School, in which he will defend his doctoral dissertation.
2. With the consent of the supervisor, the doctoral student may participate in the implementation of research projects.

Mid-term evaluation

§13

1. The implementation of an individual research plan by a doctoral student is subject to a mid-term evaluation after two years of doctoral studies.
2. The mid-term evaluation is carried out by the Evaluation Committee.

3. The Evaluation Committee consists of 3 persons with at least the degree of habilitated doctor in the discipline in which the doctoral dissertation is being prepared, including at least 1 person employed outside the Entities Running the Doctoral School. The supervisor or promoters of the assessed doctoral student may not be members of the Evaluation Committee.
4. The mid-term evaluation is carried out by the Evaluation Committee based on:
    a) documentation of the course of studies in accordance with the Education Program at the Doctoral School,
    b) an oral presentation of the doctoral student summarizing the results achieved during the implementation of the individual research plan, followed by a discussion with the Evaluation Committee,
    c) the supervisor's opinion on the advancement of the doctoral dissertation,
    d) Annual reports of the doctoral student.
5. The mid-term evaluation ends with a positive or negative result.

§14

1. A doctoral student is removed from the list of doctoral students in the case of:
    a) obtaining a negative result of the mid-term evaluation,
    b) failure to submit the doctoral dissertation within the time limit specified in the individual research plan,
    c) resignation from education.
2. A doctoral student may be removed from the list of doctoral students in the event of:
    a) unsatisfactory progress in the preparation of the doctoral dissertation,
    b) failure to fulfill the doctoral student's obligations set out in §9 of the Regulations.
3. The decision of the School Council to remove from the list of doctoral students may be requested to reconsider the matter.

PhD scholarship

§15

A doctoral student of the Doctoral School who does not hold a doctoral degree receives a doctoral scholarship (hereinafter referred to as the Scholarship).
1. The scholarship is paid from:
    a) funds granted by the minister responsible for higher education and science for the maintenance and development of research potential, including education at the Doctoral School;
    b) other funds at the disposal of the Entities Running the Doctoral School.
2. In the event of removing a doctoral student from the list of doctoral students, the payment of the Scholarship shall cease on the first day of the month following the month in which the decision to remove from the list of doctoral students became final.

Final Provisions

§16

1. The Regulations enter into force on October 1, 2021.
2. Amendments to the Regulations may be introduced by a resolution of the Scientific Councils of Entities Running the Doctoral School, after consultation with the doctoral students' self-government. The provision of art. 205 paragraph. 3 of the Act of July 20, 2018 Law on Higher Education and Science shall apply accordingly.
3. In matters not covered by the Regulations, generally applicable provisions of law shall apply, in particular the Act of July 20, 2018, Law on Higher Education and Science.

Rules for the conduct of the mid-term assessment

at the Graduate School of Physics and Chemistry

1. The Director of the Graduate School appoints members of the 3-person mid-term assessment Committee for each doctoral student subject to evaluation and appoints the chairman. All members of the committee must have a postdoctoral degree; at least one must be employed outside the entities running the Graduate School.

2. The supervisor of the evaluated doctoral student, co-author of the publication, or the supervisor of his master's or bachelor's thesis may not be a member of the mid-term assessment Committee.

3. The mid-term assessment is carried out after completing the second year of studies.

4. The mid-term assessment can be carried out at the meeting of the Committee or remotely (on the GoToMeeting, Zoom or other platform providing audio and video transmission).

5. During the Committee meeting, the doctoral student presents a maximum of 20 minutes a multimedia presentation on the obtained research results.

6. The members of the Committee shall be provided with the documentation of the doctoral student from the Graduate School in the form of annual reports, the supervisor's opinion and the Individual Research Plan.

7. The mid-term assessment includes the assessment of the advancement level in the implementation of the Individual Research Plan and the assessment of the most important scientific achievements of the doctoral student related to the implementation of IRP.

8. In an open vote, the Committee adopts the assessment by a simple majority of votes in the presence of all members of the Committee.

9. After the evaluation, the Committee presents the results with justification in writing to the director of the Graduate School in writing. The Committee may also make recommendations for the further implementation of an individual research plan.

10. The Chairman of the Committee informs the doctoral student about the result of the mid-term assessment.

11. A negative result of the mid-term assessment results in removal from the list of doctoral students.

Narodowe Centrum Badań Jądrowych
National Centre for Nuclear Research
ŚWIERK

Otwock, dnia 05 marca 2025 r.

D.011.1.18.2025

PEŁNOMOCNICTWO

Działając w imieniu i na rzecz Narodowego Centrum Badań Jądrowych z siedzibą w Otwocku (NCBJ) udzielam

prof. dr hab. Michałowi Spalińskiemu
Dyrektor Szkoły Doktorskiej NCBJ

pełnomocnictwa szczególnego do złożenia i podpisania w imieniu NCBJ:

1) raportu z samooceny, o którym mowa w § 4 ust. 1 rozporządzenia Ministra Edukacji i Nauki z dnia 27 września 2021 r. w sprawie ewaluacji jakości kształcenia w szkole doktorskiej (Rozporządzenie) oraz jego ewentualnych uzupełnień;
2) oświadczeń, o których mowa w ust. 2 pkt 2 Rozporządzenia;
3) uwag do raportu z ewaluacji, o których mowa w § 7 ust. 4 Rozporządzenia;
4) zastrzeżeń do oceny z ewaluacji, o których mowa w art. 262 ust. 4 ustawy z dnia 20 lipca 2018 r. Prawo o szkolnictwie wyższym i nauce

Na mocy niniejszego pełnomocnictwa, pełnomocnik jest osobą upoważnioną, o której mowa w § 10 pkt 3 - 6 Rozporządzenia, w zakresie tam określonym.

Niniejsze pełnomocnictwo zostaje udzielone na okres pełnienia funkcji i nie obejmuje umocowania do udzielania dalszych pełnomocnictw.

Dyrektor
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Narodowe Centrum Badań Jądrowych
National Centre for Nuclear Research
ŚWIERK

Otwock, dnia 05 marca 2025 r.

D.011.1.17.2025

PEŁNOMOCNICTWO

Działając w imieniu i na rzecz Narodowego Centrum Badań Jądrowych z siedzibą w Otwocku (NCBJ) udzielam

dr hab. Anecie Malinowskiej, prof. NCBJ
Sekretarzowi Naukowemu NCBJ

pełnomocnictwa szczególnego do złożenia i podpisania w imieniu NCBJ:

1) raportu z samooceny, o którym mowa w § 4 ust. 1 rozporządzenia Ministra Edukacji i Nauki z dnia 27 września 2021 r. w sprawie ewaluacji jakości kształcenia w szkole doktorskiej (Rozporządzenie) oraz jego ewentualnych uzupełnień;
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