

# SUMMARY REPORT

on joint international accreditation of the cluster of  
educational programmes  
in the field of study

«Physics» (03.04.02)

delivered by Immanuel Kant Baltic Federal University

While preparing this Summary Report we used information from the Self-Evaluation Report and the Report on the External Review of the cluster of educational programmes in the field of study «Physics» (03.04.02) delivered by Immanuel Kant Baltic Federal University.

The presentation document for the use by the National Accreditation Board.

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## GENERAL INFORMATION ON EDUCATIONAL INSTITUTION

Full name of the educational institution	<i>Federal State Autonomous Educational Institution of Higher Education «Immanuel Kant Baltic Federal University»</i>
Founders	<i>Ministry of Education and Science of the Russian Federation</i>
Year of foundation	<i>1947 – Kaliningrad Pedagogical Institute 1966 – Kaliningrad State University 2005 – Immanuel Kant Russian State University 2010 – Immanuel Kant Baltic Federal University</i>
Location	<i>14, A. Nevskogo Street, Kaliningrad, 236041, Russia</i>
Rector	<i>Andrei Klemeshev, Doctor of Political Sciences, Professor</i>
License	<i>Nº 1797 of December 3, 2015, Series 90Л01, Nº 0008823, permanent</i>
State accreditation	<i>Certificate of State Accreditation Nº 2019 of June 16, 2016, Series 90A01, Nº 0002118, valid till May 15, 2020</i>
Number of students	<i>10876 including: full-time 9545 on-site and off-site 4 part-time 1372</i>

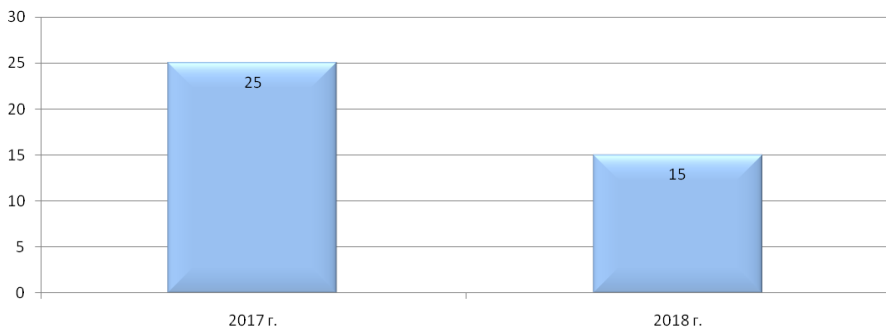
## INFORMATION ON THE EDUCATIONAL PROGRAMMES UNDERGOING ACCREDITATION

Educational programmes	<i>«Physics» (03.04.02)</i>
Level of training / Standard period of training	<i>Master programme / 2 years</i>
Structural subdivision (Head)	<i>Institute of Physics, Mathematics and Information Technology (Artem Iurov, Director)</i>
Dates of Review	<i>November 20-22, 2018</i>
Person responsible for accreditation	<i>Artem Iurov, Director of the Institute of Physics, Mathematics and Information Technology</i>

**SAMPLING RESULTS OF THE PROJECT  
"THE BEST EDUCATIONAL PROGRAMMES OF  
INNOVATIVE RUSSIA"**

Indicators	2018
<b>Cluster of the educational programmes in the field of study «Physics» (03.04.02)</b>	
Number of the given programmes in the RF	96
Number of higher educational institutions to offer the given programmes	96
Number of programmes – winners of the project (% from total number of these programmes offered in the RF)	18 (18,8%)
<b>Kaliningrad Region</b>	
Number of the given programmes offered in the region	1
Number of programmes – winners of the project (% from total number of these programmes offered in the region)	1 (100%)
Number of higher educational institutions and branches in the region	23
Total number of programmes offered in the region	146
Total number of programmes – winners of the project (% from total number of these programmes offered in the region)	68 (46,6%)

**REFERENCE DATA ON STUDENT ENROLLEMENT FOR  
EDUCATIONAL PROGRAMMES**



## **ACHIEVEMENTS OF THE STUDY PROGRAMMES**

### **Quality of the delivered educational programmes**

The quality of the delivered educational programmes is ensured by the following conditions: quality of selection of the student cohort, highly qualified teachers and their systematic professional development (in Russia and abroad); research activities and high academic mobility of teachers and students; internationalization of education; close cooperation with Russian and foreign partners; development and continuous improvement of teaching and learning materials; use of innovative educational technologies in the educational process; infrastructure for effective training.

### **Providing up-to-date content of education**

The up-to-date content of education is ensured by active participation of all stakeholders in the educational process, annual renewal and correction of the educational programmes, curricula and programmes of disciplines, the system of Lifelong Learning, and the possibilities for students to form an individual learning path.

### **Teaching staff**

The proportion of regular teachers delivering the educational programmes under review corresponds to the requirements of the Federal State Educational Standards of Higher Education. Basic education and qualification of all teachers correspond to the requirements. Leading experts of the Kaliningrad region and from other Russian leading higher education institutions as well as teachers from universities of Lithuania, Italy, India, Germany, Poland and England are involved in the educational process.

The teaching staff comprises highly qualified teachers having academic titles. There are research schools and systems of training of personnel of higher qualification.

The age of the teachers of higher qualification is positively changed: the number of Candidates of Sciences under 40 years of age is increased. The average age of teachers is stable; the tendency to rejuvenation of the teaching staff is in place.

### **Independent assessment of student learning outcomes**

The university regularly participates in the procedures of external review of quality assurance of the educational programmes required by the national legislation with the aim to monitor effectiveness of performance. The procedure of external quality assurance has different forms and is carried out on different levels.

External reviews prove high efficiency of delivery of the educational programmes under review. It is proved by the reports of the chairs of State Examination Commissions and the results of questionnaires of

employers. The teaching staff regularly conducts the survey of employers about the effectiveness of the students training.

The professional community (employers) carries out independent evaluation of knowledge during participation in the state final examination, assessment of students during various internships, joint corporate events oriented at demonstration of professional skills.

Invited experts are involved in interim control of the learning outcomes.

One of the criteria of quality of the educational programmes is evaluation of learning outcomes of students who periodically pass tests in the «United Portal of Internet Testing in Education» (<http://iexam.ru> и [http://fepo.i-exam.ru/fgos\\_pim\\_struct](http://fepo.i-exam.ru/fgos_pim_struct)). Students systematically participate in the Olympiad «Ia-professional» that is also independent evaluation of students' professional qualities.

### Research activity

Teachers and students do research and use the results in the educational process. Every year plans of research work are approved, research activities of the Institute and student research unions are improved, and the reports on their execution are reviewed and discussed.

The academic staff of the Institute participate in the largest international projects, and teachers actively take part in Russian and international conferences.

In 2017–2018 teachers prepared more than 50 study guides, 5 patents were registered, more than 50 research articles of the Scopus database were published.

### Academic mobility of students

The university widely uses the practice of short-term exchange education; students serve internships in partner universities with recognition of the training period and credit transfer.

5 students served internships in foreign research centres.

### Employability of graduates

Immanuel Kant Baltic Federal University actively cooperates with the regional and municipal executive bodies, educational and science and technology enterprises of the city and the region on personnel training and employability of graduates. The Employability Centre works at the university. Leading managers of the educational programmes of the Institute regularly (twice a year) carry out monitoring of graduates employability.

The first students of the programmes under accreditation will graduate in 2019. Graduates of the university Master programmes are in demand on the labour market that is proved by feedback from employers and employability data.



## Educational resources

All academic buildings are connected in the united corporate internal network. The educational programmes under accreditation are delivered in the academic buildings № 2 and № 32 with classrooms for lectures and practical training, computer classrooms, training and research laboratories of the Institute of Physics, Mathematics and Information Technology, reading and language rooms.

The Institute is provided with necessary material and technical resources in accordance with the requirements, as well as with classrooms, research and educational laboratory equipment, necessary number of computer classrooms and subject-specific software. The following Internet resources are used to improve the educational process: portal of the point rating system [brs.kantiana.ru](http://brs.kantiana.ru); testing portal [pt.kantiana.ru](http://pt.kantiana.ru); library Internet resource [lib.kantiana.ru](http://lib.kantiana.ru), Moodle system.

## EXTERNAL REVIEW PANEL



**Wu Xiaoshan** (China)

Review Chair, foreign expert

*Ph.D., Professor, Associate Dean of the School of Physics, Nanjing University, member of the Chinese Physical Society*

A nominee of the Higher Education Evaluation Centre of the Ministry of Education of the People's Republic of China



**Grigory Dunaevsky** (Russia)

Deputy Review Chair, Russian expert

*Doctor of Engineering Sciences, Professor, Rectors' Office councilor, Head of the Department of Radio Electronics, Director of the Research and Educational Centre «Materials and Technologies of Space-Related Application», National Research Tomsk State University*

A nominee of the Guild of Experts in Higher Education



**Zhao Fuli** (China)

Panel member, foreign expert

*Ph.D., Professor of the School of Physics, Associate Dean of the Higher Education Research Institute, Sun Yat-Sen University, Executive Director of the Guangdong Optical Society*

A nominee of the Higher Education Evaluation Centre of the Ministry of Education of the People's Republic of China



**Olga Mitrofanova** (Russia)

Panel member, representative of professional community

*Candidate of Engineering Sciences, Head of the research laboratory for electro jet engine-building «Fakel»*

A nominee of the laboratory «Fakel»



**Egor Bobkov** (Russia)

Panel member, representative of students

*1st year postgraduate student of the Faculty of Construction, Kaliningrad State Technical University*

A nominee of Kaliningrad State Technical University



**Wang Shuo** (China)

Observer

*Expert of the Higher Education Evaluation Centre of the Ministry of Education of the People's Republic of China*

# INFORMATION ON THE LEADING TEACHERS OF THE EDUCATIONAL PROGRAMMES

## **Sergei Leble**

*Doctor of Physical Sciences, Professor, Institute of Physics, Mathematics and Information Technology*

## **Karim Amirov**

*Candidate of Physico-Mathematical Sciences, research fellow of the laboratory of new magnetic materials*

## **Evgenii Klementiev**

*Candidate of Physico-Mathematical Sciences, Head of the laboratory of strongly correlated electronic systems, Head of the project «Nanostructures, volume and thin-film connections of transition metals as the perspective elements of nanoelectronics»*

## **Andrei Ziubin**

*Candidate of Physico-Mathematical Sciences, researcher of the Research and Educational Centre «Fundamental and Applied Photonics»*

## **Iliia Samusev**

*Candidate of Physico-Mathematical Sciences, Institute of Physics, Mathematics and Information Technology, Head of the Research and Educational Centre «Fundamental and Applied Photonics»*

## **Valeria Rodionova**

*Candidate of Physico-Mathematical Sciences, Head of the laboratory of new magnetic materials*

## **Nikolai Perov**

*Doctor of Physico-Mathematical Sciences, senior research fellow of the laboratory of new magnetic materials, Professor, Head of the Department of Magnetism, Lomonosov Moscow State University*

## **Anatolii Snigirev**

*Candidate of Physico-Mathematical Sciences, supervisor of the field of study «Coherent Optics», Head of the laboratory of X-ray optics*

## **Ludmila Makarova**

*Candidate of Physico-Mathematical Sciences, junior research fellow of the laboratory of new magnetic materials, assistant of the Department of Magnetism, Faculty of Physics, Lomonosov Moscow State University*

## COMPLIANCE OF THE EXTERNAL REVIEW OUTCOMES WITH THE STANDARDS

### **STANDARD 1. Policy (goals, development strategy) and quality assurance procedures of a study programme**

Compliance with the standard: **substantial compliance**

#### **Good practice:**

The university closely cooperates with the region. The governor of the Kaliningrad region is the Chair of the Supervisory Board of the university. The University intends to set up a branch of Kurchatov Institute.

Successful interdisciplinary integration of materials science, bioengineering and philosophy is in place.

Assistance in the problem of accommodation for young researchers on the regional level is in place.

The candidate pool is formed. Various competitions and grants are held for young researchers.

#### **Areas for improvement:**

It is recommended that transparency of the results of quality control should be provided with the help of the Institute website.

It is difficult to monitor and control adherence to the standards and cooperation in this sphere in the context of the created «distributed» system of quality control. It is advisable that this process should be accurately structured.

### **STANDARD 2. Design and approval of programmes**

Compliance with the standard: **full compliance**

#### **Good practice:**

Compliance of the educational programmes with the modern level of science and technology is discussed in the professional community of teachers and students.

Representatives of the professional community are involved in the development and discussion of programmes.

#### **Areas for improvement:**

It is recommended that the search of new stakeholders should be enhanced since today the programme is aimed at meeting the demands of an «inner» consumer – Science and Technology Park «Fabrika».

It is advisable that the Institute website should contain detailed information about the cluster of programmes.

### **STANDARD 3. Student-centred learning and assessment**

Compliance with the standard: **full compliance**

#### **Good practice:**

Students are well-informed about the programme, its particularities, details of training organization, purposes and expected learning outcomes, and the procedures of evaluation and appeal.

Masters are given the possibility to choose the research area (one of three) during the second year of training.

#### **Areas for improvement:**

It is recommended that students should have more opportunities to choose not only areas but topics of research (currently students have a limited number of topics provided by supervisors).

### **STANDARD 4. Student admission, support of academic achievements and graduation**

Compliance with the standard: **full compliance**

#### **Good practice:**

High academic mobility of students is in place. Students actively participate in foreign conferences (Germany, Turkey, Ukraine, etc.).

#### **Areas for improvement:**

It is recommended that the programme of double degree should be organized with a foreign partner as it will improve the image of the programme «Physics».

It is advisable to extend mobility of students and broaden research and cultural horizons.

### **STANDARD 5. Teaching staff**

Compliance with the standard: **full compliance**

#### **Good practice:**

Teachers are highly qualified and have great experience of teaching and research activities. The majority of them are performers and supervisors of research works.

Foreign experts and experts from partner enterprises are involved in the educational process.

High level of the teachers' motivation is in place, specifically in participation in research work.

The admission, promotion and dismissal rules are transparent.

An effective system of teachers' professional development is in place.

### **Areas for improvement:**

It is advisable that teachers should be nominated for subject-specific and state awards, prizes, honorary titles.

It is recommended that the information about the teachers and their achievements should be published on the Institute website.

It is advisable that a standing system of professional development for teachers of English should be created.

## **STANDARD 6. Learning resources and student support**

Compliance with the standard: **full compliance**

### **Good practice:**

The Science and Technology Park «Fabrika» is provided with great modern research equipment.

The laboratories have good microclimate. The teachers are always ready to discuss the problems of research works.

Students have the opportunity to get acquainted with the areas of research activity and choose their path.

### **Areas for improvement:**

It is recommended that surveys should be conducted at the end of the training courses.

It is advisable that the curricula should be supplemented with study guides and recommended literature in English.

## **STANDARD 7. Collection, analysis and use of information for managing the study programme**

Compliance with the standard: **substantial compliance**

### **Good practice:**

The information system at the university is modern and is actively used in the educational process.

Students have personal accounts that help to collect and integrate necessary information.

### **Areas for improvement:**

It is recommended that the information about the educational programme and working programmes should be available on the Institute website.

It is advisable that questionnaire of students should be conducted systematically, and the university information system should provide the coverage of the results of monitoring.

It is recommended that feedback from students and the Institute administration should be available.

### **STANDARD 8. Public information**

Compliance with the standard: **substantial compliance**

#### **Good practice:**

The Centre of Career maintains contacts with the graduates.

The information about successful graduates is published on the university website.

The university closely cooperates with the regional and Russian business community and with foreign research centres, universities and corporations.

#### **Areas for improvement:**

It is recommended that the information about the graduates as well as cooperation of the Institute with external and foreign research partners and employers should be published on the website of the Institute.

### **STANDARD 9. On-going monitoring and periodic review of programmes**

Compliance with the standard: **substantial compliance**

#### **Good practice:**

During the meeting the students noted constant improvement of the programme and its compliance with the modern tendencies in science and technology.

#### **Areas for improvement:**

It is recommended that the procedures of monitoring and evaluation of the performance of the educational programmes should be systematized. It is necessary to inform the HEI's community on the results of monitoring and use them for improving the programmes.

It is advisable that the web-site section "Discuss the programme" should be created.

## **STANDARD 10. Cyclical external quality assurance of study programmes**

Compliance with the standard: **substantial compliance**

### **Good practice:**

All educational programmes of the University passed state accreditation, i.e. comply with the state standards.

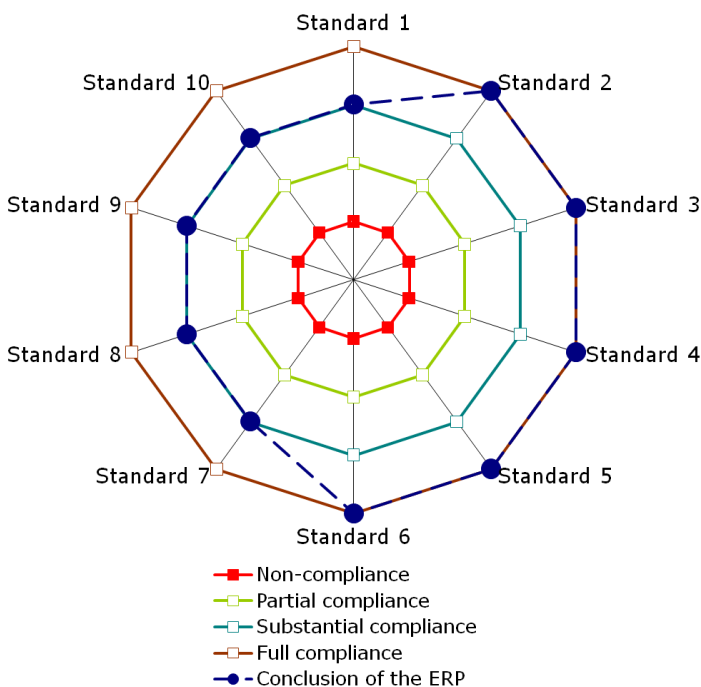
### **Areas for improvement:**

It is recommended that the consistency of the quality control should be improved by way of creating a corresponding council or a committee of the Academic Council of the HEI.

Following the results of the international public accreditation and previous procedures of quality evaluation, it is necessary to form, discuss in the teams and the Academic Council and accept for execution the action plan on further improvement of the educational programmes.



## DISTRIBUTION DIGRAM OF THE EXTERNAL REVIEW OUTCOMES



- Standard 1. Policy (goals, development strategy) and quality assurance procedures of a study programme
- Standard 2. Design and approval of programmes
- Standard 3. Student-centered learning and assessment
- Standard 4. Student admission, support of academic achievements and graduation
- Standard 5. Teaching staff
- Standard 6. Learning resources and student support
- Standard 7. Collection, analysis and use of information for managing the study programme
- Standard 8. Public information
- Standard 9. On-going monitoring and periodic review of programmes
- Standard 10. Cyclical external quality assurance of study programmes

## CONCLUSION OF THE EXTERNAL REVIEW PANEL

Based on the self-evaluation report analysis, documents and data submitted the External Review Panel has come to the conclusion that the cluster of the educational programmes in the field of study «Physics» (03.04.02) **fully** complies with the standards and criteria of accreditation of the National Centre for Public Accreditation.

The Panel recommends that the National Accreditation Board accredit the cluster of the educational programmes in the field of study «Physics» (03.04.02) delivered by Immanuel Kant Baltic Federal University for the period of **six** years.

## SCHEDULE OF THE SITE VISIT OF THE EXTERNAL REVIEW PANEL

Time	Activity	Participants	Venue
<b>November 20, Tuesday</b>			
07.00 – 08.00	Breakfast at the hotel «Tourist»		
08.30	Transfer to the University		
09.00 – 11.00	First meeting of the Panel		Room 27, Building 4, 56A, Chernyshevskogo Str.
11.00 – 13.00	Tour of the University (visiting classrooms, library, etc.)	ERP	Building 4, 56A, Chernyshevskogo Str.
13.00 – 14.00	Lunch		14, A. Nevskogo Str.
14.00 – 15.00	<b>Meeting with Institute Director, Deputy Directors and leading managers of the educational programme</b>	Institute Director, Deputy Directors, ERP	Room 301, Building 2, 14, A. Nevskogo Str.
15.00 – 16.00	Subject-specific tour	ERP	Building 2, 14, A. Nevskogo Str.
16.00 – 16.30	Work with documents	ERP	Room 308, Building 2, 14, A. Nevskogo Str.
16.30 – 17.30	<b>Meeting with graduates</b>	Graduates, ERP	Room 301, Building 2, 14, A. Nevskogo Str.
17.30 – 18.00	Work with documents	ERP	Room 308, Building 2, 14, A. Nevskogo Str.

Time	Activity	Participants	Venue
<b>November 21, Wednesday</b>			
08.30	Transfer to the University		
9.00 – 10.30	<b>Meeting of the ERP with the University administration and people responsible for accreditation</b>	Rector, Vice-Rectors, people responsible for accreditation, ERP	Room «Skvorechnik», Building 1, 14, A. Nevskogo Str.
10.30 – 11.00	Internal meeting of the Panel	ERP	Room «Skvorechnik», Building 1, 14, A. Nevskogo Str.
11.00-12.00	<b>Meeting with the representatives of the service for provision of the educational activities, Centre of Career</b>	Representatives of the service for provision of the educational activities, Centre of Career, ERP	Room «Skvorechnik», Building 1, 14, A. Nevskogo Str.
12.00 – 13.00	Lunch		Building 1, 14, A. Nevskogo Str.
13.00 – 14.00	<b>Meeting with teachers</b>	Teachers, ERP	Room 301, Building 2, 14, A. Nevskogo Str.
14.00 – 14.30	Internal meeting of the Panel	ERP	Room 308, Building 2, 14, A. Nevskogo Str.
14.30 – 15.30	<b>Meeting with students</b>	Students, ERP	Room 301, Building 2, 14, A. Nevskogo Str.
15.30 – 16.00	Internal meeting of the Panel	ERP	Room 308, Building 2, 14, A. Nevskogo Str.
16.00 – 17.00	<b>Meeting with representatives of professional community</b>	Employers, ERP	Room 301, Building 2, 14, A. Nevskogo Str.
17.00 – 19.00	Work with documents	ERP	Room 308, Building 2, 14, A. Nevskogo Str.
<b>November 22, Thursday</b>			
8.30	Transfer to the University		
09.00 – 12.00	Internal meeting of the Panel: discussion of preliminary results of the site visit, preparation of the oral report of the panel	ERP	Room 308, Building 2, 14, A. Nevskogo Str.
12.00 – 13.30	<b>Closing meeting of the External Review Panel with the representatives of the University</b>	ERP, University administration, Deans of the Faculties, Heads of the Graduate Departments, teachers, students	Room 202, Building 1, 14, A. Nevskogo Str.
13.30 – 14.30	Lunch		Building 1, 14, A. Nevskogo Str.
15.00	Tour of the city		
	Departure		