



# World of MEPhI

September '19



ИЯФТИ

ИНСТИТУТ ЯДЕРНОЙ  
ФИЗИКИ  
И ТЕХНОЛОГИЙ  
ИМЕНИ МИФИ

**THIS IS YOUR DAY,  
FRESHMAN!**



# THIS IS YOUR DAY, FRESHMAN!



On September 1, 2019, a celebration on the occasion of the Freshman Day was held at MEPHI.

The festival for yesterday's school students became a vivid symbol of the beginning of a new stage in their life, conscious and independent. By tradition, the solemn part took place at the front porch of the Palace of Tsar Alexei Mikhailovich in Kolomenskoye, around which groups of freshmen led by curators gathered. Before the start, the noise and buzz of conversations and laughter was heard everywhere - the guys talked as if they had known each other for years, and all thanks to the initiative senior students and the interactive programme «Instructions for Use», who managed to rally completely strangers in one day.

The event began with a welcome speech by the

Rector of MEPHI Mikhail Strikhanov. Congratulating all newly arrived students on the Day of Knowledge, he recalled that the history of the university's establishment determined its defense character and traditions, but along with this, MEPHI remains a global university, one of the top 100 out of 5,000 world universities in the natural sciences, therefore, to work at the international level it is necessary not only to study theoretical and applied disciplines, but also to be able to speak English. «Your parents are proud of you right now! You are bright, talented, I wish you a happy student life and a good career path. Remember, sometimes life presents disappointments, but it should be easier to relate to. Bring your optimism through your whole life. But do not relax, because our teachers are demanding and strict. However, if you have done a good job, you can have a good rest! «

The Director of the Moscow State Integrated Museum-Reserve Vsevolod Timofeev, in turn, emphasized that the museum is always happy to see all the MEPHI students on its territory to get acquainted with Russian traditions.

The Chairman of the Interregional Public Movement of Veterans of Nuclear Energy and Industry Vladimir Ognev made a parting word: «At MEPHI they train not only performers, but also artists. MEPHI has all the conditions for this: a wonderful teaching staff, the best teaching methodology in the world, and, of course, a decent material and technical base. As Isaac Newton said, he saw farther than others only because he stood on the shoulders of giants. At MEPHI there are a huge number of them. Six Nobel Prize winners tied their fate with the university, 29 academicians, more than 330 doctors and professors. This is all for you! Find a giant for yourself, climb on its shoulders, and then you will take place in the scientific life and life in general! «

The senior project manager of the Personnel Policy Department of Rosatom State Atomic Energy Corporation Julia Dmitrieva also wished for good study, emphasizing that MEPHI is a global university. The Vice-rector Elena Vesna joined in the congratulations and wished all freshmen to complete successfully what they started: «I wish you to get together at the graduation ceremony four or five years later and, by traditionally launching colored balloons up, give each other a promise to meet each year to recall wonderful years of study in the University. Necessarily in the same composition, without losing anyone! Let's work on it! «

In turn, the Vice-Rector for Research Nikolay Kargin noted the impor-





## NEWS



tance of such a step as choosing a university and wished everyone good luck in self-realization as a specialist, for what all conditions have been created at MEPHI.

For many years now, the interactive costume presentation by the Kolomenskoye Museum-Reserve employees has been an integral part of the solemn event. Peter the Great himself granted congratulations to the freshmen and even shared with them that he himself did not mind studying at such University. In the final staging a falcon was launched into the sky as a symbol of high flight to the heights of science of future graduates.

The festive program of the event was adorned by the performance of the MEPHI Academic Male Choir under the direction of the artistic director, Honored Artist of Russia Nadezhda Malyavina.

The festive program did not end there. The curators in a friendly column led newly students to the territory of MEPHI. So, the main building turned out to have the maximum concentration of ambitious and full of hopes guys who competed, which faculty is the loudest to declare itself, and took the vow «to learn so that they don't have to study again.» For a successful passing the first semester finals, undergraduates strongly recommended not only to learn the «knowledge mimimum»,

but be sure to trip over it, as well as rub artifacts - scores and a lamp, of course, for good luck.

Next, freshmen were expected to meet with the leaders of the institutes and attend a gala concert, which featured numerous creative and sports associations: a student song club, a poetry club, a center for cultural projects, the chamber choir Carpe Diem, the vocal studio Quanto di Stella, an aerobics section, the Eighth Creative Association, a cheerleading team, the hip hop team EXPlosion, a rock laboratory, a sambo section, the ballroom dance studio ESTA. The parliamentary club of MEPHI and the patriotic club «Vernost» («Fidelity») also held a presentation of their teams. Freshmen were clearly puzzled by the search for the answer to the question which association they most want to join in after-hours.

On the same day, a meeting was held for masters and graduate students regarding organizational issues.

It is worth noting that on September 1, an agreement was also signed between MEPHI in the person of rector M. Strikhanov and the Moscow State Integrated Museum-Reserve in the person of director V. Timofeev. The agreement involves cooperation in the field of educational, scientific, research and educational activities.





## EVENTS

## THE UNIVERSITY DISCUSSED CURRENT ISSUES OF THEOLOGICAL EDUCATION

On September 26, MEPhI held a methodological seminar «Normative and legal regulation in the field of theological (religious) education: problems and development prospects».

The event was organized by the Scientific and Educational Theological Association (SETA) and MEPhI with the support of the Federal Service for Supervision in Education and Science (Rosobrnadzor) and the Church Graduate and Doctoral School named after Saints Cyril and Methodius.

The seminar was attended by representatives of secular and religious universities, including representatives of major faiths and small religious groups.

Welcoming the participants of the seminar, the head of the Rosobrnadzor Department of Supervision and Control of Organizations Engaged in Educational Activities Sergey Rukavishnikov noted that with the introduc-

tion of theological education, teachers and lawyers have to overcome a number of problems: their solution can accelerate the dialogue between all participants in the process.

Rector of MEPhI Mikhail Strikhanov emphasized that the university plans to increase the social and human sciences block, because, in addition to the training function, the university is obliged to educate young people.

«We must preserve the traditions that have existed for many centuries in our country, instill in youth the values that guided the previous generations, so that they would know this world more deeply,» the rector said.

The seminar participants discussed topical issues of legal regulation of the licensing procedure and state

accreditation of universities, including a question of legal regulation of cooperation of the church and the state in the field of higher education. During the discussion, such aspects of the legal regulation of theological training as the procedure for accreditation of educational religious institutions, the limits of their independence in the organization of training, the specifics of expert regulation of relations between the state and religious communities were examined.

The deputy head of the department of Rosobrnadzor Alexander Krasilnikov told about the most common violations of mandatory requirements for universities. He also said that the department's website had a full list of documents that universities can guide in their activities.

The Director of Russian National Accreditation Agency Lemka Izmailova informed about typical violations during state accreditation in relation to educational programs implemented in accordance with the Federal State Educational Standard.

The report of the Director of the Higher School of Law at the Higher School of Economics Dmitry Kuznetsov was devoted to new requirements for the system of higher and additional professional education in connection with the use of professional standards.

During the discussion, the seminar participants gained practical skills in designing activities related to both theological disciplines and the social and human sciences block in technical universities.

In the framework of the seminar, Metropolitan Hilarion of Volokolamsk delivered a lecture on the theme «The Sermon on the Mount and the Person of a Modern Man».

The Sermon on the Mount is the most famous of the speeches of Jesus Christ, revealing the essence of the moral teaching of Christianity. Metropolitan Hilarion introduced the audience to various theories regarding the creation of the texts of the four Gospels and the information contained in them, as well as the differences in the Gospel texts.

He also addressed the question of how the principles of the Sermon on the Mount can be realized in our time and influence the personality of modern man.



## MEPHI TOOK THE SECOND PLACE IN THE RANKING OF RUSSIAN UNIVERSITIES RUR 2019



On September 9, 2019, the first Russian university ranking Russian Universities Ranking by RUR was published. MEPhI took the second place among Russian universities in it. The top three universities also included Lomonosov Moscow State University (1st place) and Tomsk State University (3rd place).

Round University Ranking (RUR) is an international university ranking that evaluates the activities of universities according to 20 parameters, grouped in four directions: the quality of teaching (40% of the university grade), the quality of research (40%), the level of internationaliza-

tion (10%), the level of financial stability (10%).

«A distinctive feature of the RUR rating is taking into account the main activities of the university and stability in the methodology. This allows universities to a certain extent to monitor their development over a sufficiently long period of time, since the rating has existed for ten years. During this time, MEPhI significantly strengthened its position in the global ranking of RUR, rising from 475th place in the world in 2010 to 157th place in 2019,» said Mikhail Strikhanov, the Rector of MEPhI.

In 2019, 74 universities from 31 regions of Russia took part in the Russian version of RUR.



## INTERNATIONAL COOPERATION

# JAPANESE STUDENTS DEFEND THEIR PROJECTS AT MEPHI

Between September 9 and 20, four master students of the Tokyo Institute of Technology, one of the leading technical universities in Japan, underwent an internship in four laboratories of the MEPHI Institute of Nuclear Physics and Engineering.

The selection procedure consisted of the following stages: students of the Tokyo Institute of Technology got acquainted with the activities of MEPHI laboratories through an information booklet, sent applications to the curators of the project in Japan indicating the chosen place for internships, then university experts selected the best applications as part of the competition. The uniqueness of the program lies in the training of young researchers and engineers who can contribute to the development of the nuclear industry.

During the period of stay, Japanese students were engaged in research work in laboratories, attended excursions in the divisions of MEPHI. Also an integral part of the internship was a cultural program. At the end of the internship, projects were submitted and defended.



## Students from Japan shared their impressions:

### Tsubasa Watanabe:

«I chose MEPHI, because there are all the opportunities and good equipment for research in the field of nuclear technology. The internship helped me learn more about the difference in experimenting in Japan and Russia. It will help improve follow-up research through interaction with researchers in the same scientific field.»

### Taro Fumimoto:

«The internship is related to my research, which I

conduct at Tokyo Institute of Technology. Here at MEPHI, I defended a project regarding the creation of a 3-D model of particles measured by a detector. I really like people in Russia, they are very kind and polite.»

### Takahashi Naoki:

«The internship provided an opportunity to get acquainted with the numerous equipment for power plants. I defended a project which goal was to determine the flow of liquid conductor in natural convection. As for Moscow, it

is very beautiful. I bought a lot of souvenirs for my friends from Japan. The main reason why I chose this internship is because MEPHI is the largest university in Russia in the field of the study of the nuclear properties of matter. At the end of two weeks in Russia, I defended a project related to calculation the uncertainty and reliability of nuclear power plant facilities.

In addition to the university, I liked the Kolomenskoye park, which is nearby. It is very large, it is quiet and beautiful. We walked around Moscow a lot, I really liked it, because you can't see such a thing in Tokyo.»

### Takaaki Miyabe:

«The exchange is carried out in the framework of the five-year project «Training of leading scientists and engineers in the field of healthcare, medicine, nuclear energy and the energy industry between Japan and Russia». So, in the future, four students from MEPHI will go for an internship at the Tokyo Institute of Technology in February for two weeks, another MEPHI student will leave for

Japan for three months in November. Also, within the framework of this project, Japanese-Russian student forums are being organized for students and staff.»

Among the prospects for the development of bilateral relations between the Tokyo Institute of Technology and MEPHI we can single out joint scientific research in such areas as decommissioning of nuclear power plants, complex multiphysical modeling of nuclear power facilities, development of digital doubles of nuclear research and power plants, as well as joint publications and applications for grants for conducting joint research and joint educational program.

It is worth noting that internships contribute to the development of a future researcher and provide an incentive for in-depth study of not only students' specialty and foreign developments in this field, but also a foreign language. In general, the academic mobility of students allows us to develop cooperation and deepen mutual understanding between Russia and Japan.





## CHARITY

# VIII CHARITY FESTIVAL «FROM HEART TO HEART» TOOK PLACE IN KOLOMENSKOYE



On September 29, the VIII annual charitable festival «From Heart to Heart» was held at the Kolomenskoye Museum-Reserve, organized by representatives of the volunteer movement «MEPHI Good Deeds Service». The funds raised at the event were sent to the «Sunflower» charity fund for helping children with autoimmune diseases.

The event is a student initiative, the festival is fully organized by students. Its uniqueness is that there are no prices and price tags on the site, all donations are voluntary. The festival is held under the motto «Creativity to help children»: everyone through creative activity can show interest in charity and assist in solving acute social problems.

According to the MEPHI media center «Be Aware» the festival brought together more than 200 talented and caring people who acted as organizers and volunteers.

The history of the festival began with a small action in 2012, which was held at the initiative of several students in the main building of MEPHI. Gradually, from year to year, it began to gain momentum, and soon «From Heart to Heart» acquired the status of an all-Russian festival, covering four cities: Moscow, St. Petersburg, Volgograd, Saratov. And in 2018, the event was declared the best social project of the all-Russian competition Eventiada. For all the time of the festival,

more than 25 thousand people visited it, and the amount of funds raised has long exceeded the mark of 1 million rubles.

At the festival, a lot of venues were targeted at both adults and children: sports, science, music, dance. So, the guests were offered to participate in the quest, make leaf decorations, paint canvas bags, make an origami or a robot with their own hands, observe and participate in scientific experiments, for example, eat nitrogen ice cream or make non-newtonian liquid, become a model for face painting, practice yoga, shoot a bow, participate in hip-hop, break dance, zumba dance workshops or listen to lectures on the ecological footprint and separate collection of garbage. Young artists performed at the concert venue in the hall of the Palace of Alexei Mikhailovich, among them - members of the Zabava dance company, semi-finalist of the show «Voice. Children-6» and laureate of international competitions Alina Karpenko, finalist of the «New Wave» Mariam Jalagonia, finalist of the national selection of the children's «New Wave» Anna Yakubuk and many others.

**What do participants and organizers of the festival think?**

**Mersar Zakpayeva, 2nd year MEPHI student, organizer:**

«The festival is an opportunity to help in any way you like, regardless of whether you are a student or a billionaire. Any help is significant.»

**Julia Alekseeva, curator of the volunteer squad of school No. 1296:**

«We learned about the festival through students who were our students and entered MEPHI. We ourselves were convinced that «From Heart to Heart» is bright, colorful, interesting. Helping is great. I am glad that even schoolchildren understand the seriousness and importance of solving social problems, such as supporting people with autoimmune diseases.»

**Dmitry Gorbunov, 2nd year MEPHI student, organizer:**

«Last year I came to this festival as a volunteer. I can say that it defined my future destiny as a student activist. It all started with this festival. I expect the freshmen who are helping today to discover something new.»

**Maria Yakusheva, 1st year MEPHI student, volunteer:**

«This is my first time at the festival. I saw how many people take the initiative, try to help others, and this is the most important thing. People often help to get some kind of benefit, but here, at the festival, they participate to help from the bottom of their hearts.»

**Galina Lokteva, participant:**

«This is the first time I've attended such a festival. It is immediately noticeable that there is a friendly attitude towards everyone here. It's important to hold such festivals because they bring people together and make people kinder.»

**Daniil Bobrov, participant:**

«I was surprised that a large number of people gather for a single purpose - to help those in need and bring joy to visitors. It is very unifying. And it really shows what we should all strive for. It is also important that absolutely all funds go to charity.»



## OUTSIDE CLASSROOMS

In July 2019, MEPHI Higher Engineering School master students, with the support of the Atomstroyexport JSC (the engineering division of Rosatom State Corporation), visited Novovoronezh NPP with a guided tour.

Novovoronezh NPP is one of the oldest nuclear energy enterprises in the Russian Federation and the largest producer of electric energy in the Voronezh region. This is the first nuclear power plant in Russia with WWER-type reactors (pressurized-type water-cooled power reactors with ordinary pressured water).

Students listened to lectures, talked with the workers and the station management, walked around the territory, and finally shot an amateur video about their trip, in the final frame of which the famous slogan sounded: «Stronger Rosatom - Stronger Russia!»

Maxim Karpychev, a MEPHI Higher Engineering School student, went to the north. He participated in the Arctic Summer School, organized by Northern (Arctic) Federal University and taking place near Arkhangelsk.

The task for the Maxim's group was to propose modern algorithms for diagnosing equipment in remote access, namely marine diesel engines used on small Arctic vessels. The engine has a set of sensors that constantly monitor the operation of all systems - fuel, air, cooling, temperature conditions, load characteristics, exhaust system.

Maxim's group proposed the use of a system for diagnosing the condition of engines, consisting of sensors, an on-board computer and a single processing center. The sensors that make up the engine regularly transmit indications to

# MEPHI HIGHER ENGINEERING SCHOOL: OUR SUMMER - REVERSE ENGINEERING, NOVOVORONEZH NPP AND BIG DATA IN THE ARCTIC



the on-board computer, which either transfers data to the processing center, or processes the data on its own. In both cases, methods of working with big data and machine learning algorithms are used.

In addition to group work on projects, students of the Summer School delved into the Arctic topics at lectures, took part in a quest, went on an excursion to the island of Kego (Kegostrov), played basketball,

sang songs to the guitar. In general, there is something to remember!

And Higher Engineering School students who worked in the Atomstroyexport in the summer on digitizing design decisions

successfully completed the first stage. The work consisted of translating «predigital» projects from paper to modern, and most importantly, working, 3D models.

## MEPHI STUDENT HEADS FOR THE SECOND YEAR THE ALL-RUSSIAN STUDENT CONSTRUCTION SITE AT LENINGRAD NPP-2

For many years in a row, student construction sites at nuclear power plants of Rosatom State Corporation have attracted young people from all over the country. This year, for the first time, an all-Russian student construction took place at the construction of the Leningrad NPP. It is especially pleasant that it was the student of our university, Evgeny Ilitsky, who headed this nuclear construction this summer.

Evgeny did not receive such a responsible position by chance: having become part of the student construction brigade «Slepnr» in 2016, a year later he became its commander, and already in the fall after the end of second season he was elected the student brigade headquarters commander of our university. In the summer of 2018, he became the commander of an interregional student construction site. Among the student's merits are a certificate of appreciation «For Contribution to the Development of Student Brigade of the Nuclear Industry» and

an honorable badge «For Contribution to the Development of Brigade of the Nuclear Industry», as well as the title of best brigade commander at the Belarusian NPP in 2017.

The duties of the construction site commander include contacting with the employer and the solution of working issues, the organization of accommodation, meals and transport to the facility, as well as conducting of inter-squad competitions and city tours. Under the leadership of Evgeny this year, more than 300 students from Moscow, Tomsk, Voronezh, Chelyabinsk, St. Petersburg, Novosibirsk, Leningrad, Sverdlovsk, Kaluga, Rostov and Vologda regions, as well as the Altai and Perm Territories.

At the end of the 2019 labor season, Evgeny received certificate of appreciation from the Director of Leningrad NPP-2 Vladimir Pereguda and the highest award of «Russian Student Brigades» - an honorable badge «For Active Work in Student Brigades».

## REPRESENTATIVES OF MEPHI BECAME AMBASSADORS OF MAIL.RU GROUP

Mail.ru Group has announced recruitment to the new team of «Mail.ru Group Ambassadors» - during the year 70 students, graduate students and teachers of Russian universities will become evangelists of the technology company.

In the 2019/20 academic year, the ambassadors of the Mail.ru Group at MEPHI will be Alexandra Kachina and Inna Malova.

The main task of the ambassadors is to tell modern students about the IT industry in general, about new technologies, about the educational projects of the Mail.ru Group, its products, business areas and prospects for working in a group of companies. Participants in the ambassador program will conduct educational activities at their university on behalf of Mail.ru Group: organize lectures, webinars, hackathons, participate in career days, etc.

In turn, the program enables students to develop communication and managerial skills, upgrade their digital and soft skills and, to try themselves as a representative of a large IT company while still at university, to realize their own ideas. All program participants will go to the Moscow office of Mail.ru Group for training, meet with top managers of the company, and some will become part of the Mail.ru Group team.



CITIUS, ALTIUS, FORTIUS!

# MEPHI RUGBY PLAYERS HAVE THE GOLDEN CUP AGAIN!

On September 8, in addition to other events held by the University on the City Day, the XI Moscow Rugby Tournament was held, dedicated to the memory of the first MEPHI rector Viktor Grigoryevich Kirillov-Ugryumov.

Traditionally, the event was held at the Fili stadium, known for its rugby history. The teams were represented by students from MEPHI, Moscow State University and D. Mendeleev University of Chemical Technology of Russia. The highlight of this sporting event was the matches of women's teams debuting in such tournaments. The emotional confrontation of the girls on the rugby field ended with the victory of the Moscow State University team, our team took second place.

It should be noted that the wonderful vocal performance of the soloists of the band «Quanto di stella» accompanied the entire event on this holiday. Guests of the event and veterans of the

MEPHI Rugby Club appreciated these innovations.

The key event of the tournament was the intriguing final match of the men's teams. Having gained a significant advantage in the score at the beginning of the meeting, our guys relaxed in the middle of the game, and Moscow State University managed to even the score.

The match finale was tense and dramatic. The final whistle of the referee recorded the result. 32-29 in our favor! MEPHI rugby players have gold medals and winners cup!

We thank our rival friends from Moscow State University and D. Mendeleev University of Chemical Technology of Russia for their active participation and serious competition on the sports field! We thank everyone who helped in the preparation and conduct of this event: photo, video and medical support of the tournament, the staff of the department «Physical Culture» and the MEPHI Center for Physical Culture and Sports.



## VIII MEPHI SPORT GAMES ENDED

In mid-September, on the basis of the country sports and training centre «Recreational center «Volga», the VIII MEPHI Sport Games were held.

The main objectives of the Sport Games are the promotion of a healthy lifestyle, the strengthening of friendly sports ties, the popularization of the «Ready for Work and Defence» program, the improvement of sportsmanship and the preparation of the sports reserve for the MEPHI sport teams, and the formation of an active life position among young people.

330 students representing eleven different campuses

took part in the sports competitions. Among them were MEPHI (Moscow), Dimitrovgrad Engineering and Technological Institute (Dimitrovgrad), Ozersky Technological Institute (Ozersky), Seversk Technological Institute (Seversk), Obninsk Institute for Nuclear Power Engineering (Obninsk), Volgogradsk Engineering and Technological Institute (Volgogradsk), Snezhinsk Physics and Technology Institute (Snezhinsk), Balakovo Institute of Engineering and Technology (Balakovo), Tryokhgorny Technical Institute (Tryokhgorny), Lesnoy Technological Institute (Lesnoy), Sarov Physics and

Technical Institute (Sarov).

Competitions were held in 16 sports, in particular in badminton, volleyball, arm-wrestling, table tennis, streetball. The Ozersky Technological Institute team participated in the Sport Games for the first time and successfully performed in 11 types of programs.

The result of a stubborn struggle was the following position of participants on the winners' podium: the first place was taken by the MEPHI team (Moscow), the second – Obninsk Institute for Nuclear Power Engineering (Obninsk), the third – Sarov Physics and Technical Institute (Sarov).



## MEPHI STUDENTS - WINNERS AND PRIZE-WINNERS OF THE «MOSPROM» SPORT GAMES

On the territory of the Olympic complex «Luzhniki» passed the final stage of the first «MOSPROM» Sport Games. It was attended by 16 teams from industrial enterprises and universities of Moscow, including the team of MEPHI. Competitions were held in several sports: athletics, futsal, volleyball, table tennis, streetball and chess.

MEPHI students showed excellent results in athletics. Danil Shinyaev and Maxim Likhachev took bronze at the 100-meter and 1000-meter distances. Maria Kolumets and Svetlana Golub took the third and second places in the 1000 meter race. In the relay race, our team confidently ascended to the second step of the podium.

In the table tennis competitions student Anna Bogdanova became the third.

The chess players of MEPHI also showed excellent results: Pavel Chernyshov took the first place, and Konstantin Zhitnikov – the third.

The staff and teachers of the MEPHI department of sports education congratulate athletes with an award-winning performance and wish them new victories!