



Welcome Aboard!

Every autumn, we welcome new internationally recruited staff members, and this year is no exception. In this supplement to The HSE Look issue № 53, we are pleased to introduce our new colleagues – an assistant professor and 22 post-doctoral fellows, some of whom have been hired to the HSE University’s new international laboratories (of Statistical and Computational Genomics, of Algebraic Topology and Its Applications, for Supercomputer Atomistic Modelling and Multi-scale Analysis) and faculties (of Geography and Geoinformation Technology).

Several other colleagues renewed their work contracts with HSE University and kindly agreed to talk about what motivated them to choose our institute for the second or third year.

Despite the period of uncertainty, life goes on. And we are happy to announce the open call for tenure track positions at iri.hse.ru!

Economics

Dr. James Tremewan is Assistant Professor at the Department of Theoretical Economics, Faculty of Economic Sciences. Dr. Tremewan obtained his PhD in Economics at the Toulouse School of Economics in 2011, and has worked at the University of Vienna and the University of Auckland. His research is in Behavioural and Experimental Economics, testing economic and other behavioural theories on real people in the laboratory, with the aim of building better models of decision-making. He is currently working on projects on coalition-formation, social norms, and persuasion.

Dr. Irina Bakalova joined the International Laboratory for Macroeconomic Analysis of the Faculty of Economic Sciences in 2020 and holds a PhD in Economics from KU Leuven.

‘HSE University is an exceptional place! It is packed full of enthusiastic and ambitious professionals, and at the same time, I find this environment highly supportive. Moreover, I believe it gives a real opportunity to contribute to the global scientific community and advance Russian science and higher education’.

Dr. Bernardo Eugenio Pincheira Sarmiento received his PhD at the University of Nottingham in 2019. Dr. Pincheira Sarmiento has been working for the International Laboratory for Institutional Analysis of Economic Reforms of the Center for Institutional Studies since 2019.

‘Having spent already two years working at HSE University, I can say that I am lucky to be surrounded by such excellent colleagues in our laboratory. Moreover, HSE University organizes several research seminars and conferences, which allow us to expand our networks and secure new international collaborations’.

Dr. Olga Rotar is a Post-Doctoral Fellow at the International Laboratory for Institutional Analysis of Economic Reforms (the HSE University Center for Institutional Studies). Olga

received her PhD in Educational Research (Online Education) at Lancaster University under the supervision of Professor Don Passey, a well-known scholar in the field of Enhanced Learning.

Olga is an educational researcher with a background in Economics and Management. Her research interests lie at the intersection of online education, higher education, the economics of education and social justice. At the Center for Institutional Studies, Olga is working together with Dr. Viktor Rudakov and Dr. Maria Yudkevich on a project focused on the application of MOOCs in Russian higher education, analyzing the phenomenon of precariousness in academia, and facilitating the Center’s collaborations with its international partners.

Dr. Kaspar Piotr Pucek is a Post-Doctoral Fellow at the International Laboratory for Institutional Analysis of Economic Reforms (Center for Institutional Studies). Dr. Pucek received his Ph.D. in History from Princeton University in 2021. His research interests include the divergent outcomes of (post-) communist economic and political reforms in Eurasia, Eastern Europe, and China. He is currently working on a book project on the economic divergence between the USSR/Russia and Poland from the mid-1960s to the mid-2000s through the case study of their passenger car industries.

Dr. Sunday Adesina Kolade is a Post-Doctoral Fellow at the Center for Institutional Studies (CInSt). He received his PhD in Economics at University of Johannesburg in 2018. His research interests centre around bank regulation, bank performance and economic growth in developing countries and emerging markets.

Dr. Nurcan Kilinc Ata is a Post-Doctoral Fellow at the Institute for Economics and Regulation of Natural Monopolies. Dr. Kilinc Ata received her PhD at the University of Stirling. Her

research interests include energy economics, energy policies, energy modeling, and environmental economics. Initially, her work was focused on renewable energy sources, but it has since expanded to include electricity, oil, natural gas, and carbon emission.

Dr. Sanjay Dutta is a Post-Doctoral Fellow at the International Centre of Decision Choice and Analysis. Dr. Dutta received his PhD in Mathematics from KIIT (the Kalinga Institute of Industrial Training) in 2016. His research field is optimization and area of research is decision-making under an uncertain environment, which includes fuzzy programming, stochastic programming and multi-choice programming problems. The areas of application include agriculture, portfolio selection, transportation and supply chain management.

Dr. Alexey Suzdaltsev is a Post-Doctoral Fellow at the International Laboratory of Game Theory and Decision Making (St. Petersburg School of Economics and Management). Dr. Suzdaltsev received his PhD in Business Administration at Stanford University. His research interests are mechanism design and decision-making under uncertainty.

Humanities

Dr. Dmitry Halavach received his PhD in History at Princeton University in 2019. Dr. Halavach has been working for the Institute for Advanced Soviet and Post-Soviet Studies (formerly, the International Centre for the History and Sociology of World War II and Its Consequences) since 2020.

Dr. Daria Khlevnyuk joined the Poletayev Institute for Theoretical and Historical Studies in the Humanities in 2019 and holds a PhD in Sociology from State University of New York at Stony Brook.

'Working at the Higher School of Economics means working in a friendly and stimulating environment and having plenty of opportunities to further one's projects and create new ones. I am glad to continue my postdoctoral research at HSE University, as it allows me to pursue my academic interests and carry out research with talented students.'

Dr. Ezequiel Koile received his PhD in Theoretical Physics at the National University of La Plata in 2015. He has been working for the Linguistic Convergence Laboratory since 2019.

'I find HSE University an excellent place to carry out my research. It has all the facilities of a world-class university, outstanding students and teachers, and an inspiring research environment. I feel very comfortable working in my lab, where collaborations and enriching discussions with my colleagues are usual.'

Dr. Olga Parshina joined the Center for Language and Brain in 2020 and holds a PhD in Psychology from City University of New York.

'I believe that HSE University offers an excellent opportunity to conduct a high-quality research for a competitive salary in such a stunning city as Moscow. Our laboratory has an excellent work ethic, where all of my colleagues are not only experts in what they do, but are also amazing friends who support you from the start. I feel lucky to be a part of the HSE community!'

Dr. Xenia Cherkaev joined the Centre for Historical Research of the School of Arts and Humanities (HSE University in St. Petersburg) in 2020 and holds a PhD in Anthropology from Columbia University in the City of New York.

Dr. Charlotte Wrigley received her PhD at Queen Mary University of London in 2020. Dr. Wrigley has been working for the Laboratory for Environmental and Technological History of the School of Arts and Humanities (HSE University in St. Petersburg) since 2020.

Dr. Veronica Cibotaru is a Post-Doctoral Fellow at the School of Philosophy and Cultural Studies (Faculty of Humanities). Dr. Cibotaru holds a PhD from Sorbonne University and the University of Wuppertal. Her doctoral thesis was dedicated to the question of meaning in the philosophy of Kant and Husserl. Currently, she is conducting research on the phenomenology of religion, French phenomenology and the phenomenology of meaning.

Dr. Ekaterina But is a Post-Doctoral Fellow at the School of Philosophy and Cultural Studies (Faculty of Humanities). Dr. But holds her PhD from the Ohio State University. In her dissertation 'Eutrapelia: Humorous texts in Hellenistic poetry', she considers the semantics and pragmatics of humour in Hellenistic iambic poetry in the context of Greek philosophical teachings on comedy and gelastic practices with the application methodologies developed in contemporary studies of verbal humour and comedic genres. Ekaterina's research interests include the literature and culture of Hellenistic Egypt, reception studies, particularly classical reception in Soviet Russia, Greek theater on the modern stage, Roman verse satire, and Greek and Latin epistolography.

Dr. Mehmet Volkan Kaşıkçı is a Post-Doctoral Fellow at the Institute for Advanced Soviet and Post-Soviet Studies. Dr. Kaşıkçı received his PhD in History from Arizona State University in 2020 where he wrote his dissertation on children and childhood in Kazakhstan in the age of Stalin (which won the Society for the History of Childhood and Youth Dissertation Award). His research focuses on the everyday experiences of Kazakhs and analyzes how they made sense of their lives under the Soviet rule to provide an alternative account of the formation of Soviet identities in the periphery. He pays particular attention to the impact of two great turning points on the lives of formerly nomadic Kazakhs: the famine of 1930-33 and the World War II.

Education

Dr. Anastasia Petrakova joined the Centre for Psychometrics and Measurement in Education of the Institute of Education in 2019 and holds a PhD in Psychology from Humboldt University of Berlin.

Dr. Adam James Gemar received his PhD in Sociology and Social Policy at the University of Durham in 2019. He has been working for the Centre for Cultural Sociology of the Institute of Education since 2019.

Neuroscience

Dr. Vladimir Djurdjevic received his PhD in Cognitive Neuroscience at the International School for Advanced Studies in Trieste in 2018. Dr. Djurdjevic has been working in the Centre for Cognition & Decision Making of the Institute for Cognitive Neuroscience since 2020.

'As a scientist, when considering your next position, you're thinking about two major things - who's going to be your PI (principal investigator) and how the institution where you're going to work can improve your research. In the case of HSE University, the answers to both of these questions were very satisfying - I have a great relationship with my supervisor Matteo Feurra, who is an expert in his field, and the equipment that we work with in our lab is world-class, thus enabling me to be maximally creative in the design of my experiments. I'm really looking forward to continuing my research at HSE University.'

Dr. Rustam Asgarov is a Post-Doctoral Fellow at the International Laboratory of Social Neurobiology (Institute for Cognitive Neuroscience). Dr. Asgarov holds his PhD from the Western Sydney University. His research interests include studies of the neurocognitive mechanisms that support human social behaviour. In particular, he has plans to investigate the neural representations and brain circuitries activated in the social environment through the application of experimental paradigms and fMRI, EEG and MEG techniques. His research findings will contribute to current knowledge about human social perception and learning.

Mathematics

Dr. Filipp Uvarov is a Post-Doctoral Fellow at the Faculty of Mathematics. Dr. Uvarov holds his PhD from Indiana University Purdue University Indianapolis. His research interests are integrable systems and representation theory of Lie algebras and quantum groups.

Dr. Nikhilesh Dasgupta is a Post-Doctoral Fellow at the Laboratory on Algebraic Transformation Groups (Faculty of Mathematics). Dr. Dasgupta received his PhD in Mathematics from the Indian Statistical Institute. His research interests are commutative algebra and affine algebraic geometry. He works on several major research areas of affine algebraic geometry like affine spaces, local nilpotent derivations, exponential maps, and affine fibrations and retracts of polynomial rings.

Dr. Léo Planche is a Post-Doctoral Fellow at the International Laboratory of Statistical and Computational Genomics. He holds his PhD from Paris Descartes University. His research interests include graph theory, particularly in its algorithmic application in DNA reconstruction. He also works on stochastic processes and statistical analysis applied to various biological problems, such as computational genomics and neurosciences.

International and Political Science

Dr. Anna Kuteleva is a political scientist, who joined the School of International Regional Studies of the Faculty of World Economy and International Affairs in 2019. She recently published her first book *China's Energy Security and Relations with Petrostates: Oil as an Idea* and is looking forward to continuing her work at HSE University.

'I love being a part of the vibrant, friendly, diverse, and forever curious HSE community. The stimulating environment here inspires open interactions, discussions, and innovative cross-disciplinary research.'

Dr. Anmol Mukhia received his PhD in International Relations at Jilin University in 2019. Dr. Mukhia has been working for the International Laboratory on World Order Studies and the New Regionalism of the Faculty of World Economy and International Affairs since 2020.

'Within a year, HSE University has impressed me in such a way to see that every researcher finds an opportunity to build their careers comfortably. One of the most attractive programmes, which HSE University offers, is the AWC (Academic Writing Center), which has encouraged, honed, and sharpened my writing skills. I highly recommend everyone to take advantage of it. In addition, the efficiency of administrative operations, the friendly nature of my colleagues, and smiles on every face with positive vibes encourage one to learn more from this cosmopolitan culture. Not only as an academic platform, but the environment here has enchanted my mind and strengthened and broadened my knowledge of Russia and the institution itself.'

Dr. Eriks Varpahovskis received his PhD in Political Science at Hankuk University of Foreign Studies in 2019. Dr. Varpahovskis has been working for the School of International Regional Studies of the Faculty of World Economy and International Affairs since 2020.

'Unfortunately, because of the Covid-19 pandemic, I was only able to enter the Russian Federation in late November 2020 and my cooperation with the department was somewhat limited. However, after arrival, in just under half a year, my collaboration with several colleagues has resulted in various already accomplished and currently ongoing research projects.'

'In addition, during the year, I had a very positive experience working with students as a supervisor. I am expected to begin teaching Master's and Bachelor's courses in September. I am looking forward to working'

with students in both offline and online classrooms. After all, HSE University provides quite stimulating conditions for me to conduct my own research and for professional development. So, to sum up my motivations in choosing HSE University as a place to work are its favorable conditions and my expectations about research and teaching ahead'.

Dr. Paolo Pizzolo is a Post-Doctoral Fellow at the Centre for Comprehensive European and International Studies (Faculty of World Economy and International Affairs). Dr. Pizzolo received his PhD in International Relations from LUISS Free International University for Social Studies. He is member of the Centre for Cooperation with Eurasia, the Mediterranean, and Sub-Saharan Africa (CEMAS) of La Sapienza University of Rome. His research interests are geopolitical theories, Eurasian and Euro-Atlantic geopolitics, nations and nationalisms, and international history.

Dr. Nivedita Kapoor is a Post-Doctoral Fellow at the International Laboratory on World Order Studies and the New Regionalism (Faculty of World Economy and International Affairs). Dr. Kapoor holds a PhD from the Jawaharlal Nehru University. Her research interests are concerned with post-Soviet Russian foreign policy, with a special focus on its strategies in the Asia-Pacific. Her doctorate thesis focused on Russia's policy towards East Asia (1996-2014). Over the past two years, she has further explored these themes in her work at the Observer Research Foundation, a leading Indian think-tank. As changes in the world order transform Eurasia, she wishes to further her research on this dynamic region at HSE University, seeking to understand developments through the lens of Russia's ever-evolving policy.

Legal Studies

Dr. Polina Malkova joined the Institute of National and Comparative Legal Studies of the Faculty of Law in 2019 and holds a PhD in Laws from Chinese University of Hong Kong.

'My journey has led me to a high point in my career- joining HSE University. Starting my third year as a Postdoctoral Fellow at the Faculty of Law, it is interesting to reflect on the reasons why I value and cherish my position here. The most obvious reason is HSE University's top ranking, reputation and history. The less obvious and more personal reason is that it provides a sense of belonging in a vibrant, powerful and leading academic community. In sharing and pursuing research, attending conferences, and communicating with students at HSE University, I feel that my research and work are part of a global educational and academic enterprise'.

Computer Science

Dr. Fedor Pavutnitskiy joined the International Laboratory of Algebraic Topology and Its Applications of the Faculty of Computer Science in 2020 and holds a PhD from National University of Singapore.

Dr. Anand Mahendran is a Post-Doctoral Fellow at the Laboratory of Theoretical Computer Science (Faculty of Computer Science). He received his PhD from Vellore Institute of Technology, Vellore, India. His research interests are formal language, automata theory and bio-inspired computing models. He has completed and submitted several funded projects on theoretical computer science sponsored by various funded agencies like DST-India, DST-MATRICES, Indo-Srilanka, Indo-France, CSIR-India, and VIT-Research Seed Money.

Dr. Sabarathinam Srinivasan is a Post-Doctoral Fellow at the Laboratory of Complex Systems Modeling and Control (Faculty of Computer Science). Dr. Sabarathinam received his PhD from the Department of Nonlinear Dynamics, Bharathidasan University (India). His research interests are nonlinear dynamics, time series analysis, complex systems & control and chaos theory. He is also an expert in mathematical modelling and simulation of complex systems, signal and image processing of various natural and manmade data sets. He is a co-principal investigator of the Indo-Russian project on 'Hidden Complex Systems' (worth 9.6 million roubles).

Dr. Mikhail Lazarev is a Post-Doctoral Fellow at the Laboratory of Methods for Big Data Analysis (Faculty of Computer Science). Dr. Lazarev received his PhD from The Ecole Polytechnique Fédérale de Lausanne (EPFL). His research interests include nanophysics, machine learning and AI, and data science.

Dr. Joás Santiago Grossi is a Post-Doctoral Fellow at the International Laboratory for Supercomputer Atomistic Modelling and Multi-scale Analysis. Dr. Grossi received his PhD in Physics from the National University of San Luis. His research interests are nanowires and metallic glasses. His studies on these topics will involve the use of the well-known Two Temperature Model (TTM), developed almost 50 years ago by Kaganov, Lifshitz and Tanatarov [1]. This model considers the problem of relaxation between electrons and crystalline lattice in non-adiabatic scenarios, thereby allowing for the possibility of understanding the role electrons play in atomic dynamics. The main idea of his research is to understand what kind of influence electrons have on properties such as strength, conductivity and resistivity in non-adiabatic scenarios involving nanowires and metallic glasses, relying on the TTM model.

[1] M.I. Kaganov, E.M. Lifshitz, and L.V. Tanatarov. Relaxation between electrons and the crystalline lattice. Sov. Phys. JETP, 4(2):173–178, 1957.

Dr. Kirill Bryanov is a Post-Doctoral Fellow at the Laboratory for Social and Cognitive Informatics (St. Petersburg School of Social Sciences and Area Studies). Dr. Bryanov received his PhD in Media and Public Affairs from Louisiana State University. His research interests revolve around the effects

of online information consumption on how people think about politics and society. In his previous work, he explored the ways in which news aggregators can shape users' perceptions of social problems' relative importance, as well as the implications of newsfeeds' political personalization of attitudes toward delivery platforms.

Technical Sciences

Dr. Tiago Teixeira Saraiva received his PhD in Physics at Federal University of Pernambuco in 2019. Dr. Teixeira Saraiva has been working for the Quantum Nanoelectronics Laboratory of HSE Tikhonov Moscow Institute of Electronics and Mathematics (MIEM HSE) since 2019.

Dr. Dongyu Liu is a Post-Doctoral Fellow at the School of Electronic Engineering (HSE Tikhonov Moscow Institute of Electronics and Mathematics). Dr. Liu received his PhD in Power Engineering and Engineering Thermophysics from Xi'an Jiaotong University. His research interests include 1. theoretical investigations on solar energy utilization related to electrochemical reactions such as water oxidation and carbon dioxide reduction with density functional theory; 2. nonadiabatic molecular dynamics

simulations on excited state dynamics in solar energy materials and data analysis with the applications of machine learning methods.

Geography and Geoinformation Technology

Dr. Mikhail Rogov is a Post-Doctoral Fellow at the Faculty of Geography and Geoinformation Technology. Dr. Rogov received his PhD in Geography from University of Lausanne. His research interests concern the internalization of Russian cities through global economic networks created through the ownership linkages of major global corporations. In particular, he is interested in studying urban resilience in a multilevel perspective: at the macro level, Dr. Rogov analyzes the embeddedness of cities in global economic networks; on the meso-level, he considers cities as collective entities and, in particular, their economic specialization; and at the micro level, he researches local economic interactions through formal and informal social networks. The empirical focus of this research is on the resilience of Russian cities with respect to the economic crisis of 2014-2016.



New Status Obtained

In 2021, six internationally recruited staff members were appointed as associate professors with tenure. We are happy to congratulate our colleagues on this occasion:

Dr. Alexandra Skripchenko, Faculty of Mathematics;

Dr. Alexandr Buryak, Faculty of Mathematics;

Dr. Attila Kertesz-Farkas, School of Data Analysis and Artificial Intelligence; Faculty of Computer Science;

Dr. Bruno Bauwens, Big Data and Information Retrieval School, Faculty of Computer Science;

Dr. Panagiotis Kompatsiaris, School of Media, Faculty of Communications, Media, and Design;

Dr. Nikolai Ssorin-Chaikov, Department of History, School of Arts and Humanities (HSE Campus in St. Petersburg).

Some of our colleagues shared their feelings and thoughts about their new positions and plans for the future.

Dr. Alexandra Skripchenko, Faculty of Mathematics

How do you feel about being a tenured professor?

I am glad to know that my colleagues think that I move in a right direction as a scientist and as a faculty member.

How will it reflect on your prospective research?

In the meanwhile, I became the dean of the faculty. So, right now the main goal is to learn how to combine research with my quite diversified administrative duties.

At the same time, there not so many people in Moscow working in my field, so I feel responsible for further popularization of mathematics. I will do my best to attract promising scientists

to the faculty in different roles: as visitors, postdocs or faculty staff, and also try to encourage students by my own experience.

What advice can you give to your colleagues who are striving for successful outcome of their tenure review?

Keep calm and do math. Or any other science.

Dr. Bruno Bauwens, Big Data and Information Retrieval School, Faculty of Computer Science

What do you feel about being a tenured professor now?

I like to study anything that is theoretical, find proof and simplify existing knowledge. I decided a long time ago that I would study interesting things over a significant period of time, even if I would not be paid for it. After my PhD studies, I worked part-time for a few years with this idea. This tenure status means that I will not have personal financial worries and I can do research while being connected to HSE University. On one side, I feel very lucky and privileged. On the other side, it is a bit stressful for me. Is it ethical for a tenured person to spend a lot of time on very different small projects, most of which never lead to 'serious' publications? Shouldn't I work on what others consider 'more serious' projects? As usual, the art is finding a healthy balance.

What are your research plans after being conferred this status?

This new stability allows me to hire more PhD students and promise them a stable environment. Otherwise, I am still doing various research projects as before.

What advice can you give to your colleagues who are striving for a successful outcome from their tenure review?

I was mostly overwhelmed in my first years as an assistant professor. What helped me was to remind myself about enjoying meaningful activities. It is OK to read basic books intended for Bachelor's students, or old papers, or to optimize a proof for teaching over the course of a week. When I look back, the time spent on simple tasks allowed me to see complex tasks deeper.

Dr. Alexandr Buryak, Faculty of Mathematics

What do you feel about being conferred this status?

I am of course very happy. Getting a position at this level was my main goal after I finished my PhD. I am particularly happy that I managed to get tenured status at the Higher School of Economics, owing to many reasons: the research level at this institution is extremely high; speaking in terms of teaching, the high quality of the students makes the teaching process smooth and pleasant here. HSE University also offers great support for my research work, and they provide various opportunities for me to support my family. I doubt that there are many universities that can provide all of these advantages simultaneously. So, I view my future work at HSE University with great optimism.

How will it reflect on your prospective research?

This will definitely allow me to focus more on my research. After I finished my PhD, I had to move several times between several universities (and even several countries). This took away a lot of time and effort, which I could devote to my research. Getting tenured status together with the great support that the HSE University provides will allow me to fully focus on my research while also significantly enhancing its quality.

What can you recommend to your colleagues who will be subject to the tenure review process?

Certainly, one should try to do their best in all aspects of an academic career, including research and teaching. In my opinion, there is one more thing that is becoming more and more important nowadays. Mathematics is developing very quickly, and it happens more and more often that people working in one area of mathematics can hardly understand the importance of the results that researchers may obtain in some other area. Therefore, being able to present one's research in an accessible way, depending on the audience, is very important.

Dr. Panagiotis Kompatsiaris, School of Media, Faculty of Communications, Media, and Design

What are your feelings about being conferred this status?

I feel delighted and privileged to be a tenured professor at HSE University, which has been my academic home for the past six years. It is an honour to have my work formally recognized at this level.

You have been teaching HSE students for several years already. What have you learnt from the University over this time?

HSE University has offered me the time and resources to conduct independent research, which is a rare occurrence in the hyper-intensified academia of today. In addition, by becoming a supervisor of the English-taught Master's programme in Critical Media Studies, I have the opportunity to familiarize myself with aspects of higher education learning that I was previously unaware about, ranging from curriculum design to global outreach.

What are your research plans for the future?

I am now writing a monograph on curating practices as it moves from the art world to wider media cultures. Furthermore, I am also co-editing two special journal issues: one on contemporary manifesto writing and another on human-animal relations. In an ideal future, I would like to maintain an open and interdisciplinary focus on my studies, while also continuing to embrace my intellectual curiosity as a prime motivation for research.

As we are having a closer look at MIEM in this issue, Dr. Tiago Teixeira Saraiva from MIEM shares his thoughts about working at HSE University (and life in Moscow).



Breaking Records Every Day!

Tiago Teixeira Saraiva is a Research Fellow at the Quantum Nanoelectronics Laboratory at MIEM HSE. He graduated with a PhD in Physics from the Federal University of Pernambuco in 2018 and joined HSE University in 2019.

Coming from Brazil, how is it for you to be in Moscow?

First, this is a very nice historical city. I used to read about all the revolutions that happened here, as well as about the Second World War, and suddenly I am in the very place that the Nazis tried to invade. This was the furthest the Germans were able to advance and where Russians started to fight back. I think that is quite amazing! For me, it is delightful to be in a place where all of this actually happened. I can go to Park Pobedy and see the eternal flame as the emblem for this victory. Although I am a physicist, I also have an interest in history. I like exploring why things are the way they are.

My story of coming to Moscow and starting to work with Andrey Vasenko, Konstantin Arutyunov and Arkady Shanenko, who are very important and world-renowned scientists, is quite interesting. I am very lucky that Arkady was a professor at the Federal University of Pernambuco in Brazil at the time when I was doing my PhD there. Back then, he had just published a set of equations that described superconductors, which is my specialization in physics. He taught these equations, but there was no solution for them. Once, while giving a seminar about those equations, I tried to find one particular solution. And it worked out. When I showed it to Arkady, he was impressed. That was the start of a very fruitful collaboration, which we've had for years now. He then introduced me to Andrey Vasenko and Konstantin Arutyunov and strongly recommended to come to HSE. I decided to apply for a postdoc position here and was accepted. Fortunately, Arkady also joined the team and we continue collaborating.

Can you tell more about your field (superconductivity)? What are the projects that you are currently working on at MIEM?

Superconductivity, or the ability of certain materials (e.g., mercury, lead or niobium) to conduct electricity without thermal and energy losses, is very practical for engineering. For

instance, when bringing electricity from a remote power plant, a lot of the energy gets lost as cables warm up. It can be saved if the cables are cooled, but it would be much cheaper to make them out of superconducting materials. Superconductors can also expel magnetic fields; you can make something levitate over a magnet with a superconductor. There are already magnetic levitation trains (maglev) in China, South Korea and Japan. Another application is particle acceleration. Protons, for example, can be guided for collision with the application of superconducting traps. Such traps are used in the famous particle accelerator in Switzerland.

What makes superconductors very expensive is that they operate at very low temperatures. Thus, the challenge is to find other materials that can work at higher temperatures. For this reason, at MIEM, we are engineering such materials ourselves. For instance, we are currently developing a superconductor that would work at room temperature. My current research is a proposal to explain how certain materials that scientists have recently discovered work at very high temperatures in comparison to regular superconductors. Moreover, we just published a very important paper on this – 'Robust Superconductivity in Quasi-one-dimensional Multiband Materials'.

We also have a collaboration with an Italian group under Andrea Perali, with whom we published an article on 'Multiband Material with a Quasi-1D Band as a Robust High-Temperature Superconductor' in 2020. We plan to further enhance our collaboration to push the limits of superconductivity because every time someone says 'this is the limit, you cannot go further than this', we manage to break the limits. My first teacher in Brazil used to say 'there is not much hope to go beyond the current values of critical currents and temperatures in superconductors'. Yet, we break records every day! Some scientists were able to produce superconductivity at 15C, and this is room temperature for almost the entire year in Moscow! Such developments will eventually help to improve both society and the country.

Are you involved in any other activities besides research?

At MIEM, I will be presenting a short series of seminars for students on numerical simulations. It is a very tough method for the study of the behaviour of systems whose mathematical models are too complex to provide analytical solutions. Right now, I use it for my research on magnetic configuration inside superconductors and pattern formation. It is interesting that there are equations in physics that work both for superconductors and the colors of animal skin tones. For example, the patterns of fish skin and magnetic profiles in superconductors have the same shape. There is obviously something more to it.

I hope to inspire my students as I guide them through general and advanced information about superconductors, as well as numerical methods. In fact, the mathematical methods that I am using were developed 20 years ago, but I am currently generating results that are just at the forefront of superconductivity research. Although the field has been studied thoroughly – it has seen 110 years of intense publications and many Nobel prizes – we can still push the boundaries and make new discoveries. I am excited and hope to make my students feel the same way.

As you used to teach in Brazil, do you see any difference between students back there and at HSE University?

The difference that I see here in Russia – and that is also applicable to European students – they are much more career-oriented and focused on goals; they have actual things that

they want to do in life. I feel that, in Brazil, people are a little bit more disoriented; their goals are for a shorter period. That is because the country does not have much experience in career development. When you live in a stagnating society, everybody is just going about their daily lives. I was teaching a very basic course on physics to students majoring in mathematics and biology, and they simply didn't care about the subject. They were in university 'just for the diploma', though it could help them to build a meaningful career in their field.

If you could give any advice to other international postdocs coming to HSE University, what would it be?

I would advise them to immediately start learning Russian. This can put them in the Russian universe sooner. I started learning Russian in my second year and it was already too late. Everyone around me was speaking English – secretaries, my boss, people on streets and in bars, but I forced myself to go to Russian courses to break out of my bubble so that I am able to speak to a door attendant or people in the metro.



Special thanks to Ekaterina Sukhanova, Deputy Director of the Centre for International Faculty Support (Office of International Academic Integration, Department of Internationalisation) for preparing the supplement.