

MULTIMEDIA PROCESSING AND TRANSMISSION

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **375 000 RUB**

Programme webpage at the university website:

<https://eng.mipt.ru/programs/electronic-radio-engineering-and-communication-system/>

Programme curator: **Denis Ustyuzhaninov**

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Entry requirements:

- Master's degree / equivalent in a related field
- B2 level of English
- Good track record of publications related to the topic of the intended research
- Strong research proposal 1,500 - 3,500 word

Research supervisor:

[Alexander Dvorkovich](#)

PhD, DSc, Corr. member of RAS

Supervisor's research interests:

- Video compression.
- Audio compression.
- Multimedia wireless transmission.
- Telecommunication systems.
- Quality assessment for multimedia processing and transmission.
- Satellite communications.

Research highlights:

- Practical implementation of new developed algorithms.
- Collaboration with ITU and ITU Academies.

Supervisor's specific requirements:

- Digital signal processing.
- MATLAB.
- C/C++.

Main publications:

- Viktor P. Dvorkovich, Alexander V. Dvorkovich. Theory, Practice and Metrology of Audio-Visual Systems (2 volumes). – Moscow: Technosphera, 2019. – 1396 p. – ISBN 978-5-94836-578-7 [in Russian].
- Alexander V. Dvorkovich, Gennady Yu. Gryzov, Dam Trong Nam, Viktor P. Dvorkovich. The Modified Traditional Motion Compensation Method in Video Compression Applications // 2019 Sixth International Conference on Engineering and Telecommunication – EnT 2019. Proceedings. 20-21 November 2019, Moscow, Russia.

- V.P. Dvorkovich, A.V. Dvorkovich. Synthesis of High-Performance Window Functions Using Minimization of Difference Between Its Waveform and Spectrum // Lecture Notes in Computer Science LNCS 11965. Distributed Computer and Communication Networks. 22nd International Conference, DCCN 2019, Moscow, Russia, September 23-27, 2019. Revised Selected Papers. PP. 151-161.
- Dam Trong Nam, Gennady Yu. Gryzov, Alexander V. Dvorkovich, Viktor P. Dvorkovich. Nonlinear quantization method for wavelet-based video codec // 2018 Fifth International Conference on Engineering and Telecommunication – EnT 2018. Proceedings. 15-16 November 2018, Moscow, Russia, PP. 25-29.
- Alexander V. Dvorkovich, Viktor P. Dvorkovich, Vladimir A. Irtyuga, Kirill S. Mityagin. Field Tests of Digital Terrestrial Multimedia Broadcasting System RAVIS // 2018 Fifth International Conference on Engineering and Telecommunication – EnT 2018. Proceedings. 15-16 November 2018, Moscow, Russia, PP. 3-7.
- Kirill Bystrov, Alexander Dvorkovich, Viktor Dvorkovich, Gennady Gryzov. Usage of Video Codec Based on Multichannel Wavelet Decomposition in Video Streaming Telecommunication Systems // V.M. Vishnevsky et al. (Eds.), Distributed Computer and Communication Networks, 20th International Conference, DCCN 2017, Moscow, Russia, September 25-29, 2017, CSIS 700, PP. 108-119.

Specializations within this programme