

EXPERIMENTAL STUDY OF COMBUSTION AND EXPLOSION IN GASES

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/experimental-study-of-combustion-and-explosion-in-gases/>

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 words

Research supervisor:

[Vladislav Volodin](#)

PhD

Supervisor's research interests:

Acceleration of flame in hydrogen-air and hydrocarbon-air mixtures. Mechanisms of flame instability and their influence on the dynamics of propagation. The interaction of the flame front with obstacles and walls.

Research highlights:

Research is carried out using unique 13Y3 and VBK-2 explosive chambers, allowing large-scale experiments at the Institute.

Supervisor's specific requirements:

- Basic knowledge of hydrodynamics and chemical kinetics.
- Initial skills of experimental work.
- Using software for text design, graphing and data processing.

Main publications:

- V. Golub, A. Korobov, A. Mikushkin, V. Petukhov, V. Volodin, Propagation of a hemispherical flame over a heat-absorbing surface, Proceedings of the Combustion Institute, 2019, vol. 37, 2583–2589.
- V. Golub, A. Elyanov, A. Korobov, A. Mikushkin, V. Petukhov, V. Volodin, Influence of heat absorption on hydrogen-air flame instability, Experimental Thermal and Fluid Science, 2019, vol. 109, 109845.
- A.I. Gavrikov, V.V. Golub, A.Yu. Mikushkin, V.A. Petukhov, V.V. Volodin, Lean hydrogen-air premixed flame with heat loss, International Journal of Hydrogen Energy, 2019, vol. 44, 109845.

Specializations within this programme