

	Name	Illia Petukhov
	Position, Department/Faculty	Associate Professor, Department of Aerospace Thermal Engineering, Faculty of the Aircraft Engines
	Academic Degree, Academic Title	Doctor of Philosophy, Associate Professor
	Email:	i.petukhov@khai.edu
	Scopus Author ID:	7004003523
	Web of Science ResearcherID:	NZO-5428-2025
	ORCID iD:	0000-0002-0645-7912
	Google Scholar:	FUEp7pgAAAAJ https://scholar.google.com.ua/citations?user=FUEp7pgAAAAJ
	ResearchGate:	

EDUCATION:

Basic education (university, major, year of graduation):

Graduated with honors from the National Aerospace University "Kharkiv Aviation Institute" with a degree in "Aircraft Engine" in 1974. Obtained the qualification of a mechanical engineer (degree of Kharkiv Aviation Institute No. У №885888 dated February 20, 1974).

Postgraduate/Doctoral studies:

Candidate of Technical Sciences (Ph.D.) since March 28, 1984. The dissertation was defended on September 30, 1983 in the specialized academic council of Kharkiv Aviation Institute in the specialty 05.14.05. Received diploma TH №069689.

WORK EXPERIENCE:

Professional Career (Workplace, Years, Position):

Illia Petukhov have been working at the National Aerospace University "Kharkiv Aviation Institute" since 1974 to the present. Work experience is 51 years. Illia Petukhov was appointed to the position of Associated Professor of the Aerospace thermal engineering department on December 1, 1994. Order dated 21.11.1994 No. 290-VK.

Teaching Experience:

Teaching experience as of 2025 is 31 years.

Experience in International or National Projects:

1. Scientific manager of International research project P789 "Hydrogen DEMonstrator for Aviation (HYDEA)". HORIZON-JU-Clean-Aviation project HYDEA, (grant agreement No. 101102019) from 2023 to 2027.

2. Scientific manager of International research project "Advanced Modeling Methodology for Hot Environment Bearing Chamber (AMBEC)" of the European Union Framework Program "Horizon 2020" (grant agreement No. 785493) from 2018 to 2023.
3. Project manager of STCU Project UZB-33j "The development of the multiphase jet apparatus for heat regeneration and milk and other food solutions heat processing" from 2002 to 2004.
4. Project manager of STCU Project UZB-35j "The development of the experimental installation for fast freezing of fruits and berries" from 2002 to 2004.
5. Air launch "Svityaz"»
6. "Energija"-"Buran"

RESEARCH ACTIVITIES:

Main Research Areas:

Modeling of thermohydraulic processes in energy systems, processes of heat and mass transfer and fluid dynamics in complex systems, multiphase flows, cryogenic liquids.

Number of Publications (Scopus, WoS, others):

More than 260 publications.

Participation in Scientific Conferences:

1. International conference EASN 14 "Innovation in Aviation & Space towards sustainability today & tomorrow". Thessaloniki, Greece.
2. International conference ASME Turbo Expo 2021 Turbomachinery. Technical Conference and Exposition GT2021.
3. International conference EASN 11. IOP Conf. Series: Materials Science and Engineering.
4. XIV International Symposium on Air Breathing Engines, Florence, Italy, Sept. 5-10, 1999
5. International Propulsion Engineering Congress. KhAI. Kharkiv.
6. International conference "Integrated Computer Technologies in Mechanical Engineering ICTM". KhAI. Kharkiv.
7. Power Plants and Alternative Energy Sources". KhPI. Kharkiv
8. International Conference "Power Plants and Alternative Energy Sources 2025" KhNADU. Kharkiv.
9. International Scientific and Technical Conference "Energy and Heat Engineering Processes and Equipment". KhPI. Kharkiv.
10. VIII International Scientific and Technical Conference "Current State and Problems of Engine Engineering" Mykolaiv.
11. Scientific and Technical Conference "Computer Modeling in High-Intensity Technologies". Karazin National University, Kharkiv.
12. International Scientific and Technical Conference "Modern Problems of Refrigeration Engineering and Technology", Odessa.

TEACHING ACTIVITIES:

Courses Taught:

- Technical thermodynamics;
- Heat and mass transfer;
- Thermodynamics and Heat Transfer;
- Cryogenic fuel technology;
- Refrigeration and conditioning;
- Substances thermophysical properties;





- Design and calculation of non-traditional thermal power plants.

Author Courses, Academic Programs:

- Cryogenic fuel technology;
- Refrigeration and conditioning;
- Substances thermophysical properties;
- Design and calculation of non-traditional thermal power plants.

Methodological Materials, Textbooks:

1. Соловей В.В. Водень - екологічно чистий енергоносіє. Навчальний посібник. / В.В.Соловей, А.В. Бастєєв, В.В. Форфутдінов, І.І.Петухов - Харків, Нац. аерокосм. ун-т, «ХАІ», 2003. – 56 с.
2. Амброжевич М. В. Термодинамика и теплообмен. Учебное пособие по выполнению расчётных работ нормативной дисциплины бакалаврата «Авиация и космонавтика». / М. В. Амброжевич, О. Н. Костиков, И. И. Петухов. – Х.: Нац. аэрокосм. ун-т «ХАИ», 2008. – 79 с.
3. Костиков О. Н. Термодинамика и теплообмен. Лабораторный практикум по нормативной дисциплине бакалаврата «Авиация и космонавтика». / О. Н. Костиков, И. И. Петухов. – Х.: Нац. аэрокосм. ун-т, «ХАИ», 2008. – 64 с.
4. Петухов И. И. Холодильная техника и кондиционеры. Учебное пособие по лабораторному практикуму. / И. И. Петухов, Т.П. Михайленко, Д.В. Поздняков, А.Ю Лисица. – Х.: Нац. аэрокосм. ун-т, «ХАИ», 2008. – 56 с.
5. Петухов, И.И. Теплофизические свойства веществ: учеб. пособие / И.И. Петухов, Т.П. Михайленко. – Х.: Нац. аэрокосм. ун-т «Харьк. авиац. ин-т», 2010. – 180 с.

GRANTS AND PROJECTS:

Participation in International and National Projects:

1. International research project P789 "Hydrogen DEMonstrator for Aviation (HYDEA)". HORIZON-JU-Clean-Aviation project HYDEA, (grant agreement No. 101102019) from 2023 to 2027.
2. International research project "Advanced Modeling Methodology for Hot Environment Bearing Chamber (AMBEC)" of the European Union Framework Program "Horizon 2020" (grant agreement No. 785493) from 2018 to 2023.

PROFESSIONAL ACHIEVEMENTS AND AWARDS:

Distinctions, Awards, Prizes:

1. Award "Icarus KhAI".

Membership in Professional Associations:

1. Member of the one-time specialized academic council for the degree of Doctor of Philosophy. National Aerospace University KhAI.

SELECTED PUBLICATIONS:

Key Articles (Scopus, WoS, others):

1. Petukhov I., Lysytsia O., Mykhailenko, T., Kovalov A. Specific Aspects of Modelling Heat and Mass



Transfer During Condensed Phase Precipitation on Heat Exchanger Walls. Eng. Proc. 2025, 90, 84. <https://doi.org/10.3390/engproc2025090084> SCOPUS.

2. Petukhov I., Parafeinyk P., Lysytsia O. Novel Approach to Estimate the Efficiency of Real Gas Compression Process in Uncooled Centrifugal Compressor. ICTM 2024, LNNS 1474, pp. 1–12, 2025. https://doi.org/10.1007/978-3-031-94852-7_27. SCOPUS.

3. Mykhailenko T., Lysytsia A., Petukhov I. and Kovalov A. Specific aspects in numerical simulation of complex processes in gas turbine engine bearing chamber. 11TH-EASN. IOP Conf. Series: Materials Science and Engineering 1226 (2022) 012038. P. 1-8. DOI: 10.1088/1757-899X/1226/1/012038. SCOPUS.

4. Petukhov I., Mykhailenko T., Lysytsia O., Kovalov A. Study of oil film heat transfer in gas turbine engine bearing chamber. Proceedings of the ASME Turbo Expo 2021 Turbomachinery Technical Conference and Exposition GT2021. P. 1-11. <https://doi.org/10.1115/GT2021-58964>. SCOPUS.

5. Illia Petukhov, Taras Mykhailenko, Sergiy Yepifanov, Oleg Shevchuk (2020). STUDY ON ACCURACY OF HEAT TRANSFER COEFFICIENT DETERMINATION IN THE BEARING CHAMBER FOR GAS TURBINE ENGINE. Proceedings of the ASME Turbo Expo 2020, GT2020-14304. Scopus.

6. Douaissia Omar Hadj Aissa, Lysytsia O., Mykhailenko T., Petukhov I. CFD modeling of multiphase flows in the gas-turbine engines oil cavities. Eastern-European Journal of Enterprise Technologies. – 2020. – № 2/5 (104). – P. 12–20. <https://doi.org/10.15587/1729-4061.2020.198328>. SCOPUS.

Books, Chapters in Collective Monographs:

Links to Citation Database Profiles:

Scopus Author ID: 7004003523

Web of Science Researcher ID: NZO-5428-2025

ORCID iD: 0000-0002-0645-7912

Google Scholar: FUEp7pgAAAAJ

<https://scholar.google.com.ua/citations?user=FUEp7pgAAAAJ>

ResearchGate:

ADDITIONAL INFORMATION:

Language Proficiency:

Ukrainian language - fluently.

IT Skills:

1. Fortran Program

Social and Community Activities:

1. Scientific research with students.

2. Scientific research