Artem Skrypnik
skrart555@gmail.com
+49 351 463-43006

Contact details
Helmholtzstr. 14,
TU Dresden,
MER K11
01069 Dresden
Germany

Dr.-Ing. Artem Skrypnik

About Me Nowadays I am working as a PostDoc at the Chair of Transport processes at interfaces, Institute of Process Engineering and Environmental Technology, TUD Dresden University of Technology, Germany.
Email address: artem.skrypnik@tu-dresden.de

Working Experience

May 2021– Present, *PostDoc*
Emmy-Noether Research Group — Towards Fluid Dynamics of Foam and Froth (group of Dr.-Ing. S. Heitkam)

Responsibilities:
- X-Ray / Neutron radiography of foam
- Characterization of foam flows using optical measurements

September 2019– April 2021, *Vice dean*
Institute for Aviation, Land Transportation and Power Engineering, KNRTU-KAI

Responsibilities:
- Educational activities;
- Master programs
- **Coordinator** for double diploma master program, "Chemical and Energy Engineering In German Russian Institute of Advanced Technologies

February 2019– Present, *Research Fellow*, Laboratory of Modelling Physical-Technical Processes
Responsibilities:
- Experimental and numerical research of various types heat transfer intensifiers

September 2017 – January 2019, *Assistant*, Laboratory of Modelling Physical-Technical Processes
Responsibilities:
- Experimental and numerical research of various types heat transfer intensifiers
- Laboratory and practice works for students

May 2014 – September 2016, *Assistant in laboratory of Modelling Physical-Technical Processes*

Research Experience

2021-Present, *Emmy-Noether Research Group Towards Fluid Dynamics of Foam and Froth*
Project member:

- Application of X-ray and Neutron radiography for studying the dynamics of flowing foam.

2022-2023, *Multiple research campaigns at Paul Scherrer Institute PSI, Switzerland*

- Neutron radiography of flowing and static foams.

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2019-2021, *Grant from Russian Foundation for Basic Research for young scientists in cooperation with Belarus Republic :*

Team Leader:

- Heat transfer enhancement by forced and mixed inhomogeneous gas convection in finned tube bundles

2017-2019, *Grant from Russian Foundation for Basic Research for young scientists in cooperation with Belarus Republic*

Project member:

- Experimental investigations of the heat transfer (natural convection, advection) for the flow and heat transfer in the ducts with heat-release surfaces with micro- and macro-reliefs including heat-release surfaces produced by deformational cutting method

2016, *Federal Special Purpose Program "Research and development in priority areas of Russian scientific and technological complex for 2014-2020*

- Engineer

2015-2017, *Grant from Russian Foundation for young scientists*

Team Leader:

- Experimental and numerical studies of hydraulic resistance and heat transfer at swirling flows over the surface in tubes.

2013-2016, *Grant from Russian Foundation for Basic Research*

Project member:

- Investigations of thermal-hydraulic efficiency of heat exchangers with different types of intensifiers

Teaching Experience

2022-2024,

Lab-course: Flotation (3h)

2021, Fall

Introduction to Matlab, Master Course

2019-2021

Design of power generation systems, Bachelor/Master Course

2018-2021

Practical &Lab-course:Introduction to Heat and Mass transfer, Bachelor Course

2018-2021

Practical &Lab-course: Power and energy plants, Bachelor/Master Course

2029-2021

Practical course: Advanced Heat transfer, Bachelor Course

Education

09.2011-07.2015 , KNRTU-KAI

Bachelor of Power and Energy Engineering
With Honors, Grade Point Average: 5.0 ('A' in ECTS)

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01.09.2015-07.08.2017, Otto von Guericke University, Magdeburg
Master of Science, (Average grade 1.3)-"Numerical simulation of energy transfers in a helically-corrugated pipe heat exchanger"
Faculty of Process and Systems Engineering course of study: Chemical and Energy Engineering
Double diploma program.

01.10.2017-30.09.2020, Doctoral Thesis, PhD, KNRTU-KAI
"Hydraulic resistance and heat transfer for a single-phase flow in pipes with inner helical finning"

Conference talks

EU FOAM2024
30 June – 04 July, 2024, Dresden, Germany

Neutron radiography of liquid foam structure near a vertical wall
A. Skrypnik, L. Knüpfer, P. Trtik, V. Tholan, S. Parkes, S. Heitkam

29. Fachtagung „Experimentelle Strömungsmechanik“
6-8 September 2022, Ilmenau, Germany

Neutron radiography of anisotropic drainage flow
A. Skrypnik, P. Trtik, K. Cole, T. Lappan, K.Eckert, S. Heitkam

EU FOAM2022
3rd – 6th July, 2022, Krakow Poland

Measurement of anisotropic drainage in liquid foam using neutron radiography
A. Skrypnik, P. Trtik, K. Cole, T. Lappan, K.Eckert, S. Heitkam

Modern Problems in Heat Transfer and Thermal Engineering
19 – 23 October 2020, Moscow, Russia

Application of the artificial neural networks to predict heat transfer performance of tubes with inner helical finning
A. Skrypnik, I. Popov

Language Skills

English — *fluent*

German — *C1 (TestDaF)*

Russian — *Native speaker*

Skills

Python, MatLab, Star-CCM+, Ansys Fluent, Latex, PIV, PTV, Image analysis

Publications

ORCID
0000-0002-3472-3421

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Selected Peer Reviewed publications

1. **Skrypnik, A.**, Cole, K., Lappan, T., Brito-Parada, P.R., Neethling, S.J., Trtik, P., Eckert, K., Heitkam, S., 2024. Neutron radiography of an anisotropic drainage flow. Phys. Rev. E 109, 014609.
2. **Skrypnik, A.**, Heitkam, S., Gerstenberg, C., Morelle, E., McHardy, C., Rauh, C., 2024. Optical measurement of the shear stress and velocity distribution in an idealized deglutition process. Journal of Food Engineering 365, 111849.
3. **Skrypnik, A.**, Knüpfer, L., Trtik, P., Tholan, V., Parkes, S., Heitkam, S., 2023. Neutron radiography of liquid foam structure near a vertical wall. Soft Matter 19, 8552–8560.
4. **Skrypnik, A.N.**, Shchelchkov, A.V., Gortyshov, Yu.F., Popov, I.A., 2022. Artificial neural networks application on friction factor and heat transfer coefficients prediction in tubes with inner helical-finning. Applied Thermal Engineering 206, 118049.
5. Zaripov, D., Li, R., Lukyanov, A., **Skrypnik, A.**, Ivashchenko, E., Mullyadzhanov, R., Markovich, D., 2023. Backflow phenomenon in converging and diverging channels. Exp Fluids 64, 9.
6. Mironov, A.A., Isaev, S.A., Popov, I.A., Aksyanov, R.A., **Skrypnik, A.N.**, 2020. Improving the Efficiency of Aircraft Heat Exchangers. Russ. Aeronaut. 63, 147–154.
7. Mironov, A., Isaev, S., **Skrypnik, A.**, Popov, I., 2020. Numerical and Physical Simulation of Heat Transfer Enhancement Using Oval Dimple Vortex Generators—Review and Recommendations. Energies 13, 5243.

Sphere of interest

X-Ray&Neutron radiography
Fluid dynamics of a foam flow

Foam physics
Physical aspects of foams

PIV/PTV
Particle Image and Tracer Velocimetry

Neural networks
Artificial intelligence in engineering

Heat transfer
Thermal performance of heat augmentation techniques

Rheology