

Darya S. Loenko (Bondarenko)

Laboratory on Convective Heat and Mass Transfer, Tomsk State University
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EDUCATION

- 2020 Ph.D. student
Specialization “A thermogravitational convective heat transfer in power-law fluid in areas with heat sources”
at Tomsk State University, Russia
- 2020 Master’s degree in Fluid Mechanics, Tomsk State University,
Russia
- 2018 Bachelor’s degree in Fluid Mechanics, Tomsk State University,
Russia

APPOINTMENTS

- 2018-Present Specialist in educational and methodical work, Department of
Theoretical Mechanics, Tomsk State University
- 2017-Present Laboratory assistant of the Laboratory on Convective Heat and
Mass Transfer, Tomsk State University

AREAS OF INTEREST

Natural convection
Heat and mass transfer in non-Newtonian fluid
Numerical analysis
Heat transfer and flow pattern in electronics systems
Computational fluid dynamics

AWARDS

- Diploma of the II degree for the report at the XV International Scientific and Practical Conference of Students: Youth and modern information technology Postgraduates and Young Scientists, Tomsk, Russia, 2017.
- Diploma of the II degree for the report at the All-Russian Youth Scientific Conference: All sides of mathematics and mechanics, Tomsk, Russia, 2018.
- Diploma of the I degree for the report at the XVI International Scientific and Practical Conference of Students: Youth and modern information technology Postgraduates and Young Scientists, Tomsk, Russia, 2018.
- Diploma of the II degree for the report at the XVI International conference of students, graduate students and young scientists: Prospects for the development of fundamental sciences, 2019.
- Diploma of the I degree for a report at the International scientific and technical conference of students, postgraduates and young scientists: Scientific Session of TUSUR, 2019.
- Diploma of the III degree for the report at the XVII International conference of students, graduate students and young scientists: Prospects for the development of fundamental sciences, 2020.
- Winning the Potanin Foundation Scholarship Competition, 2019.
- Winner of the competition for the award of the Tomsk region in the field of education, science, health and culture for students, 2019.
- Winner of the competition for the scholarship of the President of the Russian Federation for students, 2019/2020 and 2021/2022.
- Laureate of the first degree scholarship of the municipal formation "City of Tomsk" for the 2019/2020 academic year.
- Diploma of the II degree for the best report at the All-Russian conference with elements of a scientific school for young scientists "XXXVII Siberian Thermophysical Seminar", 2021.

- Diploma of the I degree for the report at the XIX International conference of students, graduate students and young scientists: Prospects for the development of fundamental sciences, 2022.
- The winner of the competition for the scholarship of the Government of the Russian Federation in priority areas of development in two semesters of 2022.

PUBLICATIONS

Journal papers

1. Bondarenko D.S., Sheremet M.A., Oztop H.F., Ali M.E., (2019) Natural convection of Al₂O₃/H₂O nanofluid in a cavity with a heat-generating element. Heatline visualization, *Int. J. Heat Mass Transfer*, 130: 564-574.
2. Bondarenko D.S., Sheremet M.A., Oztop H.F., Abu-Hamdeh N., (2019) Mixed convection heat transfer of a nanofluid in a lid-driven enclosure with two adherent porous blocks, *Journal of Thermal Analysis and Calorimetry*, 135(2): 1095-1105.
3. Bondarenko D.S., Sheremet M.A., Oztop H.F., Ali M.E., (2019) Impacts of moving wall and heat-generating element on heat transfer and entropy generation of Al₂O₃/H₂O nanofluid, *Journal of Thermal Analysis and Calorimetry*, 136(2): 673-686.
4. Loenko D.S., Shenoy A., Sheremet M.A., (2019) Natural convection of non-newtonian power-law fluid in a square cavity with a heat-generating element, *Energies*, 12: 2149.
5. Loenko D. S., Sheremet M. A., (2019) Convective heat transfer of power-law fluid in a cavity with a heat source of time-dependent volumetric heat generation, *Bulletin of Perm University. Physics*, 4: 44–50.

6. Loenko D. S., Shenoy A., Sheremet M. A., (2020) Numerical modeling of the natural convection of a non-Newtonian fluid in a closed cavity, *Computer Research and Modeling*, 12(1): 59–72.
7. Loenko D. S., Sheremet M. A., (2020) Influence of the chamber inclination angle and heat-generating element location on thermal convection of power-law medium in a chamber, *International Journal of Numerical Methods for Heat & Fluid Flow*, 31(1): 134-153.
8. Loenko D. S., Shenoy A., Sheremet M. A., (2021) Effect of time-dependent wall temperature on natural convection of a non-Newtonian fluid in an enclosure, *International Journal of Thermal Sciences*, 166: 106973.
9. Loenko D. S., Sheremet M. A., (2021) Regularization models for natural convection of a pseudoplastic liquid in a closed differentially heated cavity. *Bulletin of Perm University. Physics*, 3, Pp. 13-22.
10. Loenko D. S., Shenoy A., Sheremet M. A., (2021) Thermogravitational convection of power-law nanofluid in a cavity with a heat-generated section on the bottom wall, *Math Meth Appl Sci.*, ahead-of-print, <https://doi.org/10.1002/mma.7852>
11. Loenko D. S., Oztop H. F., Sheremet M. A., (2022) Thermogravitational convection of a pseudoplastic nanofluid with varying parameters in an enclosure having a thermally generating wall section, *Z Angew Math Mech.*, ahead-of-print, <https://doi.org/10.1002/zamm.202200199>

Conference Proceedings

1. Bondarenko D.S, Sheremet M.A. Natural convection of non-Newtonian fluid in a closed cavity, In: Youth and modern information technology: Proceedings of the XV International Scientific and Practical Conference of Students, Postgraduates and Young Scientists (Tomsk, Russia, December 4-7, 2017), Pp. 27-28.

2. Bondarenko D.S, Sheremet M.A. Free convection of a power law fluid in a closed cavity in the presence of a local energy source, In: All-Russian Youth Scientific Conference “All sides of mathematics and mechanics”: Book of abstracts (Tomsk, Russia, April 24-28, 2018), Pp. 47-48.
3. Bondarenko D.S, Sheremet M.A. Free convection of a power law fluid in a closed cavity in the presence of a local energy source, In: All-Russian Youth Scientific Conference “All sides of mathematics and mechanics”: Proceedings (Tomsk, Russia, April 24-28, 2018), Pp. 47-53.
4. Bondarenko D.S, Sheremet M.A. Natural convection of a power law fluid in a cavity with a heat-generating energy source, In: All-Russian Conference on Mathematics and Mechanics, dedicated to the 140th anniversary of Tomsk State University and the 70th anniversary of the Faculty of Mechanics and Mathematics: Book of abstracts (Tomsk, Russia, October 2-4, 2018), Pp.120-121.
5. Bondarenko D.S, Sheremet M.A. Mathematical modeling of the thermogravitational convection of a non-Newtonian liquid in a closed cavity with a heat-generating energy source, In: Youth and modern information technology: Proceedings of the XVI International Scientific and Practical Conference of Students, Postgraduates and Young Scientists (Tomsk, Russia, December 3-4, 2018), Pp. 34-35.
6. Loenko D. S., Sheremet M. A. Study of the influence of the cavity inclination angle on the modes of thermogravitational convection of a power-law fluid at the presence of a heat-generating element, In: All-Russian Youth Scientific Conference “All sides of mathematics and mechanics”: Book of abstracts (Tomsk, Russia, April 23-27, 2019), Pp. 58.
7. Loenko D. S., Sheremet M. A. Effect of heat-generation source location on the thermo-gravitational convection of a power law fluid in an enclosure, In: XVI International conference of students, graduate students and young scientists: Prospects for the development of fundamental sciences: Proceedings (Tomsk, Russia, April 23-26, 2019), Pp. 62-64.

8. Loenko D. S., Sheremet M. A. Thermogravitational convection of a power-law liquid in a cavity with a heat-generating element, In: Collection of selected articles of the scientific session of TUSUR (Tomsk, Russia, May 22-24, 2019), Pp. 78-81.
9. Loenko D. S., Sheremet M. A. Numerical analysis of non-stationary regimes of natural convection of a power-law liquid in a closed cavity taking into account the dependence of wall temperature on time, In: Youth and modern information technology: Proceedings of the XVII International Scientific and Practical Conference of Students, Postgraduates and Young Scientists (Tomsk, Russia, February 17-20, 2020), Pp. 103-104.
10. Loenko D. S., Sheremet M. A. Mathematical simulation of natural convection of power-law nanofluid in a closed cavity, In: XVII International conference of students, graduate students and young scientists: Prospects for the development of fundamental sciences: Proceedings (Tomsk, Russia, April 21-24, 2020), Pp. 48-50.
11. Loenko D. S., Sheremet M. A. Investigation of thermogravitational convection of a power-law nanofluid in a cavity in the presence of a heat-generating section of the bottom wall, In Modern problems of mechanical engineering: collection of works of the XIII International scientific and technical conference (Tomsk, Russia, October 26-30, 2020), Pp. 202-203.
12. Loenko D. S., Sheremet M. A. Influence of nanoparticles material and volume fraction on non-Newtonian nanofluid natural convection in a square cavity with a local heater, In Problems of gas dynamics and heat and mass transfer in power plants: Abstracts of the XXIII School-seminar of young scientists and specialists under the guidance of acad. RAS A.I. Leontief (Yekaterinburg, Russia, May 24-28, 2021), Pp. 46-47.
13. Loenko D. S. Regularization techniques in natural convection problems for power-law non-Newtonian fluid circulation in a differentially-heated cavity, In Prospects for the development of fundamental sciences: collection of works XVIII International Conference of Students, Postgraduates and Young Scientists (Tomsk, Russia, April 27–30, 2021), Pp. 58-60.

14. Loenko D. S., Sheremet M. A. Natural convection of a pseudoplastic nanofluid in a square cavity with a fuel element, In All-Russian Conference of Young Scientists in Mechanics YSM-2021: abstracts (Sochi, Russia, September 3-12, 2021), Pp. 92.
15. Loenko D. S., Sheremet M. A. Natural convection of a pseudoplastic nanofluid in a square cavities in the presence of two heat-generating energy sources, In XXXVII Siberian Thermophysical seminar: Abstracts Of The All-Russian Conference with elements of a scientific school for young scientists (Novosibirsk, Russia, September 14-16, 2021), Pp. 203.
16. Loenko D. S., Sheremet M. A. Influence of radiator fin height on natural convection of pseudoplastic nanofluid in cavity with heater, In Actual problems of applied mathematics, informatics and mechanics: Proceedings of the International Scientific Conference (Voronezh, Russia, December 13–15, 2021), Pp. 580-583.
17. Loenko D. S., Sheremet M. A. Influence of a ribbed structure on the pseudoplastic nanofluid thermogravitational convection in a cavity with a heat-generated element, In Proceedings of CONV-22: Int. Symp. on Convective Heat and Mass Transfer, (Turkey, June 5 – 10, 2022), Pp. 659-666.
18. Loenko D. S., Sheremet M. A. Effect of Nanoparticle Material on Thermogravitational Convection of a Pseudoplastic Nanofluid in a Cavity with a Heat-Conducting Substrate and a Source of Variable Heat Release, In XXXVIII Siberian Thermophysical seminar: Abstracts Of The All-Russian Conference with elements of a scientific school for young scientists (Novosibirsk, Russia, August 29-31, 2022), Pp. 146.
19. Loenko D. S., Sheremet M. A. Numerical simulation of natural convection of a pseudoplastic nanofluid in a cavity with a local heater and porous ribs, In All-Russian Conference of Young Scientists in Mechanics YSM-2021: abstracts (Sochi, Russia, September 4-14, 2022), Pp. 96.
20. Loenko D. S., Sheremet M. A. Analysis of the effect of the position of the source of volume heat release in a closed cavity filled with pseudoplastic nanofluid on the intensity of free convective heat transfer, In Proceedings of the Eighth Russian

National Conference on Heat Transfer (Moscow, Russia, October 17–22, 2022): in 2 vols. V.1, Pp. 142-143.

21. Loenko, D.S., Sheremet, M.A. (2023). Natural Convection of CMC/Water Mixture and Alumina Nanoparticles in a Cavity with Two Isoflux Heaters. In: Banerjee, J., Shah, R.D., Agarwal, R.K., Mitra, S. (eds) Recent Advances in Fluid Dynamics. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-19-3379-0_2