

# Prof. G. Gigineishvili

## Publications

### Monograph

1. Magrakvelidze T., Gigineishvili G., Lomidze Kh., Mikashavidze A., Koberidze T. Intensification of Heat Transfer by the Method of Artificial Roughness at a Liquid Film Flowing Down a Vertical Surface. Tbilisi: "Technical University", 2023, 191p.

### Articles

1. Gigineishvili G., Magrakvelidze T., Mikashavidze A., Koberidze T., Lomidze Kh., Makrakhidze L. Influence of the Shape of Two-Dimensional Roughness on Heat Transfer when a Water Film Flows Along the Outer Surface of a Vertical Pipe. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2023, №27, pp. 64-69.

2. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Influence of the Prandtl number on heat transfer at liquid film flows down smooth and rough surfaces. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2022, №26, pp. 43-48.

3. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Influence of the relative step of two-dimensional roughness on the power required for mixing in the apparatus with a stirrer. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2022, №26, pp. 43-48.

4. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Influence of the Type of Roughness on the Intensification of Heat Transfer During the Water Film Flow. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2021, №25, pp. 67-73.

5. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Influence of Vertical Surface Roughness on Heat Transfer Under Conditions of Water Film Flow. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2020, №24, pp. 51-55.

6. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. The effect of the height of the roughness elements on the intensification of heat transfer at water film flow on a vertical pipe. Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2019, №23, pp. 60-64.

7. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Heat Transfer During Runoff of Water Film on External Smooth and Rough Surfaces of Vertical Pipe. 2019, "Energy", №2(90), pp. 35-40.

8. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. The Effect of Combined Roughness on Heat Transfer During the Flow of a Water Film on a Vertical Surface.

Proceedings of A. Eliashvili Institute of Control Systems of the Georgian Technical University, 2018, №22, pp. 60-64.

9. Machavariani E., Gigineishvili G., Ksovreli N. Research of Speed of Movement of the Plate Under Influence of Boiling Reactive Force. Works of GTU, 2016, №2(500), pp. 83-88.

10. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D., Meparishvili M. Boiling – the Special Case of Convective Heat Transfer. Proceedings of the A. Eliashvili Institute of Control Systems of GTU, 2014, №18, pp. 90-96.

11. Shekrladze I., Rusishvili J., Gigineishvili G., Shekrladze D. Results of Experimental Study of Boiling Heat Transfer Multifactoring. "Energy", 2011, №2(58), pp. 41-44.

12. Shekrladze I., Rusishvili J., Gigineishvili G., Shekrladze D. Modern State and Prospects of Research of Boiling Heat Transfer Multifactoring. "Energy", 2009, №4(52), part 2, pp. 56-59.

13. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Conception of Multifactoring of Heat Transmission at Boiling. "Energy", 2009, №2(50), part 2, pp. 14-18.

14. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Flat-Plate Collector with Solar Powered Pump and Problem of Boiling on Downward-Facing Surface. WSAS Transactions on Heat and Mass Transfer, 2009, Issue 4, Volume 4, p.108-117.

15. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Boiling of Liquid Wetting Open Capillary Grooves of Heating Surface. IASME Transactions, 2005, Issue 9, Volume 2, p.1762-1770.

### **International Conferences:**

1. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Influence of the Prandtl Number on Heat Transfer at Liquid Film Flows Down Smooth and Rough Surfaces. Proceedings of the 8th Thermal and Fluids Engineering Conference (TFEC), University of Maryland, College Park, MD, USA, 2023, Paper No. TFEC-2023-45749, (Indexed in Scopus).

2. Magrakvelidze T., Gigineishvili G., Mikashavidze A., Koberidze T., Lomidze Kh. Intensification of Heat Transfer by the Method of Artificial Roughness at a Water Film Flows down on Vertical Pipe. Proceedings of the 9th International Conference on Fluid Flow, Heat and Mass Transfer (FFHMT'22), Niagara Falls, Canada, 2022, Paper No. 160, (Indexed in Scopus).

3. Machavariani E, Gigineishvili G., Jikhvadze M., Ksovreli N. Results of Video Recording of the Action of Reactive Forces on the Heating Surface in the Process of Liquid Boiling. Proceedings of the III International Scientific and Technological Conference - "Modern problems of power engineering and ways of solving them", Tbilisi, Georgia, 2021, "Energy", №2(98), part I, pp. 145-148.

4. Machavariani E, Gigineishvili G., Jikhvadze M., Ksovreli N. Water Pump Operating by Evaporate condensation Processes of the Working Fluid. Proceedings of the I International Scientific and Technological Conference - "Modern problems of power engineering and ways of solving them", Tbilisi, Georgia, 2019, "Energy", №3(91), part II, pp. 90-92.

5. Shekrladze I., Machavariani E., Gigineishvili G., Shekrladze D. Steam Engine-Pump with Percussive Boiling. Proceedings of the 2<sup>nd</sup> Thermal and Fluid Engineering Conference (TFEC 2017). 2017, Las Vegas, NV, USA.
6. Steam Engine-Pump for Solar Collector – Based Hot Water Supply. Presentation on the International Conference of Solar Heating and Cooling for Buildings and Industry, 2015, Istanbul, Turkey.
7. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Meparishvili M. Solar-Powered Innovative Water Pump. Proceedings of the II International Scientific Conference - "Energy: Regional Problems and Development Opportunities", 2013, Kutaisi, Georgia, pp. 111-116.
8. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Ezugbaia L. Pumping Effect of Growing Bubble: To Overcome Decades of Neglect and Silencing. Proceedings of the International Scientific Conference Dedicated to the 90<sup>th</sup> Anniversary of Georgian Technical University - Basic Paradigms in Science and Technology Development, 2012, Tbilisi, Georgia, pp. 248-258.
9. Shekrladze I., Rusishvili J., Gigineishvili G., Shekrladze D. Investigation of Duration-Dependent Multifactoring During Boiling on Down-Facing Heating Surface. Proceedings of the 14<sup>th</sup> International Heat Transfer Conference (IHTC14-23386), 2010, Washington, DC, USA.
10. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Solar-Powered Water Pump and Related Problem of Boiling on Downward-Facing Surface. Proceedings of the 9<sup>th</sup> WSEAS/IASME International Conference on Electric Power Systems, High Voltages, Electric Machines, 2009, Genova, Italy, pp. 40-45.
11. Shekrladze I., Machavariani E., Gigineishvili G., Rusishvili J., Shekrladze D. Boiling Heat Transfer on Grooved Capillary Surfaces. Proceedings of the 3<sup>rd</sup> IASME/WSEAS International Conference on Heat Transfer, Thermal engineering and Enviroment, 2005, Corfu, Greece, pp. 283-287.

### **Textbooks and Manuals**

1. Gigineishvili G., Machavariani E., Robakidze L., Rusishvili J. Non-Conventional and Renewable Sources of Energy. Tbilisi, "Technical University", 2006, 98p.
2. Rusishvili J., Gigineishvili G., Robakidze L. Methodological instructions for performing laboratory work in the course of experimental thermal physics. Tbilisi, "Technical University", 2006, 64p.