

DR. IPEK AYTAC

University of Turkish Aeronautical Association / Bahçekapi Quarter /Okul St. / No:11 / 06790 /
Etimesgut / Ankara / Turkey | iaytac@thk.edu.tr



EDUCATION

- 2003-2006 **High School**, Gazi University Foundation Private Science High School, Ankara, Turkey.
- 2006-2011 **B.Sc.**, Baskent University, Faculty of Engineering, Mechanical Engineering, Ankara, Turkey.
- 2012-2014 **M.Sc.**, Gazi University, Faculty of Technology, Energy Systems Engineering Department, Ankara, Turkey.
Thesis Title: Heat Transfer Performance Enhancement by Using Alumina Nanofluid in the Parallel and Cross-Flow Concentric Tube Heat Exchangers
Supervisor: Prof. Dr. Adnan SÖZEN
- 2016-2020 **Ph.D.**, Gazi University, Faculty of Technology, Energy Systems Engineering Department, Ankara, Turkey
Thesis Title: Use of Nano Fluid in Heat Recovery Units
Supervisor: Prof. Dr. Adnan SÖZEN

EXPERIENCE

Work Experience

- 2018- 2021 **Research Assistant**, University of Turkish Aeronautical Association, Faculty of Engineering, Department of Mechanical Engineering, Ankara, Turkey.
- 2021-Ongoing **Assistant Prof. Dr.** University of Turkish Aeronautical Association, Faculty of Engineering, Department of Mechanical Engineering, Ankara, Turkey.

PUBLICATIONS

Articles published in peer reviewed international journals (SCI, SCI Expanded):

- Sözen A., Variyenli H. İ., Özdemir M. B., Gürü M., **Aytac I** (2016). Heat transfer enhancement using alumina and fly ash nanofluids in parallel and cross-flow concentric tube heat exchangers. Journal of the Energy Institute, 89(3), 414-424.
- Sozen A., Martin K., **Aytac I.**, Filiz C. (2020). Upgrading the performance of heat recovery unit containing heat pipes by using hybrid (CuO+ZnO)/water nanofluid. Heat Transfer Research, 51(14), 1289-1300.
- Aytac I.**, Sozen A., Martin K., Filiz C., Ali H. (2020). Improvement of Thermal Performance using Spineloxides/ Water Nanofluids in the Heat Recovery Unit with Air-to-Air Thermosiphon Mechanism. International Journal of Thermophysics, 41(11), 1-22.
- Sozen A., Filiz C., **Aytac I.**, Martin K., Ali H., Boran K., Yetişen Y. (2021). Upgrading of the Performance of an Air-to-Air Heat Exchanger Using Graphene/Water Nanofluid. International Journal of Thermophysics, 42(3), 1-15.

5. Çiftçi E., Khanlari A., Sözen A., **Aytaç İ.**, Tuncer A. D. (2021). Energy and exergy analysis of a photovoltaic thermal (PVT) system used in solar dryer: A numerical and experimental investigation. *Renewable Energy* 180, 410-423.

6. Tuncer A. D., Khanlari A., **Aytaç İ.**, Çiftçi E., Sözen A., Variyenli H. İ. (2022). Passive thermal management of photovoltaic panel by using phase change material-filled aluminum cans: an experimental study. DOI: 10.1615/HeatTransRes.2022041473.

7. Khanlari A., Tuncer A. D., Sözen A., **Aytaç İ.**, Çiftçi E., Variyenli H. İ. (2022). Energy and exergy analysis of a vertical solar air heater with nano-enhanced absorber coating and perforated baffles. *Renewable Energy*.

Articles published in other peer reviewed international journals (ESCI):

1. **Aytaç I.**, Sozen, A. (2021). Performance Improvement of the Heat Recovery Unit with Sequential Type Heat Pipes Using Water Based ZnO and ZnOAl₂O₃ Nanofluids. *Journal of Polytechnic*. <https://doi.org/10.2339/politeknik.703083>.

2. **Aytaç I.** (2021). Investigation of the Effect of CuO/Water and ZnO/Water Nanofluids on Heat Pipe Performance. *Journal of Polytechnic*. <https://doi.org/10.2339/politeknik.755358>.

Articles published in peer reviewed national journals:

1. **Aytaç I.** (2020). Thermal Behaviors of Thermophysical Properties of Hybrid Nanofluids. *Gazi University Science Journal: PART:C Design and Technology*. 8(4), 810-829.

Papers delivered in international conferences and printed as proceedings:

1. Martin, K, **Aytaç, I.**, Filiz, C., Sozen A., Kılınc C. (2020). Experimental Investigation of the Use of MgO+ZnO Mixture in Thermosiphon Type Heat Pipes within the Scope of Air-to-Air Heat Exchanger Design. 8th Eur. Conf. Ren. Energy Sys. 24-25 August 2020, Istanbul, Turkey.

2. Martin K., **Aytaç I.**, Filiz C., Sozen A., Iskender U. (2020). Upgrading of Performance of Air to Air Heat Pipe Heat Exchanger By Using CuO+ZnO Hybrid Nano Fluid. 8th Eur. Conf. Ren. Energy Sys. 24-25 August 2020, Istanbul, Turkey.

3. Sozen A., Ciftci E., **Aytaç I.** (2020). Preparation of Aqueous Fe+CuO, ZnO+Al₂O₃ and CuO+Al₂O₃ Hybrid Nanofluids and Thermal System Applications. *Int. Conf. Advanced. Mater. Sci.& Eng. HiTech.and Device Appl.* 02-04 October 2020, Ankara, Turkey.

4. **Aytaç I.** (2020). Experimental investigation of the effect of using ZnO / water nanofluid on the thermal performance of the air to air heat recovery unit. 2nd International Eurasian Conference on Science, Engineering and Technology (EurasianSciEnTech 2020). 07-09 October 2020, Gaziantep, Turkey.

5. **Aytaç I.** (2020). Improvement of thermal performance by using ZnOAl₂O₃/water nanofluid in heat pipe-heat recovery unit. 2nd International Eurasian Conference on Science, Engineering and Technology (EurasianSciEnTech 2020). 07-09 October 2020, Gaziantep, Turkey.

6. **Aytaç I.** (2020). The Effects of the Occupational Health and Safety Legislation Changes on the Work Accidents/deaths in Turkey. 4th International Medicine and Health Sciences Congress. 22-23 August 2020, Çorum, Turkey.

RESEARCH AREAS

Heat transfer, heat exchanger, nanofluids, thermal performance, heat pipe, thermodynamics, conduction, heat recovery systems, energy systems, HVAC (Heating, Ventilation and Air Conditioning), energy efficiency, heat transfer coefficient.

FOREIGN LANGUAGES

English: Fluently

CERTIFICATIONS

Certificate Of Occupational Health And Safety Expertise, Class C (National Certificate).