Yağmur Nalbant Atak, Ph.D.
Assistant Professor of Mechanical Engineering
Atılım University
Department of Mechanical Engineering
06830 İncek, Gölbaşı, Ankara/TURKEY
yagmur.atak@atilim.edu.tr
Tel: +90 312 586 8331

PERSONAL

Date of Birth	28/06/1994
Place of Birth	Muğla / Turkey

EDUCATION

2018-2022	PhD., Department of Thermodynamics, Mechanical Engineering, Dokuz Eylül University, Izmir, Turkey
2016-2018	M.Sc., Department of Thermodynamics, Mechanical Engineering, Dokuz Eylül University, Izmir, Turkey
2012-2016	B.Sc., Mechanical Engineering, Faculty of Engineering, Dokuz Eylül University, Izmir, Turkey

ACADEMIC POSITIONS

01/2023	Asst. Prof. Dr., Department of Mechanical Engineering, Atilim University, Turkey

HONORS&AWARDS

1	Second Prize in the Third Traditional Interdisciplinary Project Competition Organized by The Faculty of Engineering of Dokuz Eylül University, 2016
2	Graduation with Honors, B.Sc. from Dokuz Eylül University, 2016
3	Third Degree Award, B.Sc. from Mechanical Engineering Department in Dokuz Eylül University , 2016

RESEARCH INTERESTS

1	Hydrogen Production Technologies, Membrane Reactors, Water Electrolyzer Technology
2	Fuel cells (Proton Exchange Membrane Fuel Cells)
3	Thermodynamic (Energy and Exergy) and Techno-economic Analyses
4	Mathematical Modeling of Thermal Systems (0-D, 1-D and 2-D)
5	Power-to-X Systems

PROFESSIONAL SERVICE

1	23rd World Hydrogen Energy Conference 2022 (WHEC-2022) Conference Organizing Committee Member as Graduate Student Volunteers

PUBLICATIONS

1	Atak, Y. N. (2026). Performance assessment of a solar-geothermal based Organic Rankine Cycle system producing green hydrogen. *International Journal of Hydrogen Energy*, *212*, 153726. **DOI:** https://doi.org/10.1016/j.ijhydene.2026.153726
2	Atak, Y. N., Ince, A. C., Colpan, C. O., Iulianelli, A., Serincan, M. F., & Pasaogullari, U. (2025). Thermoeconomic analysis of an integrated membrane reactor and carbon dioxide capture system producing decarbonized hydrogen. *Energy Conversion and Management*, *326*, 119506. **DOI:** https://doi.org/10.1016/j.enconman.2025.119506
3	Atak, Y. N., Colpan, C. O., & Iulianelli, A. (2022). Energy and exergy analyses of an integrated membrane reactor and CO2 capture system to generate decarbonized hydrogen. Energy Conversion and Management, 272, 116367. **DOI:** https://doi.org/10.1016/j.enconman.2022.116367
4	Nalbant Atak, Y., Colpan, C. O., & Iulianelli, A. (2021). A review on mathematical modeling of packed bed membrane reactors for hydrogen production from methane. International Journal of Energy Research, 45(15), 20601-20633. **DOI:** https://doi.org/10.1002/er.7186
5	Nalbant, Y., Colpan, C. O., & Devrim, Y. (2020). Energy and exergy performance assessments of a high temperature-proton exchange membrane fuel cell based integrated cogeneration system. International Journal of Hydrogen Energy, 45(5), 3584-3594. **DOI:** https://doi.org/10.1016/j.ijhydene.2019.01.252
6	Nalbant, Y., Colpan, C. O., & Devrim, Y. (2018). Development of a one-dimensional and semi-empirical model for a high-temperature proton exchange membrane fuel cell. international journal of hydrogen energy, 43(11), 5939-5950. **DOI:** https://doi.org/10.1016/j.ijhydene.2017.10.148

BOOK CHAPTERS

1	Ercelik, M., Nalbant, Y., Colpan, C. O., & Ismail, M. S. (2025). Fundamentals of fuel cell technologies, Elsevier.
2	Çelebi, C., Altınışık, H., Atak, Y. N., Colpan, C. O., & Devrim, Y. (2024). Hydrogen production: Electrolysis methods, Elsevier
3	Atak, Y. N., Colpan, C. O., & Iulianelli, A. (2022). Hydrogen and renewable energy: the role of membrane reactor technology. In Membrane Engineering in the Circular Economy (pp. 149-174). Elsevier.
4	Nalbant, Y., & Colpan, C. O. (2020). An Overview of Hydrogen Production from Biogas. Accelerating the Transition to a 100% Renewable Energy Era, 355-373.
5	Colpan, C. O., Nalbant, Y., & Ercelik, M. (2018). 4.28 Fundamentals of Fuel Cell Technologies Dincer, I. (2018). Comprehensive Energy Systems.

PROJECTS

1	**TUBITAK 1001 Supporting Scientific and Technological Research Projects Program by Principal investigator Prof.Dr. Yılser Devrim** **Grant number:** 123M878 **Project Subject:** “Developing innovative membranes for anion exchange membrane electrolyzer and improving hydrogen production performance”
2	**TUBA-GEBIP Project (2019–2022) conducted by Principal investigator Prof.Dr. Can Özgür ÇOLPAN** **Project Subject:** “Two-Dimensional Mathematical Modeling of Membrane Reactor Producing Hydrogen from Biogas” (Researcher as PhD Student)

3	**SCIENTIFIC RESEARCH PROJECT (2019-2022)– Dokuz Eylül University** **Grant Number:** 2019.KB.FEN.022 **Project Subject:** "Experimental and Mathematical Modeling of Hydrogen Production from Biogas Through Membrane Reactors" (Researcher as PhD Student)
4	**TUBITAK 1001 Supporting Scientific and Technological Research Projects Program conducted by Principal investigator Prof.Dr. Yılser Devrim** **Grant number:** 214M301 **Project Subject: "**Design and Development of the High-Temperature Fuel Cell Fueled by Reformate Gases for Evaluation of Micro-Cogeneration Application**"** (Researcher as MSc Student, 2016-2018)
5	**TUBITAK 2209-A - University Students Research Project – (2015-2016)** **Grant number:** 1919B011501716 **Project Subject:** "Experimental Investigation of the Effects of Different Catalyst Coating Methods on Performance in Direct Methanol Fuel Cells" (Researcher as Undergraduate Student)

CONFERENCE PRESENTATIONS

1	**Nalbant Atak, Y.,** (2025). Performance Assessment of Hydrogen Productıon from Geothermal-Solar Based ORC System. Conference: *9th International Hydrogen Technologies Congress (IHTEC-2025)* (Oral Presentation)
2	**Demirtas, A.,** Colpan, C. O., Devrim, Y., and Nalbant Atak, Y., (2025). Mathematical Modeling and Sımulatıon of An Anion Exchange Membrane Water Electrolyzer in COMSOL Multiphysics Conference: *9th International Hydrogen Technologies Congress (IHTEC-2025)* (Oral Presentation)
3	**Buyuk, M.,** Nalbant Atak, Y., and Devrim, Y., (2025). Numerical Simulation of High-Temperature Proton Exchange Membrane Fuel Cell Performance Using 3-D COMSOL Model Conference: *9th International Hydrogen Technologies Congress (IHTEC-2025)* (Oral Presentation)
4	**Ince, A.C.,** Nalbant Atak, Y., Colpan, C. O., and Pasaogullari, U. (2023). Thermodynamic Performance Assessment of a Small-Scale Biogas-To-Ammonia System. Conference: The World Energy Storage Conference-2023 (WESC-2023), November 05-08, 2023, University of Pittsburgh, Bradford, PA, USA
5	**Mızrak, D.S.,** Nalbant Atak, Y., Erdogan, A., Colpan, C.O. (2023). Performance Assessment of Power and Synthetic Methane Production from Geothermal Energy. Conference: 12th International Exergy, Energy and Environment Symposium (IEEES-14), December 24-27, 2023, Tuzla, Istanbul, Türkiye (Oral Presentation)
6	**Nalbant Atak,** Y., Colpan, C. O., and Iulianelli, A. (2022). Energy Analysis of a Membrane Reactor-Based Hydrogen Production System. Conference: 23rd World Hydrogen Energy Conference (WHEC-2022) (Oral Presentation)

7	**Nalbant Atak, Y.,** Colpan, C. O., and Iulianelli, A. (2021). Comparison study of a one-dimensional membrane reactor using a self-supported membrane. Conference: 12th International Conference on Hydrogen Production (ICH2P-2021)-Online Conference
8	**Nalbant Atak,** Y., Colpan, C. O., and Iulianelli, A. (2021). One-Dimensional Model of a Membrane Reactor Providing Hydrogen Production from Reformate Gas Conference: 1st Renewable Hydrogen Energy Conference (RH2EC-2021)-Online Conference
9	**Nalbant, Y.,** & Colpan, C. O. (2019). Comparison of the 0-D and 3-D models of a steam-methane reformer. Conference: 4th International Hydrogen Technologies Congress (IHTEC-2019), Edirne, Turkey. (Oral Presentation)
10	**Nalbant, Y.,** & Colpan, C. O. (2019). 3-D model of a steam-methane reformer for proton exchange membrane fuel cell applications Conference: 10th International Conference on Hydrogen Production (ICH2P-2019) - Cluj-Napoca, România (Oral Presentation)
11	**Nalbant, Y.,** Colpan, C. O., & Devrim, Y. (2018). Development of a mathematical model for an HT-PEMFC stack-based cogeneration system Conference: 3rd International Hydrogen Technologies Congress (IHTEC-2018); 15-18 March, Alanya, Turkey. (Oral Presentation)
12	**Nalbant, Y.,** Colpan, C. O., & Devrim, Y. (2018). Thermodynamic modeling of natural gas fueled HT-PEMFC based cogeneration system Conference: 7th Global Conference on Global Warming; June 24-28, 2018, İzmir, Turkey. (Oral Presentation)
13	**Nalbant, Y.,** Colpan, C. O., & Devrim, Y. (2018). Mathematical modeling of cogeneration system based on proton exchange membrane fuel cell operating at high temperature Conference: 4th Anatolian Energy Symposium with International Participation; 18-20 Nisan 2018, Edirne, Türkiye (Oral Presentation)
14	**Nalbant, Y.,** Colpan, C. O., Devrim, Y. (2017). Development of a semi-empirical model for a high-temperature proton exchange membrane fuel cell. Conference: 9th International Exergy, Energy and Environment Symposium (IEEES-9); 14-17 May 2017, Split, Croatia (Oral Presentation)
15	**Ozden, A.,** Ercelik, M., Nalbant, Y., Kiyik, H., & Colpan, C. O. (2016). The Effects of Three Different Coating Techniques on the Performance of DMFCs Conference: 8th International Exergy, Energy and Environment Symposium; 1-4 May 2016, Antalya, Türkiye

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	119
H-index (ISI Web of Science):	4

COURSES GIVEN

1	ME108 – Computer Aided Solid Modelling
2	ME390 - Mechanical Engineering Systems Laboratory
3	ME408 - Thermal System Design
4	ME453 - Heat Exchanger Design
5	ME 454 - Design of Hydraulic Machines