

## Prof. Ayşegül Abuşođlu

### Personal Information

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### Education Information

Doctorate, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), Turkey 2003 - 2008

Post Graduate, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), Turkey 2000 - 2001

Under Graduate, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), Turkey 1989 - 1994

### Dissertations

Doctorate, Exergetic and thermoeconomic performance analysis and optimization of diesel engine powered cogeneration systems, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), 2008

Post Graduate, Waste heat recovery from hot dyed wastewater of acrylic fiber dyeing plants, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), 2001

### Research Areas

Mechanical Engineering, Renewable Energy Systems, Thermodynamics, Thermal Systems, Engineering and Technology

### Academic Titles / Tasks

Professor, Istanbul Technical University, Makina, Makina Mühendisliđi, 2020 - Continues

Associate Professor, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), 2014 - 2020

Assistant Professor, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), 2010 - 2014

Research Assistant, Gaziantep University, Faculty Of Engineering, Department Of Mechanical Engineering (English), 2002 - 2010

### Advising Theses

Abuşođlu A., Genetic algorithm based optimization of renewable power production process, Post Graduate, Ö.FARUK(Student), 2019

Abuşođlu A., Energy recovery using organic rankine cycle (ORC) from municipal sewage sludge as sustainable energy resource, Post Graduate, N.SUAT(Student), 2019

Abuşođlu A., Cost optimization of biogas based power production: comprehensive thermoeconomic analysis and evaluation methods, Doctorate, D.HAYDARGİL(Student), 2019

Abuşođlu A., Energy and exergy analysis of a hospital trigeneration system a case study: Kartal Dr. Lütfi Kırdar training and research hospital, Post Graduate, M.BURAK(Student), 2019

Abuşođlu A., An analysis and assessment of energy production potential from municipal wastes in Erbil city, Iraq, Post Graduate, K.TAMOO(Student), 2015

Abuşođlu A., Life cycle assessment and analysis of heat and power production alternatives from digested sewage sludge, Post Graduate, H.ALI(Student), 2014

Abuşođlu A., Thermoelastic analysis of thick pressurized cylinders, Post Graduate, B.KANLIKAMA(Student), 2013

Abuşođlu A., Energy and life cycle analysis of HVAC applications in historical and modern buildings, Post Graduate, M.SAEED(Student), 2013

Abuşođlu A., Thermodynamic and thermoeconomic analysis and optimization of biogas usage in electricity and hydrogen productions from wastewater treatment systems, Post Graduate, S.DEMİR(Student), 2012

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A comparative thermoeconomic cost accounting analysis and evaluation of biogas engine-powered cogeneration**  
Haydargil D., Abusoglu A.  
ENERGY, vol.159, pp.97-114, 2018 (Journal Indexed in SCI)
- II. **Thermoeconomic multi-objective optimization of an organic Rankine cycle (ORC) adapted to an existing solid waste power plant**  
Ozahi E., Tozlu A., Abusoglu A.  
ENERGY CONVERSION AND MANAGEMENT, vol.168, pp.308-319, 2018 (Journal Indexed in SCI)
- III. **Thermoeconomic analysis and optimization of a Re-compression supercritical CO<sub>2</sub> cycle using waste heat of Gaziantep Municipal Solid Waste Power Plant**  
Tozlu A., Abusoglu A., Ozahi E.  
ENERGY, vol.143, pp.168-180, 2018 (Journal Indexed in SCI)
- IV. **Thermodynamic and thermoeconomic analyses of an organic Rankine cycle adapted gas turbine cycle using S-CO<sub>2</sub>**  
Tozlu A., Ozahi E., Abusoglu A.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.33, pp.917-928, 2018 (Journal Indexed in SCI)
- V. **Thermoeconomic Analysis and Assessment of Gaziantep Municipal Solid Waste Power Plant**  
Tozlu A., Abusoglu A., Ozahi E.  
ACTA PHYSICA POLONICA A, vol.132, pp.513-517, 2017 (Journal Indexed in SCI)
- VI. **Thermodynamic Performance Assessment of Different Fluids in a Typical Organic Rankine Cycle for Usage in Municipal Solid Waste Power Plant**  
Ozahi E., Tozlu A., Abusoglu A.  
ACTA PHYSICA POLONICA A, vol.132, pp.807-812, 2017 (Journal Indexed in SCI)
- VII. **Exergy analyses of green hydrogen production methods from biogas-based electricity and sewage sludge**  
Abusoglu A., Ozahi E., Kutlar A. I. , Demir S.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.42, pp.10986-10996, 2017 (Journal Indexed in SCI)
- VIII. **A comparative thermodynamic and economic analysis and assessment of a conventional HVAC and a VRF system in a social and cultural center building**  
Ozahi E., Abusoglu A., Kutlar A. I. , Dagci O.  
ENERGY AND BUILDINGS, vol.140, pp.196-209, 2017 (Journal Indexed in SCI)
- IX. **Life cycle assessment (LCA) of digested sewage sludge incineration for heat and power production**  
Abusoglu A., Ozahi E., Kutlar A. I. , Al-jaf H.

JOURNAL OF CLEANER PRODUCTION, vol.142, pp.1684-1692, 2017 (Journal Indexed in SCI)

- X. **Energy and economic analyses of models developed for sustainable hydrogen production from biogas-based electricity and sewage sludge**  
Abusoglu A., Demir S., Ozahi E.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, pp.13426-13435, 2016 (Journal Indexed in SCI)
- XI. **Geothermal energy use in absorption precooling for Claude hydrogen liquefaction cycle**  
Kanoglu M., Yilmaz C., Abusoglu A.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.41, pp.11185-11200, 2016 (Journal Indexed in SCI)
- XII. **Waste to energy technologies for municipal solid waste management in Gaziantep**  
Tozlu A., Ozahi E., Abusoglu A.  
RENEWABLE & SUSTAINABLE ENERGY REVIEWS, vol.54, pp.809-815, 2016 (Journal Indexed in SCI)
- XIII. **Exergetic cost evaluation of hydrogen production powered by combined flash-binary geothermal power plant**  
Yilmaz C., Kanoglu M., Abusoglu A.  
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.40, pp.14021-14030, 2015 (Journal Indexed in SCI)
- XIV. **Thermoeconomic cost evaluation of hydrogen production driven by binary geothermal power plant**  
Yilmaz C., Kanoglu M., Abusoglu A.  
GEOTHERMICS, vol.57, pp.18-25, 2015 (Journal Indexed in SCI)
- XV. **Thermodynamic analysis and life cycle assessment of the heating strategies in historical buildings: a case study**  
Abusoglu A., Sedeeq M. S.  
INTERNATIONAL JOURNAL OF EXERGY, vol.14, pp.60-82, 2014 (Journal Indexed in SCI)
- XVI. **Comparative exergoenvironmental analysis and assessment of various residential heating systems**  
Abusoglu A., Sedeeq M. S.  
ENERGY AND BUILDINGS, vol.62, pp.268-277, 2013 (Journal Indexed in SCI)
- XVII. **Thermoeconomic assessment of a sustainable municipal wastewater treatment system**  
Abusoglu A., Demir S., Kanoglu M.  
RENEWABLE ENERGY, vol.48, pp.424-435, 2012 (Journal Indexed in SCI)
- XVIII. **Exergoeconomic assessment of a geothermal assisted high temperature steam electrolysis system**  
Kanoglu M., Ayanoglu A., Abusoglu A.  
ENERGY, vol.36, pp.4422-4433, 2011 (Journal Indexed in SCI)
- XIX. **Exergy-based industrial ecology assessment of integrated and separated power and heat production systems**  
Abusoglu A., Kanoglu M.  
INTERNATIONAL JOURNAL OF EXERGY, vol.9, pp.99-111, 2011 (Journal Indexed in SCI)
- XX. **Exergoeconomic analysis and optimization of combined heat and power production: A review**  
Abusoglu A., Kanoglu M.  
RENEWABLE & SUSTAINABLE ENERGY REVIEWS, vol.13, pp.2295-2308, 2009 (Journal Indexed in SCI)
- XXI. **Allocation of Emissions for Power and Steam Production Based on Energy and Exergy in Diesel Engine Powered Cogeneration**  
Abusoglu A., Kanoglu M.  
ENERGY & FUELS, vol.23, pp.1526-1533, 2009 (Journal Indexed in SCI)
- XXII. **Exergetic and thermoeconomic analyses of diesel engine powered cogeneration: Part 1- Formulations**  
Abusoglu A., Kanoglu M.  
APPLIED THERMAL ENGINEERING, vol.29, pp.234-241, 2009 (Journal Indexed in SCI)
- XXIII. **Exergetic and thermoeconomic analyses of diesel engine powered cogeneration: Part 2-Application**  
Abusoglu A., Kanoglu M.  
APPLIED THERMAL ENGINEERING, vol.29, pp.242-249, 2009 (Journal Indexed in SCI)
- XXIV. **First and second law analysis of diesel engine powered cogeneration systems**  
Abusoglu A., Kanoglu M.

ENERGY CONVERSION AND MANAGEMENT, vol.49, pp.2026-2031, 2008 (Journal Indexed in SCI)

XXV. **Performance characteristics of a Diesel engine power plant**

Kanoglu M., Isik S., Abusoglu A.

ENERGY CONVERSION AND MANAGEMENT, vol.46, pp.1692-1702, 2005 (Journal Indexed in SCI)

## Articles Published in Other Journals

I. **GEOHERMAL ENERGY USE IN HYDROGEN PRODUCTION**

YILMAZ C., KANOĞLU M., ABUŞOĞLU A.

Journal of Thermal Engineering, vol.2, pp.699-708, 2015 (Other Refereed National Journals)

## Refereed Congress / Symposium Publications in Proceedings

I. **Producing Bio-electricity and Bio-heat from Urban Sewage Sludge in Turkey Using a Two-Stage Process**

ABUŞOĞLU A., MOGHADDAM A. A. , GUERRERO J.

Proc. of the 5th International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET), 26 - 27 August 2019

II. **Bir Akışkan Yataklı Atık Su Çamuru Yakma Tesisinin Termodinamik Analizi ve Değerlendirmesi**

ATAY N. S. , ABUŞOĞLU A.

6th International Multidisciplinary Studies Congress, 26 - 27 April 2019

III. **Türkiye’de Hayvansal Atıktan Elde Edilen Biyogaza Bağlı Bölgesel Elektrik Ve Isı Üretiminin Bir Portresi**

MAVİGÖK B., ABUŞOĞLU A., MOGHADDAM A. A. , GUERRERO J.

6th International Multidisciplinary Studies Congress, 26 - 27 April 2019

IV. **Thermodynamic Optimization of a Biogas Engine Powered Cogeneration System with Using Genetic Algorithm**

KURT Ö. F. , ABUŞOĞLU A.

Uluslararası GAP Yenilenebilir Enerji Ve Enerji Verimliliği Kongresi - 2018, Şanlıurfa, Turkey, 10 - 12 May 2018, pp.218

V. **A Portrait of Municipal Wastewater Treatment Systems in Turkey as Self-sustaining Renewable Energy Producers**

ABUŞOĞLU A.

8th International 100 Renewable Energy Conference, İstanbul, Turkey, 7 - 09 May 2018, pp.30-34

VI. **Energy and Exergy Analysis of a Hospital Trigeneration System**

ÖZGÖZTAŞI M. B. , ABUŞOĞLU A.

8th International 100 Renewable Energy Conference, İstanbul, Turkey, 7 - 09 May 2018, pp.84-89

VII. **Application and Comparison of Exergetic Cost Theory and Wonergy Methods to a Biogas Engine Powered Cogeneration**

HAYDARGİL D., ABUŞOĞLU A.

8th International 100 Renewable Energy Conference, İstanbul, Turkey, 7 - 09 May 2018, pp.100-106

VIII. **Thermoeconomic Analyses and Assessment of Combined Systems: GT-ORC and GT-KAL cycle**

TOZLU A., ÖZAHİ E., ABUŞOĞLU A.

4th INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2017), 4 - 08 October 2017

IX. **A Thermodynamic Comparison of Gas Turbine, Kalina and Organic Rankine Cycles in frame of Waste Heat Recovery**

TOZLU A., ÖZAHİ E., ABUŞOĞLU A.

4th INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING

(ICCESEN-2017), 4 - 08 October 2017

- X. **Thermodynamic Analyses of a Coal-Fired Power Plant in Izmir, Turkey**  
ÖZAHİ E., TOZLU A., ABUŞOĞLU A., KUTLAR A. İ.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XI. **Environmental Impact Assessment of Sewage Sludge Use in Energy Recovery**  
ABUŞOĞLU A., ÖZAHİ E., TOZLU A.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XII. **A Developed Closed-Cycle GT Using Transcritical CO<sub>2</sub> for WHR in a Typical MSW Power Plant**  
TOZLU A., ÖZAHİ E., ABUŞOĞLU A.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XIII. **Influence of Inner Geometry of Pipe Fittings on Pressure Drop in Steady Pipe Flow**  
ÖZAHİ E., TOZLU A., ABUŞOĞLU A., KUTLAR A. İ.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XIV. **Auxiliary Heat and Power Productions in a Sewage Treatment Facility**  
ABUŞOĞLU A., ÖZAHİ E., TOZLU A.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XV. **Energy and Exergy Analyses of a Gas Turbine Developed for Heat Recovery in a MSW Power Plant**  
TOZLU A., ÖZAHİ E., ABUŞOĞLU A.  
3rd INTERNATIONAL CONFERENCE ON ENGINEERING AND NATURAL SCIENCES, Budapest, Hungary, 3 - 07 May 2017
- XVI. **Thermoeconomic Analysis and Assessment of Gaziantep Municipal Solid Waste Power Plant**  
TOZLU A., ÖZAHİ E., ABUŞOĞLU A.  
3rd INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2016), 19 - 24 October 2016
- XVII. **Thermodynamic Performance Assessment of Different Fluids in a Typical Organic Rankine Cycle for Usage in Municipal Solid Waste Power Plant**  
ÖZAHİ E., TOZLU A., ABUŞOĞLU A.  
3rd INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2016), 19 - 24 October 2016
- XVIII. **Energetic and exergetic analyses of a solid waste power plant using Aspen Plus**  
TOZLU A., ÖZAHİ E., ABUŞOĞLU A.  
The 2016 International Conference on Energy, Environment, Ecosystems, and Development, EEED 2016, 28 - 30 May 2016
- XIX. **An adapted organic Rankine cycle ORC in Gaziantep Municipal Solid Waste Power Plant**  
ÖZAHİ E., TOZLU A., ABUŞOĞLU A.  
The 2016 International Conference on Energy, Environment, Ecosystems, and Development, EEED 2016, 28 - 30 May 2016
- XX. **A portrait of sewage sludge use for sustainable energy recovery potential in Turkey in the frame of EU environmental legislations**  
ABUŞOĞLU A., ÖZAHİ E., TOZLU A.  
The 2016 International Conference on Energy, Environment, Ecosystems, and Development, EEED 2016, 28 - 30 May 2016
- XXI. **A General View on Municipal Solid Waste Management in Gaziantep**  
TOZLU A., ÖZAHİ E., ABUŞOĞLU A.  
INTERNATIONAL CONFERENCE ON ENVIRONMENTAL SCIENCE AND TECHNOLOGY - ICOEST 2015, 9 - 13 September 2015

- XXII. **Thermoeconomic Optimization of Hydrogen Production by A Flash Binary Geothermal Power Plant**  
YILMAZ C., KANOĞLU M., ABUŞOĞLU A.  
INTERNATIONAL CONFERENCE ON ADVANCED TECHNOLOGY AND SCIENCES - ICAT 2015, 4 - 07 August 2015
- XXIII. **Thermoeconomic Optimization of Hydrogen Production and Liquefaction by Geothermal Power**  
YILMAZ C., KANOĞLU M., ABUŞOĞLU A.  
7th INTERNATIONAL ENERGY, EXERGY AND ENVIRONMENT SYMPOSIUM, 27 - 30 April 2015
- XXIV. **Jeotermal Destekli Hidrojen Sıvılaştırma Çevriminin Termodinamik ve Termoekonomik Analizi**  
YILMAZ C., KANOĞLU M., ABUŞOĞLU A.  
12. ULUSAL TESİSAT MÜHENDİSLİĞİ KONGRESİ, Turkey, 8 - 11 April 2015

## Supported Projects

Abuşoğlu A., Özahi E., TUBITAK Project, BİYOBOZUNUR KATI ATIK TESİSLERİNİN TERMODİNAMİK, TERMOEKONOMİK ANALİZ VE OPTİMİZASYONLARI ÇERÇEVESİNDE YENİLENEBİLİR ENERJİ POTANSİYELLERİNİN ARAŞTIRILMASI VE SIFIR ATIK YAKLAŞIMIYLA SÜRDÜRÜLEBİLİR MODELLERİN GELİŞTİRİLEBİLMESİ, 2014 - 2017

Abuşoğlu A., Kanoğlu M., TUBITAK Project, Jeotermal Enerjinin Hidrojen Üretimi ve Sıvılaştırılmasında Kullanımının Termoekonomik Analizi Optimizasyonu ve Yaşam Döngü Maliyet Analizi, 2013 - 2015

Abuşoğlu A., Kanoğlu M., TUBITAK Project, ATIK SU ARITMA TESİSLERİNDE ELDE EDİLEN BİYOGAZIN ELEKTRİK VE HİDROJEN ÜRETİMİNDE KULLANIMININ TERMODİNAMİK TERMOEKONOMİK ANALİZ VE OPTİMİZASYONU, 2010 - 2012

## Citations

Total Citations (WOS):736

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