

## Prof. Fatma AYDIN AKGÜN

### Personal Information

**Web:** <https://avesis.yildiz.edu.tr/fakgun>

**Address:** Y.T.Ü. Kimya Metalurji Fakültesi Matematik Mühendisliği Bölümü A236 Davutpaşa Kampüsü Esenler

### International Researcher IDs

ORCID: 0000-0002-1070-8200

Publons / Web Of Science ResearcherID: A-2130-2019

ScopusID: 54885326300

Yoksis Researcher ID: 185420



### Education Information

Doctorate, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, Turkey 2002 - 2008

Postgraduate, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, Turkey 2000 - 2002

Undergraduate, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, Turkey 1995 - 1998

### Foreign Languages

English, C1 Advanced

Russian, A1 Beginner

### Certificates, Courses and Trainings

Education Management and Planning, MATLAB KURSU, FİGES, 2008

Foreign Language, BAZOVIY UROVEN (Ruşça dil eğitimi), Milli Eğitim Bakanlığı, 2007

### Dissertations

Doctorate, SINIR KOŞULUNDA SPEKTRAL PARAMETRE BULUNAN SINIR DEĞER PROBLEMLERİ ÜZERİNE, Yıldız Teknik Üniversitesi, Kimya Metalurji Fakültesi, Matematik Mühendisliği, 2008

Postgraduate, TÜM EKSENDE OPERATÖR KATSAYILI STURM-LIOUVILLE DENKLEMİNİN GREEN FONKSİYONUNUN BULUNMASI VE ÖZDEĞERLERİ SAYISININ ASİMPOTOTİK İFADESİ ÜZERİNE, Yıldız Teknik Üniversitesi, FACULTY OF CHEMICAL AND METALLURGICAL ENGINEERING, Matematik Mühendisliği, 2002

### Research Areas

Soft Computing, Mathematics, Sequences, Series, Summability, Functional Analysis, Natural Sciences

## Academic Titles / Tasks

Associate Professor, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, 2000 - Continues

## Academic and Administrative Experience

Erasmus Coordinator, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, 2015 - Continues

Yıldız Teknik Üniversitesi, Burs Komisyonu, 2015 - Continues

## Courses

Matematik Mühendisliğinde Tasarım Uygulamaları, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

LİNEER CEBİR(1.ÖĞR), Undergraduate, 2021 - 2022, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

Matematik Mühendisliğine Giriş, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018

BİTİRME ÇALIŞMASI, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

İŞLETME MATEMATİĞİ 2(İNG), Undergraduate, 2016 - 2017

YÜKSEK LİSANS TEZİ, Postgraduate, 2016 - 2017

UZMANLIK ALAN DERSİ, Postgraduate, 2016 - 2017

LİNEER CEBİR(ing), Undergraduate, 2017 - 2018

İŞLETME MATEMATİĞİ 1(İNG), Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016

İSTATİSTİK OLASILIK, Undergraduate, 2016 - 2017, 2015 - 2016

OLASILIK TEORİSİ VE MATE. İSTATİSTİK, Postgraduate, 2015 - 2016

İSTATİSTİK OLASILIK, Undergraduate, 2016 - 2017, 2015 - 2016

MATEMATİK LOJİK(2.ÖĞR), Undergraduate, 2015 - 2016

LİNEER CEBİR(2.ÖĞR), Undergraduate, 2016 - 2017, 2015 - 2016

İŞLETME MATEMATİĞİ , Undergraduate, 2016 - 2017

YÜKSEK LİSANS TEZİ, Postgraduate, 2016 - 2017

İSTATİSTİKİ KARAR TEORİSİ, Postgraduate, 2015 - 2016

MEÜHENDİSLİK MATEMATİĞİ 1, Postgraduate, 2015 - 2016

## Advising Theses

Aydın Akgün F., Proje yönetimi yaklaşımının matematiksel yöntemlerle seçilmesi ve uygulanması, Postgraduate, H.ÖZDEMİR(Student), 2022

AYDIN AKGÜN F., MONOTONLUĞU KORUYAN MATRİSLER, Postgraduate, S.MAHMOOD(Student), 2016

## Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Sakarya Üniversitesi, December, 2021

Doctoral Examination, Doctoral Examination, Sakarya Üniversitesi, October, 2021

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Sakarya Üniversitesi, May, 2021

Doctorate, DOKTORA YETERLİLİK, SAKARYA ÜNİVERSİTESİ, September, 2017

Doctorate, Tez savunma Jürisi, SAKARYA ÜNİVERSİTESİ, February, 2017

Doctorate, Doktora yeterlilik Jürisi, SAKARYA ÜNİVERSİTESİ, September, 2016

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **A regularized trace of an even-order differential operator with bounded operator coefficient given in a finite interval**  
AYDIN AKGÜN F., Bayramoglu M.  
Filomat, vol.37, no.11, pp.3391-3401, 2023 (SCI-Expanded)
- II. **A new iteration method for the solution of third-order BVP via Green's function**  
AYDIN AKGÜN F., Rasulov Z.  
Demonstratio Mathematica, vol.54, no.1, pp.425-435, 2021 (SCI-Expanded)
- III. **THE SECOND REGULARIZED TRACE FORMULA FOR THE STURM-LIOUVILLE OPERATOR**  
Akgun F., Bayramoglu M., Bayramov A.  
MISKOLC MATHEMATICAL NOTES, vol.20, no.1, pp.17-32, 2019 (SCI-Expanded)
- IV. **Characterizations of H-J Matrices**  
Akgun F., Rhoades B. E.  
FILOMAT, vol.30, no.3, pp.675-679, 2016 (SCI-Expanded)
- V. **Totally Equivalent HJ Matrices**  
Aydm Akgün F., Rhoades B.  
Applied Mathematics & Information Sciences, vol.9, no.4, pp.1671-1676, 2015 (SCI-Expanded)
- VI. **Monotonicity-preserving doubly infinite matrices**  
Akgun F. A., Rhoades B. E.  
APPLIED MATHEMATICS AND COMPUTATION, vol.235, pp.105-109, 2014 (SCI-Expanded)
- VII. **Absolute Tauberian constants for H-J Hausdorff matrices**  
AYDIN AKGÜN F., Rhoades B.  
Applied Mathematics and Information Sciences, vol.7, no.4, pp.1405-1413, 2013 (SCI-Expanded)
- VIII. **Properties of some q-Hausdorff matrices**  
Akgun F., Rhoades B. E.  
APPLIED MATHEMATICS AND COMPUTATION, vol.219, no.14, pp.7392-7397, 2013 (SCI-Expanded)
- IX. **Discontinuous Boundary Value Problems with Retarded Argument and Eigenparameter-Dependent Boundary Conditions**  
Akgun F., Bayramov A., Bayramoglu M.  
MEDITERRANEAN JOURNAL OF MATHEMATICS, vol.10, no.1, pp.277-288, 2013 (SCI-Expanded)
- X. **The second regularized trace of differential operator equation with the semi-periodic boundary conditions**  
Bayramov A., Caliskan S., Akgun F.  
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, vol.35, no.18, pp.2185-2197, 2012 (SCI-Expanded)
- XI. **Upper bounds for E-J matrices**  
Akgun F., Rhoades B. E.  
APPLIED MATHEMATICS & INFORMATION SCIENCES, vol.6, no.3, pp.1125-1127, 2012 (SCI-Expanded)
- XII. **The equivalence of generalized Holder and Cesaro matrices**  
Akgun F., Rhoades B. E.  
APPLIED MATHEMATICS AND COMPUTATION, vol.218, no.12, pp.6677-6683, 2012 (SCI-Expanded)

## Articles Published in Other Journals

- I. **NUMERICAL METHOD FOR SOLUTION OF FOURTH-ORDER VOLTERRA INTEGRO-DIFFERENTIAL EQUATIONS BY GREEN'S FUNCTION**

- Aydın Akgün F., Rasulov Z.  
KRAGUJEVAC JOURNAL OF MATHEMATICS, vol.49, no.3, pp.485-494, 2025 (Scopus)
- II. **A new IoT system for non-contact body temperature sensing and warning**  
AYDIN AKGÜN F., Soytürk G., Dede M.  
Sigma Journal of Engineering and Natural Sciences, vol.41, no.5, pp.892-899, 2023 (ESCI)
- III. **Generalized iteration method for the solution of fourth order BVP via Green's function**  
AYDIN AKGÜN F., Rasulov Z.  
European Journal of Pure and Applied Mathematics, vol.14, no.3, pp.969-979, 2021 (Scopus)
- IV. **Global Bifurcation of Fourth-Order Nonlinear Eigenvalue Problems' Solution**  
AYDIN AKGÜN F.  
International Journal of Differential Equations, vol.2021, 2021 (ESCI)
- V. **E-J Summability of Orthogonal Series**  
Akgun F. A., Rhoades B. E.  
EUROPEAN JOURNAL OF PURE AND APPLIED MATHEMATICS, vol.13, no.3, pp.390-402, 2020 (ESCI)
- VI. **On Fixed Point Results for Multivalued Operators in  $b_2$  Metric Spaces**  
Aydın Akgün F.  
Erzincan Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.13, no.20, pp.472-488, 2020 (Peer-Reviewed Journal)
- VII. **STRUCTURAL PROPERTIES OF H-J MATRICES**  
Aydın Akgün F., Rhoades B.  
JOURNAL OF INEQUALITIES AND SPECIAL FUNCTIONS, vol.9, no.3, pp.28-33, 2018 (ESCI)
- VIII. **Monotonicity Preserving Matrices**  
Aydın Akgün F., Rhoades B. R., Mahmood Mohammed S.  
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.21, no.3, pp.522-526, 2017 (Peer-Reviewed Journal)
- IX. **ABSOLUTE TAUBERIAN CONSTANTS FOR LOWER TRIANGULAR MATRICES**  
Aydın Akgün F., Rhoades B.  
SARAJEVO JOURNAL OF MATHEMATICS, vol.9, no.4, pp.1671-1675, 2015 (Peer-Reviewed Journal)
- X. **Boundary Value Problem with Matrix Coefficient and Eigenparameter in the Boundary Condition**  
AYDIN AKGÜN F., BAYRAMOĞLU M.  
International Journal of Functional Analysis, Operator Theory and Applications, vol.3, no.1, pp.77-91, 2011 (Peer-Reviewed Journal)
- XI. **Green Function of Discontinuous Boundary Value Problem with Eigenparameter in Boundary Conditions**  
Aydın Akgün F.  
Sigma Mühendislik ve Fen Bilimleri Dergisi, vol.1, no.28, pp.15-25, 2010 (Peer-Reviewed Journal)
- XII. **Factorable Generalized Hausdorff matrices**  
AYDIN AKGÜN F., RHOADES B.  
Journal of Advanced Math. Studies, vol.3, no.1, pp.1-8, 2010 (Peer-Reviewed Journal)
- XIII. **On a Boundary Value Problem with Matrix Coefficient which has Spectral Parameter in Boundary Condition**  
AYDIN AKGÜN F.  
Sigma Mühendislik ve Fen Bilimleri Dergisi, vol.26, no.3, pp.175-191, 2008 (Peer-Reviewed Journal)
- XIV. **On the Green Function of a Second Ordered Differential Equation with Operator Coefficient**  
AYDIN AKGÜN F.  
ANALELE,FASCICOLA MATEMATICA, vol.8, no.8, pp.5-22, 2006 (Peer-Reviewed Journal)
- XV. **Calculated of Regularized Trace of an Even Order Differential Equation in Final Interval**  
Aydın Akgün F.  
Sigma Journal of Engineering and Natural Sciences, vol.4, no.22, pp.279-293, 2004 (ESCI)
- XVI. **Asymptotic Expression of Eigenvalues Number of Second Order Sturm-Liouville Operator Equation with Operator Coefficient Given in Real Axis**  
AYDIN AKGÜN F.  
YTÜD, vol.2003, no.2, pp.111-124, 2003 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Monotonicity Preserving Matrices**  
Aydın Akgün F.  
1st international conference on Advances in Science and Arts, İstanbul, Turkey, 29 - 31 March 2017, pp.1
- II. **Matrices Which Preserve Decreasing Sequences**  
AYDIN AKGÜN F.  
ICRAPAM 2016, Muğla, Turkey, 19 May 2016, pp.1
- III. **Some Properties Of Generalized Hausdorff Matrices**  
AYDIN AKGÜN F.  
ICRAPAM 2016, Muğla, Turkey, 19 May 2016, pp.1
- IV. **Absolute Tauberian Constants**  
AYDIN AKGÜN F.  
IECMSA - 2015, Atina, Greece, 31 August 2015, pp.1
- V. **Matrices that Commute with Generalized Hausdorff**  
AYDIN AKGÜN F.  
ICRAPAM, İstanbul, Turkey, 03 July 2015, pp.5
- VI. **Generalization of Hausdorff Matrices**  
AYDIN AKGÜN F.  
Recent Advances in Pure and Applied Mathematics (ICRAPAM 2014), 01 November 2014
- VII. **Absolute Tauberian constants for H-J Hausdorff matrices**  
Akgun F., Rhoades B. E.  
International Conference of Numerical Analysis and Applied Mathematics, ICNAAM 2012, Kos, Greece, 19 - 25 September 2012, vol.1479, pp.932-935
- VIII. **On a Boundary Value Problem with Spectral Parameter in Boundary Conditions**  
AYDIN AKGÜN F.  
II. Turkish World Mathematic Conference, 01 July 2007
- IX. **On the Green Function of a second ordered Differential Equations with Operator Coefficient**  
Aydın Akgün F.  
Several aspects of biology, chemistry, computer science, mathematics and physics an International Conference, Oradea, Romania, 11 - 13 November 2005, pp.1
- X. **Resolvent Of Schrödinger Operator Equation Given in n-Dimensional Space**  
AYDIN AKGÜN F.  
International Workshop On Analysis and Its Applications, 01 September 2004
- XI. **On Green Function of Fourth Ordered Differential Equation with Operator Coefficient**  
Aydın Akgün F.  
International Conference on Non-Linear Operators ,Differential Equations and Applications,, Cluj-Napoca, Romania, 24 - 27 August 2004, pp.45
- XII. **Spectral Properties of Sturm-Liouville Problem which has Singularity with Eigenvalue in Boundary Condition**  
Aydın Akgün F.  
International Conference on Non-Linear Operators, Differential Equations and Applications, Cluj-Napoca, Romania, 24 - 27 August 2004, pp.125

## Supported Projects

AYDIN AKGÜN F., YEŞİL Ü., RASULOV Z., Project Supported by Higher Education Institutions, Yüksek mertebeden Sınır Değer Problemleri için Green fonksiyonu ile yeni iterasyon yöntemi, 2021 - 2022

Aydın Akgün F., Rasulov Z., TUBITAK Project, Yüksek mertebeden Sınır Değer Problemleri için Green fonksiyonu ile yeni ve daha hızlı iterasyon yönteminin elde edilmesi, 2021 - 2022

Aydın Akgün F., İrdem S., TUBITAK Project, Otonom Araç Adaptive Cruise Control Tasarımı, 2021 - 2022  
Aydın Akgün F., Farajı I., TUBITAK Project, Görme Engelliler İçin Kitap Okuma Sistemi (Görmeden de Okuyabilirsin), 2021 - 2022  
Aydın Akgün F., Technopark, VÜCUT SICAKLIKLARININ TEMASSIZ TESPİTİ VE TAKİP SİSTEMİ, 2020 - 2021  
Aydın Akgün F., Soytürk G., Dede M., TUBITAK Project, VÜCUT SICAKLIKLARININ TEMASSIZ TESPİT VE UYARI SİSTEMİ, 2017 - 2018  
AYDIN AKGÜN F., Project Supported by Higher Education Institutions, Hausdorff Matrislerine Ait Bazı Teoremlerin Genelleştirilmesi, 2014 - 2016

## Patent

Aydın Akgün F., Vücut Sıcaklık Takip Sistemi, Patent, CHAPTER A Human Needs, The Invention Registration Number: 2019 07825 , Standard Registration, 2020

## Activities in Scientific Journals

Special Issue Editor, 2015 - 2016

## Scientific Refereeing

BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY, SCI Journal, September 2020  
Fundamental Journal of Mathematics and Applications, Other Journals, December 2019  
MATHEMATICA SLOVACA, Journal Indexed in SCI-E, October 2019  
LINEAR & MULTILINEAR ALGEBRA, Journal Indexed in SCI-E, July 2019  
TURKISH JOURNAL OF MATHEMATICS, SCI Journal, April 2019  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, SCI Journal, April 2019  
Sakarya University Journal of Science, Other Indexed Journal, December 2017  
Proceedings of the Institute of Mathematics and Mechanics, SCI Journal, September 2016  
AMS Mathematical Reviews/MathSciNet, SCI Journal, February 2016  
Proceedings of the Institute of Mathematics and Mechanics, SCI Journal, January 2016  
journal of Inequalities and Applications-guest editor, SCI Journal, November 2014

## Scientific Consultations

TUBITAK, Project Consultancy, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, Turkey, 2016 - 2016

## Tasks In Event Organizations

Aydın Akgün F., International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM2016), Scientific Congress, Muğla, Turkey, Mayıs 2016  
Aydın Akgün F., Düzenleme Kurulu Üyeliği, International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM2015), Scientific Congress, İstanbul, Turkey, Haziran 2015  
Aydın Akgün F., Aydoğdu İ., International Conference on Applied Analysis and Algebra, Scientific Congress, İstanbul, Turkey, Temmuz 2012  
Aydın Akgün F., Köroğlu M. E., AYDOĞDU İ., International Conference on Applied Analysis and Algebra, Scientific Congress, İstanbul, Turkey, Temmuz 2011

## **Metrics**

Publication: 40

Citation (WoS): 26

Citation (Scopus): 32

H-Index (WoS): 2

H-Index (Scopus): 3

## **Congress and Symposium Activities**

EU programme "operator theory methods for differential Equations", Invited Speaker, Warszawa, Poland, 2007

## **Invited Talks**

Operator Theory Methods For Differential Equations, Seminar, Institute of Mathematics, Polish Academy of Science, Turkey, November 2007

## **Awards**

Aydın Akgün F., Dede M., Soytürk G., ALTIN MADALYA, Isif 2020 İstanbul Uluslararası Buluş Fuar, September 2020

AYDIN AKGÜN F., En çok yayın yapan yardımcı doçent ödülü(2.grup), ytü, March 2015

## **Entrepreneurship Activities**

Limited, LOHA TEKNOLOJİ, 07 December 2020, Founder Owner

## **Non Academic Experience**

Yıldız Teknik Üniversitesi

Indiana University