

# Prof. AHMET REFİK BAHADIR

## Personal Information

**Email:** refik.bahadir@inonu.edu.tr

**Web:** <https://avesis.inonu.edu.tr/refik.bahadir>

## Education Information

Doctorate, The University of Bath, Department Of Mathematical Sciences, Uygulamalı Matematik, United Kingdom 1991 - 1994

Postgraduate, The University of Bath, Department Of Mathematical Sciences, Uygulamalı Matematik, United Kingdom 1989 - 1991

Postgraduate, Inonu University, Fen Bilimleri Enstitüsü, Analiz Ve Fonksiyonlar Teorisi, Turkey 1985 - 1987

Undergraduate, Inonu University, Fen-Edebiyat Fakültesi, Matematik, Turkey 1980 - 1984

## Foreign Languages

English, B2 Upper Intermediate

## Dissertations

Doctorate, Two-Dimensional Computer Simulation of In-Situ Combustion Oil Recovery Process and Iterative Methods, The University of Bath, Department Of Mathematical Sciences, Numerical Analysis, 1994

Postgraduate, On an In-Situ Combustion Simulator, The University of Bath, Department Of Mathematical Sciences, Numerical Analysis, 1991

Postgraduate, Banach Limitleri ve Kuvvetli Regüler Matrisler Hakkında, Inonu University, Fen Bilimleri Enstitüsü, Analiz Ve Fonksiyonlar Teorisi Anabilim Dalı, 1987

## Research Areas

Mathematics, Differential Equations, Numerical Analysis, Natural Sciences

## Academic Titles / Tasks

Professor, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2008 - Continues

Associate Professor, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2000 - 2008

Assistant Professor, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1995 - 2000

Research Assistant, University of Bath, Mathematical Sciences, Mathematics, 1989 - 1994

Research Assistant, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1984 - 1989

## Academic and Administrative Experience

Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2006 - Continues

Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1997 - 2006

## Courses

Analiz II, Undergraduate, 2013-2014  
Mühendislik Matematiği (İnş. Müh), Undergraduate, 2013-2014  
Genel Matematik (İnş. Müh), Undergraduate, 2013-2014  
Sınır Değer Problemleri, Undergraduate Minor, 2013-2014  
Yüksek Matematik (Kim. Müh), Undergraduate, 2013-2014  
Analiz I, Undergraduate, 2013-2014  
Sayısal Yöntemler (Bil. Müh), Undergraduate, 2013-2014  
Türevsel Denklemler (Bil. Müh), Undergraduate, 2013-2014  
Lineer Denklem Sistemleri, Undergraduate Minor, 2013-2014  
Sayısal Yöntemler (Bil. Müh), Undergraduate, 2012-2013  
Sınır Değer Problemleri, Undergraduate Minor, 2012-2013  
Mühendislik Matematiği (İnş. Müh), Undergraduate, 2012-2013  
Doğrusal Programlama, Undergraduate, 2012-2013  
Analiz I, Undergraduate, 2012-2013  
Analiz II , Undergraduate, 2012-2013  
Diferansiyel Denklemler (Fizik), Undergraduate, 2012-2013  
Mühendislik Matematiği (İnş. Müh), Undergraduate, 2011-2012  
Sayısal Yöntemler (Bil. Müh), Undergraduate, 2011-2012  
Diferansiyel Denklemler (Maden Müh), Undergraduate, 2011-2012  
Analiz II , Undergraduate, 2011-2012  
Analiz I, Undergraduate, 2011-2012  
Diferansiyel Denklemler (Fizik Böl), Undergraduate, 2011-2012

## Advising Theses

Bahadır A. R., Lane-Emden denkleminin sonlu fark yöntemi ile nümerik çözümü, Postgraduate, G.ÖZDEMİR(Student), 2019

BAHADIR A. R., Burger Denkleminin Kapalı Üstel Sonlu Fark Yöntemi İle Çözümü, Doctorate, B.İnan(Student), 2014

BAHADIR A. R., Isı Denkleminin Üstel Sonlu Fark Yöntemi ile Çözümü, Postgraduate, B.İnan(Student), 2009

BAHADIR A. R., Burger Denkleminin Sınır Eleman Yöntemi İle Çözümü, Postgraduate, M.Sağlam(Student), 2002

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

- I. **A Fully Implicit Finite Difference Approach for Numerical Solution of the Generalized Equal Width (GEW) Equation**  
İNAN B., BAHADIR A. R.  
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES INDIA SECTION A-PHYSICAL SCIENCES, vol.90, no.2, pp.299-308, 2020 (SCI-Expanded)
- II. **Numerical solution of the one-dimensional Burgers' equation: Implicit and fully implicit exponential finite difference methods**  
İNAN B., BAHADIR A. R.  
PRAMANA-JOURNAL OF PHYSICS, vol.81, no.4, pp.547-556, 2013 (SCI-Expanded)
- III. **A numerical approach to hydromagnetic squeezed flow and heat transfer between two parallel disks**

BAHADIR A. R., ABBASOV T.

INDUSTRIAL LUBRICATION AND TRIBOLOGY, vol.63, pp.63-71, 2011 (SCI-Expanded)

- IV. **Surprising magnetic behavior of cobalt(II) ion in recently prepared macrocycle complexes. Distortion versus intermolecular antiferromagnetic exchange interactions**  
Bayri A., Bahadir A. R., Avcu F. M., AYTEKIN O.  
TRANSITION METAL CHEMISTRY, vol.30, no.8, pp.987-991, 2005 (SCI-Expanded)
- V. **Magnetoimpedance effect in electrochemically etched CoFeSiB amorphous wires**  
Atalay F., Atalay S., Kaya H., Bahadir A. R.  
PHYSICA B-CONDENSED MATTER, vol.364, pp.294-299, 2005 (SCI-Expanded)
- VI. **Exponential finite-difference method applied to Korteweg-de Vries equation for small times**  
Bahadir A. R.  
APPLIED MATHEMATICS AND COMPUTATION, vol.160, no.3, pp.675-682, 2005 (SCI-Expanded)
- VII. **The investigation of the transient regimes in the nonlinear systems by the generalized classical method**  
Abbasov T., Bahadir A. R.  
MATHEMATICAL PROBLEMS IN ENGINEERING, no.5, pp.503-519, 2005 (SCI-Expanded)
- VIII. **A numerical investigation of the liquid flow velocity over an infinity plate which is taking place in a magnetic field**  
Bahadir A. R., Abbasov T.  
INTERNATIONAL JOURNAL OF APPLIED ELECTROMAGNETICS AND MECHANICS, vol.21, no.1, pp.1-10, 2005 (SCI-Expanded)
- IX. **Application of cubic B-spline finite element technique to the thermistor problem**  
Bahadir A. R.  
APPLIED MATHEMATICS AND COMPUTATION, vol.149, no.2, pp.379-387, 2004 (SCI-Expanded)
- X. **A fully implicit finite-difference scheme for two-dimensional Burgers' equations**  
Bahadir A. R.  
APPLIED MATHEMATICS AND COMPUTATION, vol.137, no.1, pp.131-137, 2003 (SCI-Expanded)
- XI. **On the performance of certain direct and iterative methods on equations arising on a two-dimensional in situ combustion simulator**  
Bahadir A. R., ELLERBY F.  
APPLIED MATHEMATICS AND COMPUTATION, vol.125, pp.347-358, 2002 (SCI-Expanded)
- XII. **Steady-state solution of the PTC thermistor problem using a quadratic spline finite element method**  
Bahadir A. R.  
MATHEMATICAL PROBLEMS IN ENGINEERING, vol.8, no.2, pp.101-109, 2002 (SCI-Expanded)
- XIII. **A small time solutions for the Korteweg-de Vries equation**  
Kutluay S., Bahadir A. R., Ozdes A.  
APPLIED MATHEMATICS AND COMPUTATION, vol.107, pp.203-210, 2000 (SCI-Expanded)
- XIV. **A variety of finite difference methods to the thermistor with a new modified electrical conductivity**  
Kutluay S., Bahadir A. R., Ozdes A.  
APPLIED MATHEMATICS AND COMPUTATION, vol.106, pp.205-213, 1999 (SCI-Expanded)
- XV. **Various methods to the thermistor problem with a bulk electrical conductivity**  
Kutluay S., Bahadir A. R., Ozdes A.  
INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING, vol.45, no.1, pp.1-12, 1999 (SCI-Expanded)
- XVI. **Numerical solution of one-dimensional Burgers equation: explicit and exact-explicit finite difference methods**  
Kutluay S., Bahadir A. R., Ozdes A.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.103, no.2, pp.251-261, 1999 (SCI-Expanded)
- XVII. **The numerical solution of one-phase classical Stefan problem**  
Kutluay S., Bahadir A. R., Ozdes A.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.81, no.1, pp.135-144, 1997 (SCI-Expanded)

## Articles Published in Other Journals

- I. **A fully implicit finite difference scheme for the regularized long wave equation**  
INAN B., BAHADIR A. R.  
General Mathematics Notes, vol.33, no.2, pp.40-59, 2016 (Peer-Reviewed Journal)
- II. **Numerical solutions of the generalized Burgers-Huxley equation by implicit exponential finite difference method**  
Inan B., BAHADIR A. R.  
JOURNAL OF APPLIED MATHEMATICS STATISTICS AND INFORMATICS, vol.11, no.2, pp.57-67, 2015 (ESCI)
- III. **Two different exponential finite difference methods for numerical solutions of the linearized Burgers' equation**  
INAN B., BAHADIR A. R.  
International Journal of Modern Mathematical Sciences, vol.13, no.4, pp.449-461, 2015 (Peer-Reviewed Journal)
- IV. **Numerical Solutions of MRLW Equation by a Fully Implicit Finite-Difference Scheme**  
Inan B., BAHADIR A. R.  
JOURNAL OF MATHEMATICS AND COMPUTER SCIENCE-JMCS, vol.15, no.3, pp.228-239, 2015 (ESCI)
- V. **A numerical solution of the Burgers' equation using a Crank-Nicolson exponential finite difference method**  
INAN B., BAHADIR A. R.  
Journal of Mathematical and Computational Science, vol.4, no.5, pp.849-860, 2014 (Peer-Reviewed Journal)
- VI. **A numerical solution of the equal width wave equation using a fully implicit finite difference method**  
INAN B., BAHADIR A. R.  
Turkish Journal of Mathematics & Computer Science, vol.2, pp.1-14, 2014 (Peer-Reviewed Journal)
- VII. **An explicit exponential finite difference method for the Burgers' equation**  
INAN B., BAHADIR A. R.  
European International Journal of Science and Technology, vol.2, no.10, pp.61-72, 2013 (Peer-Reviewed Journal)
- VIII. **Numerical solution for one-dimensional Burgers' equation using a fully implicit finite-difference method**  
BAHADIR A. R.  
International Journal of Applied Mathematics, vol.1, no.8, pp.897-909, 1999 (Scopus)
- IX. **A heat balance integral solution to Burger's equation in one space dimension**  
ÖZDEŞ A., KUTLUAY S., BAHADIR A. R., ŞAHİN A.  
Balkan Physics Letters, vol.4, no.4, pp.251-256, 1986 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **A New Numerical Solution of the Linearized Burgers' Equation**  
INAN B., BAHADIR A. R.  
28. Ulusal Matematik Sempozyumu, (UMS2015), Antalya, Turkey, 7 - 09 September 2015, pp.179
- II. **Solitary waves of the MRLW equation using fully implicit finite difference method**  
INAN B., BAHADIR A. R.  
2. nd International Eurasian Conference on Mathematical Science and Applications, Saraybosna, Bosnia And Herzegovina, 26 - 29 August 2013, pp.145
- III. **Torsional stress impedance effect in Fe71Cr7Si9B13 amorphous wire**  
Atalay F., Bayri N., Bahadir A. R., ATALAY S.  
2nd Seeheim Conference on Magnetism (SCM2004), Seeheim, Germany, 27 June - 01 July 2004, pp.3328-3331
- IV. **Salter osteotomisinin yeni ve değişik bir modifikasyonu: Basamaklı osteotomi**  
Kaygusuz A., Bora A., BAHADIR A. R.  
XVII. Ulusal Ortopedi ve Travmatoloji Kongresi, Antalya, Turkey, 24 - 29 October 2001, pp.304-306
- V. **Burger denkleminin sonlu farklar ile çözümü**

BAHADIR A. R.

I. Türk Dünyası Sempozyumu, Elazığ, Turkey, 29 June - 02 July 1999, pp.159

VI. **Stefan problemi için deęişken zaman adım yönteminin bir modifikasyonu**

KUTLUAY S., BAHADIR A. R., ÖZDEŞ A.

XI. Ulusal Matematik Sempozyumu, Isparta, Turkey, 7 - 11 September 1998, pp.64

VII. **1-boyutlu parabolik problemler için bir direkt varyasyonel ardışık yaklaşım yöntemi**

ÖZDEŞ A., BAHADIR A. R., KUTLUAY S.

Atatürk Üniversitesi 40. Kuruluş Yıldönümü Matematik Sempozyumu, Erzurum, Turkey, 20 - 22 May 1998, pp.154-162

## **Metrics**

Publication: 33

Citation (WoS): 431

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H-Index (Scopus): 10