

Curriculum Vitae

Personal Data:

| Name | Surname | Date of Birth | Nationality | Sex | Marital Status |
|--------------|-------------|-------------------|-------------|----------|----------------|
| <i>Karim</i> | <i>Ivaz</i> | <i>22/06/1968</i> | <i>Iran</i> | <i>M</i> | <i>Married</i> |
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|------------------|--------------|--------------------|
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Educational Background: (Last One First)

| Certificate Degree | Field of Specialization | Name of Institution Attended | Date Received |
|--------------------|-------------------------|--|---------------|
| <i>Ph.D.</i> | <i>Applied Math.</i> | <i>Iran University of Science & Technology</i> | <i>2000</i> |
| <i>M.Sc.</i> | <i>Applied Math</i> | <i>Iran University of Science & Technology</i> | <i>1995</i> |
| <i>B.Sc.</i> | <i>Applied Math</i> | <i>Shahid Bahona University , Kerman, Iran</i> | <i>1993</i> |

Title of Post-Graduate Thesis: An Stefan Problem

Title of Doctorate Thesis: Free Boundary Problem

Teaching Experiences: (Last One First)

| Title of Course | Level | Dates | | Name of Institution |
|----------------------------------|-----------------------|-------|------|---------------------------------|
| | | From | To | |
| Advance Numerical Analysis | M.Sc. <i>Ph.D.</i> | 2003 | Now | Faculty of Mathematical Science |
| Numerical Methods in O.D.E | M.Sc. | 2003 | Now | Faculty of Mathematical Science |
| Numerical Analysis (1) | B.Sc. | 2000 | Now | Faculty of Mathematical Science |
| Numerical Analysis (2) | B.Sc. | 2001 | Now | Faculty of Mathematical Science |
| Advance Mathematical Engineering | B. Sc. | 1996 | Now | Faculty of Mathematical Science |
| Differential Equation | B. Sc. | 1996 | Now | Faculty of Mathematical Science |
| Calculus (I, II, III) | B.Sc. | 1996 | Now | Faculty of Mathematical Science |
| Numerical Methods | B.Sc. | 1995 | Now | Faculty of Mathematical Science |
| Numerical Meth. In Integral Eq. | M. Sc. | 2004 | 2005 | Faculty of Mathematical Science |
| Theory of Partial Diff. Equ. | M. Sc. | 2005 | Now | Faculty of Mathematical Science |
| Advance Topics in PDE | Ph.D. | 2008 | | Faculty of Mathematical Science |

Administrative Responsibilities: (Last One First)

| Job Title | Place of Work | Date | | Name of Institution |
|---|------------------------|------|------|---------------------|
| | | From | To | |
| Head of Department of Applied Mathematics | Faculty of Mathematics | 2004 | 2005 | Univ. of Tabriz |
| Dean | Faculty of Mathematics | 2005 | Now | Univ. of Tabriz |
| co-chair of 7th seminar of Diff. Equ. | Faculty of Mathematics | 2005 | | Univ. of Tabriz |

Academic Positions: (Last One First)

| Title of Position | Field of Specialization | Date | | Name of Institution |
|-------------------|-------------------------|------|------|---|
| | | From | To | |
| Assistant Prof. | Applied Maths. | 2000 | 2002 | Iran University of Science and Technology |
| Assistant Prof. | Applied Maths. | 2003 | 2007 | University of Tabriz |
| Associate Prof. | Applied Maths. | 2007 | now | University of Tabriz |
| Professor | Applied Maths. | 2011 | now | University of Tabriz |

Master and Doctorate Thesis Supervision:

| No | Full Name of Student | Level | Title of Thesis |
|----|----------------------|--------|--|
| 1 | Rahman Abdollahi | M.Sc. | Analytical Modelling of Gas production from Hydrates in porous Media |
| 2 | Azar Azari | M.Sc | Mathematical Modelling of Tumour Growth |
| 3 | Ahmad Mojallal | M. Sc | Mathematical Modeling for Czocheralski Process of Crystal |
| 4 | E. Kh. Gandahar | M. Sc | Moving bands and moving boundaries in an Hybrid model ... |
| 5 | G. Aghabalazadeh | M. Sc. | Optimal Chemotrapy Regimes: Influence of Tumors on ... |
| 6 | F. Mokhtarnezhad | M.sc | A Numrical Method for Solving Nonlinear Partial Diff. ... |
| 7 | Kobra Abdoli | M.Sc | Fibroblast migration and collagen deposition during dermal |
| 8 | Mostafa Mohammadi | M.Sc. | Comparison of various artificial intelligence methods ... |
| 9 | Bahram Sadigh | M.Sc. | Studing Linear Time-Varying Operators in Mobile |
| 10 | B. Babayar | Ph.D. | Numerical Methods for Free boundary problem with Kinetic |
| 11 | A. R. Khastan | Ph.D. | Numerical Methods for Fuzzy Differential Equations |
| 12 | Parviz Darania | Ph.D. | The modification of advanced numerical methods for ... |

Publications:

A: Books

| Title | Type of Work | | Publisher | Date of Publication |
|-------------------------|--------------|-------------|----------------------|---------------------|
| | Translation | Compilation | | |
| Engineering Mathematics | | × | University of Tabriz | 2011 |
| Differential Equations | | × | University of Tabriz | 2014 |

B: Papers

| Title of Paper | Place of Publication | Date of Publicatio |
|---|---|--------------------|
| The Stefan problem with kinetic function at the free boundarey | J.Sci.Iran | 1999 |
| Free boundary problem with kinetic function | J.App.Math | 2001 |
| Uniqueness of solution for a class of Stefan problem | J.Sci.Iran | 2002 |
| Uniqueness for Inverse Heat Equation | Southeast Asian Bulletin of Mathematics | 2004 |
| An Inverse Soludification of pure Substance problem in two Diemention | Applied Mathematics Letter | 2005 |
| Asymptotic Behavior of Solution of the Modified Two-Phase Free Boundary Problem | Southeast Asian Bulletin of Mathematics | 2005 |
| Newton-Tau Numerical Solution of a System of Nonlinear Fredholm Integral Equations of Second Kind | Appl. Comput. Math. | 2006 |
| Comparison of thetrapezoidal rule error with the spline rulr error | Appl. Math. And Compu. | 2006 |
| numerical solution of nonlinear fredholm integro-differential equations | Southeast Asian Bulletin of Mathematics | 2009 |

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|---|--|----------------------|
| An Inverse Stefan Problem | Engineering Letters | 2009 |
| Control of the Moving Boundary | Southeast Asian Bulletin of Mathematics | 2010 |
| Nonlinear Two-Phase Stefan Problem | J.Sci.Iran | 2007 |
| Newton-Tau Method (Lecture Note) | Advance in Industrial Engineering and Operations Research | 2008 Springer |
| Numerical solution of fuzzy differential equations by Nyström method | Chaos, Solitons & Fractals | 2008 |
| Numerical solution of nonlinear Volterra-Fredholm integro-differential equations | Computers & Mathematics | 2008 |
| Newton-Product integration for a Stefan problem with kinetics | Bulletin Iranian Math. Soc. | 2012 |
| New computational method for solving some 2-dimensional nonlinear Volterra integro-differential equations | Numer Algor | 2011 |
| Convergence properties of product integration solution in singular system of Volterra integral equation | Bulletin Iranian Math. Soc. | 2011 |
| Unique continuation and inverse problems for heat equations | AMO- Advanced Modeling and Optimization | 2010 |
| Numerical solution of fuzzy differential equations under generalized differentiability | Nonlinear Analysis: Hibrid systems | 2009 |
| New results on multiple solutions for th-order fuzzy differential equations under generalized differentiability | Boundary Value Problems | 2009 |
| Numerical solution of nonlinear Volterra–Fredholm integro-differential equations | Computers & Mathematics with Applications | 2008 |
| An efficient cubic spline approximation for variable-order fractional differential equations with time delay | Nonlinear Dynamics | 2017 |
| A numerical method for fuzzy differential equations and hybrid fuzzy differential equations | Abstract and Applied Analysis | 2013 |
| NINE POINT MULTISTEP METHODS FOR LINEAR TRANSPORT EQUATION. | Journal of Concrete & Applicable Mathematics | 2013 |
| SOLVING HIGHER-ORDER FUZZY DIFFERENTIAL EQUATIONS UNDER GENERALIZED DIFFERENTIABILITY | A subclass of analytic functions defined by a generalized Salagean and Purohith | 2009 |
| A NUMERICAL IMPROVEMENT IN ANALYZING THE DYNAMIC CHARACTERISTICS OF AN ELECTROSTATICALLY ACTUATED MICRO-BEAM IN FLUID LOADIN | International Journal of Engineering-Transactions A: Basics | 2016 |
| A theoretical study for the vibration of a cantilever microbeam as a free boundary problem | Applied Mathematical Modelling | 2016 |

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|--|--|------|
| A new approach for solving the one-phase Stefan problem with temperature-boundary specification | Advanced Modeling and Optimization | 2013 |
| Analyzing Free Vibration of a Cantilever Microbeam Submerged in Fluid with Free Boundary Approach. | Journal of Applied Fluid Mechanics | 2017 |
| Approximate solution of dual integral equations using Chebyshev polynomials | International Journal of Computer Mathematics | 2017 |
| A NUMERICAL METHOD TO DETERMINE THE OPTIMAL STOPPING BOUNDARY FOR INSTALLMENT OPTION | TWMS JOURNAL OF PURE AND APPLIED MATHEMATICS | 2017 |
| Mathematical analysis and pricing of the European continuous installment call option | Journal of Mathematical Modeling | 2016 |
| Valuation of installment option by penalty method | Computational Methods for Differential Equations | 2015 |
| Approximate solution of dual integral equations | Bulletin of the Iranian Mathematical Society | 2016 |
| Inexact steepest descent algorithm for obtaining t-best approximation in a fuzzy normed space | Journal of Intelligent & Fuzzy Systems | 2016 |
| A New Combined Optimization Model for Wireless Sensor Networks | Image Processing & Communications | 2012 |
| Multi-objective optimization model for wireless sensor networks | Communication Systems, Networks & Digital Signal Processing (CSNDSP) | 2012 |
| Political uncertainty and stock prices | Advanced Modeling and Optimization | 2017 |
| Variational Iteration Method for Solving Systems of Linear Delay Differential Equations | International Journal of Computational and Mathematical Sciences | 2012 |

Research Activities:

| Title of Project | Place of Work | Dates | |
|--|---|-------|------|
| | | From | To |
| Asymptotic Behavior of Solution of the Modified Two-Phase Free Boundary Problem | University of Tabriz | 2004 | 2005 |
| طرح امکان سنجی ایجاد فرصتهای شغلی جدید در ایران با مطالعه موردی ساخت و تولید نرم افزارهای عددی | University of Tabriz | 2003 | 2004 |
| بررسی و تحقیق مسائل هندلولوی با کران آزاد | University of Tabriz | 2008 | 2008 |
| حل عددی معادلات دیفرانسیل فازی تحت مشتق تعمیم یافته | Research Institute for Fundamental Sciences | 2008 | 2009 |

Research Interests:

- 1-Free and moving boundary problem
- 2-Integral equation
- 3-Numerical method in PDE and ODE
- 4-Industrial Mathematics
- 5- Financial Mathematics

Papers Presented at National and International Scientific Assemblies:

| Title of Paper | Title and Place of Assembly | Date |
|--|---|-------------------------|
| Application of the Banach fixed point theorem for the free boundary problem with kinetic | Banach Algebras Conference july 27 to 9 Agust , Alberta, Canada | 2003 |
| Free boundary problem with a kintic condition | Workshop Dissipative models in phase trasitions Sep. 5-11 cortona, Italy | 2004 |
| An Inverse Stefan Problem | 37-th Anuall Iranian Mathematical Conference, Azarbaijan University of | 2006 |
| Numerical Solution of the Nonlinear Fredholm Integro-differential Equations | One Day Conference on Ordinary Differential Equation & Inverse Problem, IKIU Qazvin | 27 Novembe r 2006 |
| An Inverse Soludification of pure Substance problem in two Diemention | Free Boundary Problems: Theory and Applications, June 7-12, University of Coimbra, Portugal | 2005 |
| Industrial and Applied Mathematics | سی و نهمین کنفرانس ریاضی کشور | 2008 |
| On the Approximate solutions and Stabilityof Stochastic | 8 th Seminar of Differential Equations Dynamical Systems and Their Applications, Isfahan | 2008 |
| Solutions for N th order Fuzzy Differential Equations | 2 th Workshop on Algebric Hyperstructures and Fuzzy Mathematics, University of Mazandaran | 2008 |
| Solving higher-order differential equations under generalized differentiability | The 16 th Conference on Applied and Industrial Mathematics, Romania, 9- 11,2008 | 2008 |
| Newton-Product integration for a Stefan problem with kinetics | Symposium on Trends in Applications of Mathematics to Mechanics, Levico (Italy) | 2008 |

Membership to Scientific Associations:

| Name of Institution/Association | Position Held | Country | Year |
|---------------------------------|---------------|---------|------|
| Iranian Mathematical Society | <i>Member</i> | IRAN | 1995 |

Language Proficiency:

| Language | Degree of Proficiency | | | | | | | | | | | |
|----------|-----------------------|------|------|------|---------|------|------|------|----------|------|------|------|
| | Writing | | | | Reading | | | | Speaking | | | |
| | Native | Good | Fair | Poor | Native | Good | Fair | Poor | Native | Good | Fair | Poor |
| English | | * | | | | * | | | | * | | |
| Farsi | * | | | | * | | | | * | | | |