



Amirkabir University of Technology  
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### Educational Records

#	Degree/Major	University	City	Country	Graduation Date
1	B.Sc	Kashan University	Kashan	Iran	2010
2	M.Sc	Kashan University	Kashan	Iran	2012
3	PhD	Amirkabir University of Technology	Tehran	Iran	2017

### Supervised MSc Theses

#	Thesis title	By	Date
1	Numerical computation of fractional Black-Scholes equation governing European options	Hanieh Amjadian & Mostafa Abbaszadeh	August 2021

### Journal Papers

#### Portal Records

- 1 Ahmed S. Hendy, Mahmoud A. Zaky, Mostafa Abbaszadeh, "Long time behavior of Robin boundary sub-diffusion equation with fractional partial derivatives of Caputo type in differential and difference settings", MATHEMATICS AND COMPUTERS IN SIMULATION, December 2021 Vol. 190, Num. 0, Page 1370-1378, December 2021,

- 2 Mostafa Abbaszadeh, Mehdi Dehghan, Mohammad Ivan Azis, "The meshless local Petrov–Galerkin method based on moving Taylor polynomial approximation to investigate unsteady diffusion–convection problems of anisotropic functionally graded materials related to incompressible flow", *ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS*, November 2021 Vol. 132, Num. 0, Page 469-480, November 2021,
- 3 Ehsan Loghman, Firooz Bakhtiari Nejad, Ali Kamalie Iglie, Mostafa Abbaszadeh, Marco Amabili, "Nonlinear vibration of fractional viscoelastic micro-beams", *INTERNATIONAL JOURNAL OF NON-LINEAR MECHANICS*, November 2021 Vol. 137, Num. 0, Page 1-10, November 2021,
- 4 Mostafa Abbaszadeh, Mostafa Bayat, Mehdi Dehghan, "The local meshless collocation method for numerical simulation of shallow water waves based on generalized equal width (GEW) equation", *WAVE MOTION*, November 2021 Vol. 107, Num. 0, Page 1-19, November 2021,
- 5 Mostafa Abbaszadeh, Mehdi Dehghan, "A Galerkin meshless reproducing kernel particle method for numerical solution of neutral delay time-space distributed-order fractional damped diffusion-wave equation", *APPLIED NUMERICAL MATHEMATICS*, October 2021 Vol. 169, Num. 0, Page 44-63, October 2021,
- 6 Zeinab Gharibi, Mehdi Dehghan, Mostafa Abbaszadeh, "Numerical analysis of locally conservative weak Galerkin dual-mixed finite element method for the time-dependent Poisson–Nernst–Planck system", *COMPUTERS & MATHEMATICS WITH APPLICATIONS*, June 2021 Vol. 92, Num. 0, Page 88-108, June 2021,
- 7 Mostafa Abbaszadeh, Mehdi Dehghan, "Meshless upwind local radial basis function-finite difference technique to simulate the time- fractional distributed-order advection–diffusion equation", *ENGINEERING WITH COMPUTERS*, April 2021 Vol. 37, Num. 0, Page 873-889, April 2021,
- 8 Mostafa Abbaszadeh, Mehdi Dehghan, "The proper orthogonal decomposition modal spectral element method for two-dimensional viscoelastic equation", *THIN-WALLED STRUCTURES*, April 2021 Vol. 161, Num. 107429, Page 1-14, April 2021,
- 9 Mostafa Abbaszadeh, Mostafa Bayat, Mehdi Dehghan, Mohammad Ivan Azis, "Investigation of generalized Couette hydromagnetic flow of two-step exothermic chemical reaction in a channel via the direct meshless local Petrov–Galerkin method", *ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS*, April 2021 Vol. 125, Num. 0, Page 178-189, April 2021,
- 10 Mostafa Abbaszadeh, Mehdi Dehghan, "The Crank-Nicolson/interpolating stabilized element-free Galerkin method to investigate the fractional Galilei invariant advection-diffusion equation", *MATHEMATICAL METHODS IN THE APPLIED SCIENCES*, March 2021 Vol. 44, Num. 0, Page 2752-2768, March 2021,
- 11 Mostafa Abbaszadeh, Mehdi Dehghan, "Numerical investigation of reproducing kernel particle Galerkin method for solving fractional modified distributed-order anomalous sub-diffusion equation with error estimation", *APPLIED MATHEMATICS AND COMPUTATION*, March 2021 Vol. 392, Num. 125718, Page 1-21, March 2021,
- 12 Mostafa Abbaszadeh, Mehdi Dehghan, Amirreza Khodadadian, Nima Noii, Clemens Heitzinger, Thomas Wick, "A reduced-order variational multiscale interpolating element free Galerkin technique based on proper orthogonal decomposition for solving Navier–Stokes equations coupled with a heat transfer equation: Nonstationary incompressible Boussinesq equations", *JOURNAL OF COMPUTATIONAL PHYSICS*, February 2021 Vol. 426, Num. 109875, Page 1-52, February 2021,
- 13 Mostafa Abbaszadeh, Mobina Golmohammadi, Mehdi Dehghan, "Simulation of activator–inhibitor dynamics based on cross-diffusion Brusselator reaction–diffusion system via a differential quadrature-radial point interpolation method (DQ-RPIM) technique", *The European Physical Journal Plus*, January 2021 Vol. 136, Num. 59, Page 1-26, January 2021,
- 14 Mohammad Ivan Azis, Mostafa Abbaszadeh, Mehdi Dehghan, Imam Solek Hudin, "A boundary-only integral equation method for parabolic problems of another class of anisotropic functionally graded materials", *Materialstoday Communications*, December 2020 Vol. 26, Num. 101956, Page 1-9, December 2020,
- 15 Mehdi Dehghan, Nasim Shafieeabyaneh, Mostafa Abbaszadeh, "Application of spectral element method for solving Sobolev equations with error estimation", *APPLIED NUMERICAL MATHEMATICS*, November 2020 Vol. 158, Num. 0, Page 439-462, November 2020,
- 16 Mehdi Dehghan, Nasim Shafieeabyaneh, Mostafa Abbaszadeh, "Numerical and theoretical discussions for solving nonlinear generalized Benjamin–Bona–Mahony–Burgers equation based on the Legendre spectral element method", *NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS*, October 2020 Vol. 37, Num. 1, Page 360-382, October 2020,

- 17 Mostafa Abbaszadeh, Mehdi Dehghan, "Simulation flows with multiple phases and components via the radial basis functions-finite difference (RBF-FD) procedure: Shan-Chen model", ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, October 2020 Vol. 119, Num. 0, Page 151-161, October 2020,
- 18 Ali Ebrahimi Jahan, Mehdi Dehghan, Mostafa Abbaszadeh, "Compact local integrated radial basis functions (Integrated RBF) method for solving system of non-linear advection-diffusion-reaction equations to prevent the groundwater contamination", ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, September 2020 Vol. 121, Num. 0, Page 50-64, September 2020,
- 19 Mostafa Abbaszadeh, Mehdi Dehghan, "Direct meshless local Petrov-Galerkin method to investigate anisotropic potential and plane elastostatic equations of anisotropic functionally graded materials problems", ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, September 2020 Vol. 118, Num. 0, Page 188-201, September 2020,
- 20 Mostafa Abbaszadeh, Mehdi Dehghan, "A POD-based reduced-order Crank-Nicolson/fourth-order alternating direction implicit (ADI) finite difference scheme for solving the two-dimensional distributed-order Riesz space-fractional diffusion equation", APPLIED NUMERICAL MATHEMATICS, August 2020 Vol. 158, Num. 0, Page 271-291, August 2020,
- 21 Mostafa Abbaszadeh, Mehdi Dehghan, Yong Zhou, "Crank-Nicolson/Galerkin spectral method for solving two-dimensional time-space distributed-order weakly singular integro-partial differential equation", JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, August 2020 Vol. 374, Num. 0, Page 1-16, August 2020,
- 22 Mostafa Abbaszadeh, Mehdi Dehghan, "Numerical and analytical investigations for solving the inverse tempered fractional diffusion equation via interpolating element-free Galerkin (IEFG) method.", JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, August 2020 Vol. 143, Num. 0, Page 1917-1933, August 2020,
- 23 Mostafa Abbaszadeh, Mehdi Dehghan, Amirreza Khodadadian, Clemens Heitzinger, "Error analysis of interpolating element free Galerkin method to solve non-linear extended Fisher-Kolmogorov equation", COMPUTERS & MATHEMATICS WITH APPLICATIONS, July 2020 Vol. 80, Num. 1, Page 247-262, July 2020,
- 24 Amirreza Khodadadian, Nima Noii, Maryam Parvizi, Mostafa Abbaszadeh, Thomas Wick, Clemens Heitzinger, "A Bayesian estimation method for variational phase-field fracture problems", COMPUTATIONAL MECHANICS, July 2020 Vol. 66, Num. 0, Page 827-849, July 2020,
- 25 Mostafa Abbaszadeh, Mehdi Dehghan, "Reduced order modeling of time-dependent incompressible Navier-Stokes equation with variable density based on a local radial basis functions-finite difference (LRBF-FD) technique and the POD/DEIM method", COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, June 2020 Vol. 364, Num. 112914, Page 1-28, June 2020,
- 26 Mostafa Abbaszadeh, Mehdi Dehghan, Amirreza Khodadadian, Clemens Heitzinger, "Analysis and application of the interpolating element free Galerkin (IEFG) method to simulate the prevention of groundwater contamination with application in fluid flow", JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, April 2020 Vol. 368, Num. 0, Page 1-17, April 2020,
- 27 Mostafa Abbaszadeh, Mehdi Dehghan, "Investigation of the Oldroyd model as a generalized incompressible Navier-Stokes equation via the interpolating stabilized element free Galerkin technique", APPLIED NUMERICAL MATHEMATICS, April 2020 Vol. 150, Num. 0, Page 274-294, April 2020,
- 28 Mostafa Abbaszadeh, Mehdi Dehghan, Ionel Michael Navon, "A proper orthogonal decomposition variational multiscale meshless interpolating element-free Galerkin method for incompressible magnetohydrodynamics flow", INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, April 2020 Vol. 92, Num. 10, Page 1415-1436, April 2020,
- 29 Mostafa Abbaszadeh, Mehdi Dehghan, "Interior penalty discontinuous Galerkin technique for solving generalized Sobolev equation", APPLIED NUMERICAL MATHEMATICS, March 2020 Vol. 154, Num. 0, Page 172-186, March 2020,
- 30 Mostafa Abbaszadeh, Hanieh Amjadian, "Second-Order Finite Difference/Spectral Element Formulation for Solving the Fractional Advection-Diffusion Equation", Communications on Applied Mathematics and Computation, March 2020 Vol. 1, Num. 1, Page 1-17, March 2020,
- 31 Mostafa Abbaszadeh, Mehdi Dehghan, "An upwind local radial basis functions-differential quadrature (RBFs-DQ) technique to simulate some models arising in water sciences", OCEAN ENGINEERING, February 2020 Vol. 197, Num. 0, Page 1-26, February 2020,
- 32 Mostafa Abbaszadeh, Mehdi Dehghan, "A meshless numerical investigation based on the RBF-QR approach for elasticity problems", AUT Journal of Mathematics and Computing, February 2020 Vol. 1, Num. 1, Page 1-15, February 2020,

- 33 Mostafa Abbaszadeh, Mehdi Dehghan, "A finite-difference procedure to solve weakly singular integro partial differential equation with space-time fractional derivatives", *ENGINEERING WITH COMPUTERS*, January 2020 Vol. 37, Num. 0, Page 2173-2182, January 2020,
- 34 Mostafa Abbaszadeh, Mehdi Dehghan, "A reduced order finite difference method for solving space-fractional reaction-diffusion systems: The Gray-Scott model", *The European Physical Journal Plus*, December 2019 Vol. 134, Num. 0, Page 620-635, December 2019,
- 35 Mostafa Abbaszadeh, Mehdi Dehghan, "Direct meshless local Petrov-Galerkin (DMLPG) method for time-fractional fourth-order reaction-diffusion problem on complex domains", *COMPUTERS & MATHEMATICS WITH APPLICATIONS*, September 2019 Vol. 79, Num. 0, Page 876-888, September 2019,
- 36 Mehdi Dehghan, Mostafa Abbaszadeh, Amirreza Khadadadian, Clemens Heitzinger, "Galerkin proper orthogonal decomposition-reduced order method (POD-ROM) for solving generalized Swift-Hohenberg equation", *INTERNATIONAL JOURNAL OF NUMERICAL METHODS FOR HEAT & FLUID FLOW*, August 2019 Vol. 29, Num. 8, Page 2642-2665, August 2019,
- 37 Mostafa Abbaszadeh, Mehdi Dehghan, Yong Zhou, "Alternating direction implicit-spectral element method (ADI-SEM) for solving multi-dimensional generalized modified anomalous sub-diffusion equation", *COMPUTERS & MATHEMATICS WITH APPLICATIONS*, July 2019 Vol. 78, Num. 0, Page 1772-1792, July 2019,
- 38 Mehdi Dehghan, Mostafa Abbaszadeh, "The simulation of some chemotactic bacteria patterns in liquid medium which arises in tumor growth with blow-up phenomena via a generalized smoothed particle hydrodynamics (GSPH) method", *ENGINEERING WITH COMPUTERS*, June 2019 Vol. 35, Num. 0, Page 875-892, June 2019,
- 39 Mostafa Abbaszadeh, Mehdi Dehghan, "Numerical and analytical investigations for neutral delay fractional damped diffusion-wave equation based on the stabilized interpolating element free Galerkin (IEFG) method", *APPLIED NUMERICAL MATHEMATICS*, May 2019 Vol. 145, Num. 0, Page 488-506, May 2019,
- 40 Mostafa Abbaszadeh, Mehdi Dehghan, "The reproducing kernel particle Petrov-Galerkin method for solving two-dimensional nonstationary incompressible Boussinesq equations", *ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS*, May 2019 Vol. 106, Num. 0, Page 300-308, May 2019,
- 41 Mostafa Abbaszadeh, Mehdi Dehghan, "Analysis of mixed finite element method (MFEM) for solving the generalized fractional reaction-diffusion equation on nonrectangular domains", *COMPUTERS & MATHEMATICS WITH APPLICATIONS*, April 2019 Vol. 78, Num. 0, Page 1531-1547, April 2019,
- 42 Mostafa Abbaszadeh, Mehdi Dehghan, "The interpolating element-free Galerkin method for solving Korteweg-de Vries-Rosenau-regularized long-wave equation with error analysis", *NONLINEAR DYNAMICS*, March 2019 Vol. 96, Num. 0, Page 1345-1365, March 2019,
- 43 Amirreza Khadadadian, Maryam Parvizi, Mostafa Abbaszadeh, Mehdi Dehghan, Clemens Heitzinger, "A multilevel Monte Carlo finite element method for the stochastic Cahn-Hilliard-Cook equation", *COMPUTATIONAL MECHANICS*, February 2019 Vol. 64, Num. 0, Page 937-949, February 2019,
- 44 Mostafa Abbaszadeh, "Error estimate of second-order finite difference scheme for solving the Riesz space distributed-order diffusion equation", *APPLIED MATHEMATICS LETTERS*, January 2019 Vol. 88, Num. 0, Page 179-185, January 2019,
- 45 Mostafa Abbaszadeh, Amirreza Khodadadian, Maryam Parvizi, Mehdi Dehghan, Clemens Heitzinger, "A direct meshless local collocation method for solving stochastic Cahn-Hilliard-Cook and stochastic Swift-Hohenberg equations", *ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS*, January 2019 Vol. 98, Num. 0, Page 253-264, January 2019,
- 46 Gholamreza Karamali, Mehdi Dehghan, Mostafa Abbaszadeh, "Numerical solution of a time-fractional PDE in the electroanalytical chemistry by a local meshless method", *ENGINEERING WITH COMPUTERS*, January 2019 Vol. 35, Num. 1, Page 87-100, January 2019,
- 47 Mehdi Dehghan, Mostafa Abbaszadeh, "Error estimate of finite element/finite difference technique for solution of two-dimensional weakly singular integro-partial differential equation with space and time fractional derivatives", *JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS*, January 2019 Vol. 356, Num. 0, Page 314-328, January 2019,

- 48 Gholamreza Karamali, Mostafa Abbaszadeh, Mehdi Dehghan, "The smoothed particle hydrodynamics method for solving generalized variable coefficient Schrodinger equation and Schrodinger-Boussinesq system", COMPUTATIONAL METHODS FOR DIFFERENTIAL EQUATIONS, January 2019 Vol. 6, Num. 2, Page 215-237, January 2019,
- 49 Mehdi Dehghan, Mostafa Abbaszadeh, "Error analysis and numerical simulation of magnetohydrodynamics (MHD) equation based on the interpolating element free Galerkin (IEFG) method", APPLIED NUMERICAL MATHEMATICS, October 2018 Vol. 137, Num. 0, Page 252-273, October 2018,
- 50 Mehdi Dehghan, Mostafa Abbaszadeh, "The space-splitting idea combined with local radial basis function meshless approach to simulate conservation laws equations", Alexandria Engineering Journal, June 2018 Vol. 57, Num. 0, Page 1137-1156, June 2018,

#### Other Records

- 1 A. Mohebbi---M. Abbaszadeh---M. Dehghan, "The use of a meshless technique based on collocation and radial basis functions for solving the time fractional nonlinear Schrödinger equation arising in quantum mechanics", Engineering Analysis with Boundary Elements, 2013 Vol. 2, Num. 37, Page 475-485, 2013,

## Conference Papers

#### Portal Records

- 1 Mostafa Abbaszadeh, "A reduced-order model based on the cubic B-spline functions to investigate option pricing under jump-diffusion model ", The 7th FINACT-IRAN National Conference on Financial and Actuarial Mathematics, August 2021
- 2 Mostafa Abbaszadeh, Romina Hashami, Mehdi Dehghan, "The use of artificial neural network (ANN) to simulate HIV infection model ", 52nd Annual Iranian Mathematics Conference, August 2021
- 3 Mostafa Abbaszadeh, Hanieh Amjadian, "Local radial point interpolating method (LRPIM) for solving the fractional Black-Scholes model governing European options ", 51 Annual Iranian Mathematics Conference, February 2021
- 4 Mostafa Abbaszadeh, Mostafa Bayat, "Meshless local procedure for solving the Couette hydromagnetic flow ", 51 Annual Iranian Mathematics Conference, February 2021

#### Other Records

- 1 Ehsan Loghman, Ali Kamali, Firoz Bakhtiyari, Mostafa Abbaszadeh, " Analysis of an Euler-Bernoulli micro-beam with fractional viscoelastic model", the 9th International Conference on Acoustics and Vibration, 2020

## Journals Editorial Board





# Magazine Title	Date of Cooperation & Explanations
1 Journal of Mathematical Modeling (Guilan University)	2018
2 Numerical Analysis and Applicable Mathematics (University of Salamanca (Universidad de Salamanca))	2019











## Journal Referee

# Magazine Title	Date of Cooperation & Explanations
1 Journal of Computational Physics	2017-

- 2 Journal of Computational and Applied Mathematics
- 3 Ain Shams
- 4 Alexandria Engineering Journal
- 5 International Journal of Thermal Sciences
- 6 International Journal of Numerical Methods for Heat & Fluid Flow
- 7 International Journal for Numerical Methods in Fluids
- 8 Engineering Analysis with Boundary Elements
- 9 Engineering with Computers
- 10 Computer Methods in Applied Mechanics and Engineering
- 11 Computers & Mathematics with Applications
- 12 Applied Numerical Mathematics
- 13 Mathematical Methods in the Applied Sciences
- 14 Iranian Journal of Mathematical Chemistry
- 15 Communications in Nonlinear Science and Numerical Simulation
- 16 Applied Mathematics Letters
- 17 The European Physical Journal Plus
- 18 Computational Methods for Differential Equations
- 19 Numerical Algorithms
- 20 Numerical Methods for Partial Differential Equations
- 21 Computer Methods and Programs in Biomedicine

## Taught Courses

#	Course title	Description	Headlines	Date
1	Engineering Mathematics	.To equip students with adequate knowledge of mathematics that will enable them in formulating applied problems and solving partial differential equations analytically.		Fall 2021
2	Partial Differential Equations	The main purpose of this course is to acquaint students with partial differential equations and analytical methods to solve them.		Fall 2021
3	Numerical Analysis	This course introduces the formulation and techniques for numerical solution of some problems in science and engineering		Fall 2021
4	Advanced Engineering Mathematics	The main purpose of this course is to acquaint students with the concepts of numerical numerical linear algebra, partial differential equations and Variational Calculus.		Fall 2021

5	Meshless Methods	The main aim of this course is to teach the meshless methods for solving partial differential equations		Spring 2021
6	Numerical Analysis	The main aim of this course is to acquaint students with numerical methods for solving partial and ordinary differential equations.		Spring 2021
7	Numerical Methods in Financial Mathematics	The main aim of this course is to introduce some numerical methods for solving PDEs arising in Financial Mathematics		Spring 2021
8	Numerical Analysis	This course introduces the formulation and techniques for numerical solution of some problems in science and engineering		Spring 2021
9	Engineering Mathematics	.To equip students with adequate knowledge of mathematics that will enable them in formulating applied problems and solving partial differential equations analytically.		Spring 2021
10	Advanced Engineering Mathematics	Introduction to some mathematical concepts, which are required in solving engineering problems		Fall 2020
11	Differential Equations	Introduction to analytical methods for solving ordinary differential equations		Fall 2020
12	Numerical Analysis	This course introduces the formulation and techniques for numerical solution of some problems in science and engineering		Fall 2020
13	Engineering Mathematics	.To equip students with adequate knowledge of mathematics that will enable them in formulating applied problems and solving partial differential equations analytically.		Fall 2020
14	Finite Element Method	This course introduces some important and useful technique based on the finite element method for solving different PDEs.		Fall 2020