

Curriculum Vitae

Professor Shaher Momani



(ISI Highly Cited Researcher)

Dean, College of Humanities and Sciences,
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Department of Mathematics, The University of Jordan,
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Personal Data

- Full Name: Shaher Mohammad Ahmad Momani
- Date of Birth: May 10, 1962
- Place of Birth: Ajloun-Jordan
- Nationality: Jordanian
- Sex: Male
- Marital Status: Married, two daughters and two sons
- Profession: Distinguished Professor of Mathematics at The University of Jordan and Ajman University

Academic Qualification

- **Ph.D. in Mathematics, Applied Mathematics (Non-Newtonian Fluid Mechanics)**

University: University of Wales, United Kingdom, 1991.

Title of Thesis: Some Problems in Non-Newtonian Fluid Mechanics.

Advisor: Professor Ken Walters, FRS.

- **B.Sc. in Mathematics**

University: Yarmouk University, Jordan, 1984.

Academic Honors and International Prizes

1. **The Order of King Abdullah II Ibn Al Hussein for Excellence of the Second Class for my Academic Contributions in Scientific Research, 2016.**
2. **Recognized by King Abdullah II Ibn Al Hussein as a Jordanian Star of Science in Mathematics, 2017**
3. **Named in world's top 2% scientists' list according to the prestigious Stanford University, 2020.**
4. **ISI Highly Cited Researcher in Cross-Field according to the Web of Science: 2018.**
5. **ISI Highly Cited Researcher in Mathematics the Web of Science: 2014, 2015, 2016 and 2017.**
6. **I have been named by Clarivate Analytics (formerly Thomson Reuters) as one of the World's Most Influential Scientific Minds in 2014, 2015, 2016, 2017 and 2018.**
7. **I have been named as the first Distinguished Professor at The University of Jordan since its inception in 1962, 2018-present.**
8. **I received an honorary doctorate from The Institute of Management and Commercial Sciences in Geneva, Switzerland, in recognition of my novel contribution to scientific research in Jordan, as well as for my outstanding research on Fractional Calculus, 2018.**
9. **Distinguished Adjunct Professor, King Abdulaziz University, Jeddah, Saudi Arabia, 2014-2019.**
10. **The Abdul Hameed Shoman Award for Arab Researchers, 2019.**
11. **Liouville Award for lifetime achievement in fractional calculus: First Online Conference On Modern Fractional Calculus And Its Applications (OCMFCA-2020), Biruni University, Istanbul, Turkey, 2020.**
12. **Mittag-Leffler Award: FDA Achievement Award, The ICFDA18 International Conference on Fractional Differentiation and its Applications, Amman, Jordan, 2018.**
13. **Mango Distinguished Researcher Prize in Jordan, 2016.**
14. **The Distinguished Researcher Prize in Jordan, 2012.**
15. **The Distinguished Researcher Prize at The University of Jordan, 2012.**
16. **The Islamic Educational, Scientific and Cultural Organization Science Prize "ISESCO Science Prize", 2008.**

17. The Scopus Prize for Jordan Scientists, 2009.
18. The Distinguished Researcher Prize at Mutah University, 2009.
19. TWAS Prize for the Young Scientists, Third World Academic Sciences, Italy, 2000.
20. Who's Who Prize, 2006.
21. The Award of Jordan National Commission For Education, Culture and Science, 2008.
22. Classified as **one of the top ten scientists in the world** in fractional differential equations according to **Clarivate Analytics** in 2008-2015.
23. Classified as the **top scientist in the world in terms of publications** in fractional differential equations according to **Clarivate Analytics and Scopus** databases in 2008-2015.
24. The Highest Total Citations in Mathematics in the World during 2001-2011 According to Clarivate Analytic (Science Watch).
25. The most recent ***h*-Index** for Shaher Momani is **56** and the number of **Citations** is **10048** according to **Scopus Database** in May 2020.
26. The most recent ***h*-Index** for Shaher Momani is **71** and the number of **Citations** is **16040** according to **Google Scholar** in May 2020.
27. Nominated for the Nobel Prize in Physics for 2016 by many scholars and institutions throughout the Arab world.
28. Elected as a Fellow of the Islamic-World Academy of Sciences (FIAS) in 2017.
29. Principal Investigator (PI) in the Highly Cited Project "Mathematical modelling and analysis of some complex nonlinear dynamical systems containing fractional derivatives" Supported by Ajman University, September 2010 to October 2020.
30. Investigator in the international project "Harnessing the worlds academies to combat predatory academic journals and conferences" Supported by the The InterAcademy Partnership (IAP), Washington DC, USA, May 2020 to April 2022.
31. Principal Investigator (PI) in the international project "Mathematical modeling of the pandemic coronavirus (COVID-19) outbreak through fractional derivatives" Supported by Microsoft AI for Health COVID-19 grant - ID:00011000040, September 2020 to August 2022.
32. Principal Investigator (PI) in the international project "Fractional calculus approach for detection and segmentation of COVID-19 Coronavirus in CT Lung Scans" Supported by Microsoft AI for Health COVID-19 grant - ID:00011000021, September 2020 to August 2022.

Experience

- **Dean of College of Humanities and Sciences, Ajman University, Ajman, UAE, August 2019 to present.**
- **Dean of Scientific Research, The University of Jordan, September 2016 to September 2018.**
- **Dean of Faculty of Science, The University of Jordan, September 2014 to September 2016.**

- Head of Department of Mathematics, The University of Jordan, September 2012 to September 2014.
- Member of the Board of Trustees of Princess Sumaya University for Technology, September 2010 to Present.
- Member of Basic Sciences Committee, Scientific Research Support Fund (SRSF), 2010-2012.
- Editor-in-Chief: Numerical and Computational Methods in Sciences and Engineering.
- Editor-in-Chief: Arab Journal Of Mathematics And Mathematical Sciences (AJMMS).
- Founder of Jordan Research Group in Applied Mathematics (JRGAM).
- Professor: The University of Jordan, September 2009 to present.
- Professor: Mutah University, September 2007 to 2009.
- Professor: Qatar University, September 2006 to September 2007.
- Associate Professor: Mutah University, September 2004 to September 2006.
- Associate Professor: Jordan University, Summer course 2004.
- Associate Professor: United Arab Emirates University, September 2001 to September 2004.
- Associate Professor: Yarmouk University, September 2000 to September 2001.
- Associate Professor: Mutah University, November 1998 to September 2000.
- Assistant Professor: Mutah University, September 1991 to November 1998.
- Head, Department of Mathematics, Mutah University, September 1994 to September 1995.

Research Interests

My general research interests are in the areas of applied mathematics, Non-Newtonian Fluid Mechanics, differential equations and numerical analysis, fractional calculus and fractional differential equations. More specifically, my research interests can be summarized as follows:

1. Mathematical modelling;
2. Fractional Dynamical Systems;
3. Numerical solution of ordinary and partial differential equations of fractional order;
4. Theory of fractional differential equations and integral equations;
5. Newtonian and non-Newtonian fluid mechanics;
6. Stability of fractional linear systems;
7. Fractional Order Modeling and Control in Biomedical Engineering;
8. Variational inequalities and obstacle problems;
9. Mathematical biology;
10. Mathematical physics;

Editor

1. Editor-in-Chief, Dirasat Journal: Educational Sciences: 2016-2018.
2. Editor-in-Chief, Dirasat Journal: Human and Social Sciences: 2016-2018. (**Indexed in Scopus Database**).
3. Editor-in-Chief, Dirasat Journal: Sharia and Law Sciences: 2016-2018.
4. Editor-in-Chief: Numerical and Computational Methods in Sciences and Engineering.
5. Editor-in-Chief, Arab Journal of Mathematics and Mathematical Sciences.
Website: <http://www.ripublication.com/ajmms.htm>
6. Member, Editorial Board, Jordan Journal of Mathematics and Statistics. (**Indexed in Scopus Database**).
7. Member, Editorial Board, Applied Numerical Mathematics Journal. **ISI (IF: 1.263)**.
Website: <https://www.journals.elsevier.com/applied-numerical-mathematics>
8. Member, Editorial Board, Applied Mathematics & Information Sciences Journal. **ISI (IF: 0.73)**.
Website: <http://naturalspublishing.com/>
9. Member, Editorial Board, Journal of Applied and Computational Mathematics. **ISI (IF: 1.33)**.
10. Member, Editorial Board, Progress in Fractional Differentiation and Applications Journal.
11. Member, Editorial Board, Khazar Journal of Science and Technology (KJSAT).
12. Member, Editorial Board, Applied Mathematics & Information Sciences Letters Journal.
Website: <http://naturalspublishing.com/>
13. Member, Editorial Board, International Journal of Information and Communication Technology Research.
Website: <http://www.esjournals.org/>
14. Member, Editorial Board, International Journal of Differential Equations. (**Indexed in Scopus Database**).
Website: <http://www.hindawi.com/journals/ijde/editors.html>
15. Member, Editorial Board, International Journal of Differential Equations: Special Issue on Fractional Differential Equations.
Website: <http://downloads.hindawi.com/journals/specialissues/0552010002.pdf>
16. Member, Editorial Board, Journal of Emerging Trends in Computing and Information Sciences.
Website: <http://www.cisjournal.org/>
17. Member, Editorial Board, ARPN Journal of Systems and Software. **ISI (IF: 0.73)**.
Website: <http://scientific-journals.org/>
18. Member, Editorial Board, World Journal of Modelling and Simulation (WJMS). (**Indexed in Scopus Database**).
Website: <http://www.wjms.org.uk/>
19. Member, Editorial Board, Communications in Fractional Calculus: Mathematics, Physics and Mechanics.
Website: <http://www.nonlinearscience.com/>

20. Member, Editorial Board, Communications in Fractional Calculus.
Website: <http://www.nonlinearscience.com/>
21. Member, Editorial Board, Journal of Fractional Calculus and Its Applications.
Website: <http://www.fcaj.webs.com/>
22. Member, Editorial Board, International Journal of Computational Mathematics and Numerical Simulation (IJCMNS).
Website: <http://mcm.edu.cn/ijcmns/othereditors2.htm>
23. Member, Editorial Board, Journal of Nonlinear and Fractional Phenomena in Science and Engineering.
Website: <http://www.jnfpse.com/index.htm>
24. Member, Editorial Board, Fractional Dynamic Systems Journal.
Website: <http://fds.ele-math.com/>
25. Member, Editorial Board, Applied Mathematics & Information Sciences Journal.
Website: <http://amis.dixiewpublishing.com/>
26. Member, Editorial Board, Jordan Engineers Association Journal of Electrical Engineering (JEA-JEE).
27. Member, Editorial Board, International Review of Pure and Applied Physics Journal.
28. Member, Editorial Board, International Journal of Nonlinear Dynamical Systems and Chaos(IJNDSC).
Website: <http://www.gbspublisher.com/ijndsc1.htm>
29. Member, Editorial Board, International Journal of Nonlinear Dynamics in Engineering and Sciences.
Website:<http://www.serialspublications.com/>
30. Member, Editorial Board, Mutah Journal for Scientific Research, 2004-2005.
Website: <http://www2.mutah.edu.jo/dar/arabic/abstracs/edibo05s.htm>
31. Member, Editorial Board, Communications in Numerical Analysis.
Website: <http://www.ispacs.com/cna/>
32. Member, Editorial Board, International Journal of Applied Mathematical Research (IJAMR).
Website: <http://www.sciencepubco.com/index.php/ijamr>
33. Member, Editorial Board, Conference Papers in Mathematics Journal.
Website: <http://www.cpis.com/journals/mathematics/>
34. Member, Editorial Board, Malaya Journal of Matematik [MJM].
Website: <http://jml2012.indexcopernicus.com/Malaya+Journal+of+Matematik,p2794,3.html>
35. Member, Editorial Board, Applied Mathematics and computational Intelligence
Website: <http://amci.unimap.edu.my/>

Reviewer

- Journal of Computational and applied Mathematics.
- Journal of Mathematical Analysis and Applications.
- Physics Letters A.
- Physica Scripta.
- Electronic Journal of Differential Equations.
- Communications in Nonlinear Science and Numerical Simulation.
- Chaos, Solitons & Fractals.
- Journal of Applied Analysis.
- Arabian Journal for Science and Engineering.
- Computers and Mathematics with Applications.
- International Journal of Computer Mathematics.
- Journal of Applied Mathematics.
- International Journal of Mathematics and Mathematical Sciences.
- Numerical Methods for Partial Differential Equations.
- Referee for several international and local journals.

Membership

1. Member of the International Who's Who, since 2006.
2. Member of the Jordanian Mathematics Society, since 1991.
3. Member of the Exactive Committee of the Jordanian Mathematics Society, 1994-1996.
4. Member of the British Society of Rheology, since 1989.
5. Member of Newton Institute of Non-Newtonian Fluid Mechanics. University of Wales.
6. Member of the American Mathematical Society, since 1996.
7. Leader of Jordan Research Group in Applied Mathematics (JRGAM), Jordan, 2005 – Present.
8. Member of the fractional calculus and its applications cuminuty.
<http://www.tuke.sk/podlubny/fc.html>
9. Member of the Research Group in Mathematical Inequalities and Applications (RGMIA).

Committee Service

Coordinator and Member of Several Internal Committees at the Following Universities:

- **Mutah University: 1991-2000, 2004-2006 and 2007-2009.**
- **Yarmouk University: 2000-2001.**
- **United Arab Emirates University: 2001-2004.**
- **Qatar University: 2006-2007.**
- **The University of Jordan: 2009-present.**
- **Ajman University, Ajman-UAE: 20019-present.**
- **Outside Universities:**
 1. Member of the Committee for Maths. Department of Irbid Private Univ.
 2. Member of the Committee for Maths. Department of Zarqa Private Univ.
 3. Member of the Committee for Maths. Department of Ziatounah Private Univ.
 4. Coordinator of the Committee for Maths. Department of Jadara Private Univ.
 5. Referee for Research Papers Publish in Various Journals.
 6. Member of a Defense exam Committee for Several Master Theses in Jordan Universities.
 7. Chaired a Session of the Third Jordanian Mathematics Conference, 1996.
 8. Chaired a Session of the Fifth Annual U. A. E. University Conference, 2004.
 9. Chaired a Session of the Recent Advances in Mathematics Conference, India, 2004.
 10. Member of the Exactive Committee of Qualification Exam at Jordan Universities.
 11. Chaired a Session of The Third Conferences On Research And Education In Mathematics, Malaysia 2007.
 12. Member of the Organizing Committee of The 2nd International Symposium on Nonlinear Dynamics, Shanghai, China, 2007.
 13. Chaired a Mini-Symposium in The 2nd International Symposium on Nonlinear Dynamics, Shanghai, China, 2007.
 14. Member of the International Program Committee of The Third IFAC Workshop on Fractional Differentiation and its Applications, Turkey, 2008.
 15. Member of the International Program Committee of The Fourth IFAC Workshop on Fractional Differentiation and its Applications, Spain, 2010.
 16. Member of the International Program Committee of The Fourth IFAC Workshop on Fractional Differentiation and its Applications, China, 2012.

Computer Skills

1. Mathematical Software: Mathematica, Fortran, Maple, Matlab.
2. Typesetting Software: Tex, LaTeX, Scientific Workplace, MicroSoft Word.
3. MCDL: Mutah Computer Drive License.

Published and Accepted Papers

- **Remark 1. ISI:** The Journal is Listed in Clarivate Analytics Web of Science (Formerly ISI Web of Knowledge).
 - **Remark 2. IF:** The Impact Factor for the Journal According to Journal Citation Reports (JCR) Released by Clarivate Analytics in 2019.
 - **Remark 3. Scopus:** The Journal is indexed in Scopus. Q1 to Q4: The journal ranking quartiles. Q1*: The journal is among the top 10%.
1. **G. Georgiou, Shaher Momani, M. J. Crochet, and K. Walters**, Newtonian and non-Newtonian flow in a channel obstructed by an antisymmetric array of cylinders, *Journal of Non-Newtonian Fluid Mechanics*, Vol. **40**, (1991) 231-260. **ISI (IF: 2.270)**, [**Scopus: Q1**].
 2. **S. Hadid, B. Maseadeh and Shaher Momani**, On the existence of maximal and minimal solutions of differential equations of non-integer order, *Journal of Fractional Calculus*, Vol. **9**, (1996) 41-44.
 3. **S. B. Hadid, A. A. Ta'ani and S. M. Momani**, Some existence theorems on differential equations of generalized order through a fixed-point theorem, *Journal of Fractional Calculus*, Vol. **9**, (1996) 45-49.
 4. **B. Maseadeh, S. Momani and S. Hadid**, Solutions of differential equations of non-integer order in L^2 and C spaces, *Mutah Journal for Research and Studies*, Vol. **12**(1), (1997) 169-181.
 5. **Shaher Momani**, The flow of non-Newtonian fluids through corrugated pipes, *Mu'tah Journal for Research and Studies*, Vol. **12**(4), (1997) 91-112.
 6. **S. Momani and S. Hadid**, An algorithm for numerical solutions of fractional order differential equations, *Journal of Fractional Calculus*, Vol. **15**, (1998) 61-66.
 7. **S. M. Momani and K. Walters**, The flow of non-Newtonian fluids through curved pipes, *Al-Dirasat Journal*, Vol. **26**(1), (1999) 74-87. [**Scopus: Q3**].
 8. **S. M. Momani**, On existence of solutions of a system of ordinary differential equations of fractional order, *Far East Journal of Mathematical Sciences (FJMS)*, Vol. **1**(2), (1999) 265-270. [**Scopus: Q4**].
 9. **S. M. Momani**, Variation of solutions of differential equations of non-integer order with respect to initial condition and parameters, *Far East Journal of Mathematical Sciences (FJMS)*, Vol. **1**(3), (1999) 423-428. [**Scopus: Q4**].
 10. **S. M. Momani**, Stress distribution and pressure gradient of non-Newtonian fluids through converging ducts, *Mu'tah Lil-Buhooth Wa Al-Dirasat Journal*, Vol. **15**(1), (2000) 9-26.
 11. **S. M. Momani**, Local and global uniqueness theorems on differential equations of non-integer order via Gronwall's and Bihari's inequalities, *Revista Technica Journal*, Vol. **23**(1), (2000) 66-69. **ISI (IF: 0.033)**, [**Scopus: Q4**].
 12. **Shaher Momani**, Numerical solution of differential equations of non-integer order by the generalized difference method, *Al-Zarqa Private University Journal*, Vol. **2**(1), (2000) 1-7.
 13. **S. M. Momani**, On the existence of ε -approximate solutions of differential equations of non-integer order, *PanAmerican Mathematical Journal*, Vol. **10**(3), (2000) 61-69. [**Scopus: Q4**].

14. **Shaher M. Momani**, Local and global existence theorems on fractional integro-differential equations, *Journal of Fractional Calculus*, Vol. **18**, (2000) 81-86.
15. **Shaher M. Momani and Reyad El-Khazali**, On the existence of extremal solutions of fractional integro-differential equations, *Journal of Fractional Calculus*, Vol. **18**, (2000) 87-92.
16. **S. M. Momani**, The flow of non-Newtonian fluids through rotating pipes, *Al-Manara Journal*, Vol. **7**(1) (2001), 9-25.
17. **Shaher Momani**, Some existence theorems on fractional integro-differential equations, *Abhath Al-Yarmouk Journal*, Vol. **10**(2B), (2001) 435-444.
18. **S. M. Momani and S. B. Hadid**, Asymptotic behaviour of the maximal and minimal solutions of differential equations of non- integer order, *Far East Journal of Mathematical Sciences (FJMS)*, Vol. **6**(1), (2002) 31-39. [**Scopus: Q4**].
19. **S. M. Momani and S. B. Hadid**, Dependence of solutions of differential equations of non-integer order on initial conditions and parameters, *Al-Manara Journal*, Vol. **9**(2), (2003) 69-76.
20. **Reyad El-Khazali, Shaher Momani**, Stability analysis of composite fractional systems, *International Journal of Applied Mathematics*, Vol. **12**(1), (2003) 73-85. [**Scopus: Q4**].
21. **S. M. Momani and S. B. Hadid**, On the inequalities of integro-differential fractional equations, *International Journal of Applied Mathematics*, Vol. **12**(1), (2003) 29-37. [**Scopus: Q4**].
22. **S. M. Momani and S. B. Hadid**, Some comparison results for integro-fractional differential inequalities, *Journal of Fractional Calculus*, Vol. **24**, (2003) 37-44.
23. **S. M. Momani, S. B. Hadid and Z. M. Alawaneh**, Some analytical properties of solutions of differential equations of the noninteger order, *International Journal of Mathematics and Mathematical Sciences*, Vol. **2004**(13), (2004) 697-701. [**Scopus: Q3**].
24. **Shaher Momani**, Analytical solutions of strongly non-linear oscillators by the decomposition method, *International Journal of Modern Physics C (IJMPC)*, Vol. **15**(7), (2004) 967-979. **ISI (IF: 1.017)**, [**Scopus: Q3**].
25. **Shaher Momani and Samir Hadid**, Lyapunov stability solutions of fractional integro-differential equations, *International Journal of Mathematics and Mathematical Sciences*, Vol. **2004**(47), (2004) 2503-2507, [**Scopus: Q3**].
26. **Shaher Momani and Kamel Al-Khaled**, Numerical solutions for systems of fractional differential equations by the decomposition method, *Applied Mathematics and Computation*, Vol. **162**(3), (2005) 1351-1365. **ISI (IF: 3.092)**, [**Scopus: Q1***].
27. **S. M. Momani and S. B. Hadid**, On the continuous dependence of solutions of integro-fractional differential equations with respect to initial conditions, *Nonlinear Functional Analysis and Applications*, Vol. **10**(3), (2005) 379-386. (**Scopus: Q4**).
28. **Kamel Al-Khaled and Shaher Momani**, An approximate solution for a fractional diffusion-wave equation using the decomposition method, *Applied Mathematics and Computation*, Vol. **165**(2), (2005) 473-483. **ISI (IF:3.092)**, [**Scopus: Q1***].
29. **Shaher Momani**, Analytical approximate solution for fractional heat-like and wave-like equations with variable coefficients using the decomposition method, *Applied Mathematics and Computation*, Vol. **165**(2), (2005) 459-472. **ISI (IF:3.092)**, [**Scopus: Q1***].

30. **Shaher Momani, Khaled Moadi and Muhammad Aslam Noor**, Modified decomposition method for solving a system of third-order obstacle problems, *International Journal of Pure and Applied Mathematics*, Vol. **21**(1), (2005) 97-107. [Scopus: Q4].
31. **Shaher Momani**, An explicit and numerical solutions of the fractional KdV equation, *Mathematics and Computers in Simulation*, Vol. **70**(2), (2005) 110-118. ISI (IF: 1.409), [Scopus: Q2].
32. **Shaher Momani**, A numerical scheme for the solution of Sivashinsky equation, *Applied Mathematics and Computation*, Vol. **168**(2), (2005) 1273-1280. ISI (IF:3.092), [Scopus: Q1*].
33. **Shaher Momani**, Analytic and approximate solutions of the space- and time-fractional telegraph equations, *Applied Mathematics and Computation*, Vol. **170**(2), (2005) 1126-1134. ISI (IF:3.092), [Scopus: Q1*].
34. **Kamel Al-Khaled, Shaher Momani and Ahmed Alawneh**, Approximate wave solutions for a generalized Benjamin-Bona-Mahoy-Burgers equation, *Applied Mathematics and Computation*, Vol. **171**(1), (2005) 281-292. ISI (IF:3.092), [Scopus: Q1*].
35. **Muhammad Aslam Noor, S. K. Mishra and Shaher Momani**, Properties of approximate preinvex functions, *Nonlinear Analysis Forum Journal*, Vol. **10**(2), (2005) 1-9.
36. **Shaher Momani and Salah Abuasad**, Application of He's variational iteration method to Helmholtz equation, *Chaos, Solitons & Fractals*, Vol. **27**(5), (2006) 1119-1123. ISI (IF: 3.064), [Scopus: Q1*].
37. **Zaid Odibat and Shaher Momani**, Application of variational iteration method to nonlinear differential equations of fractional order, *International Journal of Nonlinear Science and Numerical Simulation*, Vol. **7**(1), (2006) 27-34. ISI (IF: 1.162), [Scopus: Q2].
38. **Shaher Momani**, Non-perturbative analytical solutions of the space- and time-fractional Burgers equations, *Chaos, Solitons & Fractals*, Vol. **28**(4), (2006) 930-937. ISI (IF: 3.064), [Scopus: Q1*].
39. **Shaher Momani, Khaled Moadi and Muhammad Aslam Noor**, Decomposition method for solving fourth order obstacle problems, *Applied Mathematics and Computation*, Vol. **175**(2), (2006) 923-931. ISI (IF:3.092), [Scopus: Q1*].
40. **Shaher Momani**, Solving a system of second-order obstacle problems a modified decomposition method, *Applied Mathematics E-Notes*, Vol. **6**, (2006) 141-147. [Scopus: Q4].
41. **Shaher Momani and Zaid Odibat**, Analytical approach to linear fractional partial differential equations arising in fluid mechanics, *Physics Letters A*, Vol. **355**, (2006) 271-279. ISI (IF: 2.087), [Scopus: Q1*].
42. **Shaher Momani and Zaid Odibat**, Analytical solution of a time-fractional Navier-Stokes equation by Adomian decomposition method, *Applied Mathematics and Computation*, Vol. **177**, (2006) 488-494. ISI (IF:3.092), [Scopus: Q1*].
43. **Shaher Momani and Khaled Moadi**, A reliable algorithm for solving fourth-order boundary value problems, *Journal of Applied Mathematics and Computing*, Vol. **22**(3), (2006) 185-197. [Scopus: Q2].
44. **Ziad Odibat and Shaher Momani**, Approximate solutions for boundary value problems of time-fractional wave equation, *Applied Mathematics and Computation*, Vol. **181**(1), (2006) 767-774. ISI (IF:3.092), [Scopus: Q1*].

45. **Shaher Momani and Rami Qaralleh**, An efficient method for solving systems of fractional integro-differential equations, *Computers and Mathematics with Application*, Vol. **52**(3-4), (2006) 459-470. **ISI (IF: 2.811)**, [**Scopus: Q1***].
46. **Ziad Odibat and Shaher Momani**, Analytical spherically symmetric solution for the time-fractional Navier-Stokes equation, *Advances in Theoretical and Applied Mathematics (ATAM)*, Vol. **1**(2), (2006) 97-107.
47. **Shaher Momani and Muhammad Aslam Noor**, Numerical methods for fourth-order fractional integro-differential equations, *Applied Mathematics and Computation*, Vol. **182**(1), (2006) 754-760. **ISI (IF:3.092)**, [**Scopus: Q1***].
48. **Shaher Momani**, A numerical scheme for the solution of multi-order fractional differential equations, *Applied Mathematics and Computation*, Vol. **182**(1), (2006) 761-770. **ISI (IF:3.092)**, [**Scopus: Q1***].
49. **Shaher Momani and Nabil Shawagfeh**, Decomposition method for solving the fractional Riccati differential equation, *Applied Mathematics and Computation*, Vol. **182**(2), (2006) 1083-1092. **ISI (IF:3.092)**, [**Scopus: Q1***].
50. **Shaher Momani and Rami Qaralleh**, Analytical approximate solution for a nonlinear fractional integro-differential equation, *Nonlinear Analysis Forum Journal*, Vol. **11**(2), (2006) 237-249.
51. **Shaher Momani, Salah Abuasad and Zaid Odibat**, Variational iteration method for solving non-linear boundary value problems, *Applied Mathematics and Computation*, Vol. **183**, (2006) 1351-1358. **ISI (IF:3.092)**, [**Scopus: Q1***].
52. **Shaher Momani**, General solutions for the space- and time-fractional diffusion-wave equation, *Journal of Physical Sciences*, Vol. **10**, (2006) 30-43.
53. **Shaher Momani and Zaid Odibat**, Numerical comparison of methods for solving linear differential equations of fractional order, *Chaos, Solitons & Fractals*, Vol. **31**(5), (2007) 1248-1255. **ISI (IF: 3.064)**, [**Scopus: Q1***].
54. **Shaher Momani**, An algorithm for solving a nonlinear fractional convection-diffusion problem, *Communications in Nonlinear Science and Numerical Simulation*, Vol. **12**(7), (2007) 1283-1290. **ISI (IF: 3.967)**, [**Scopus: Q1***].
55. **Shaher Momani and Zaid Odibat**, Numerical approach to differential equations of fractional order, *Journal of Computational and Applied Mathematics*, Vol. **207**(1), (2007) 96-110. **ISI (IF: 1.883)**, [**Scopus: Q1**].
56. **Shaher Momani and Zaid Odibat**, Fractional Green's function for linear fractional inhomogeneous partial differential equations in fluid mechanics, *Journal of Applied Mathematics and Computing*, Vol. **24**, (2007) 167-178. [**Scopus: Q2**].
57. **Shaher Momani and Rami Qaralleh**, Numerical approximations and Pade approximants for a fractional population growth model, *Applied Mathematical Modelling*, Vol. **31**(9), (2007) 1907-1914. **ISI (IF: 2.8841)**. , [**Scopus: Q1***].
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345. **Nadjette Debbouche, Shaher Momani, Adel Ouannas, M.T. Shatnawi, Giuseppe Grassi, Zohir Dibi, Iqbal Batiha**, Generating multidirectional variable hidden attractors via newly commensurate and incommensurate non-equilibrium fractional-order chaotic systems, *Entropy Journal*, Vol. 23 (3) (2021) 261-20. (IF: 2.494), [**Scopus: Q1**]. AU.
346. **Adel Ouannas, Fatiha Mesdoui, Shaher Momani, Iqbal Batiha, Giuseppe Grassi**, Synchronization of FitzHugh-Nagumo reaction-diffusion systems via one-dimensional linear control law, *Archives of Control Sciences Journal*, Vol. 31 (3) (2021) 333-345. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
347. **Nesrine Harrouche, Shaher Momani, Shatha Hasan, Mohammed Al-Smadi**, Computational algorithm for solving drug pharmacokinetic model under uncertainty with nonsingular kernel type Caputo-Fabrizio fractional derivative, *Alexandria Engineering Journal*, Vol. 60 (2021) 4347-4362. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
348. **Iqbal M. Batiha, Ramzi B. Albadarneh, Shaher Momani, Iqbal H. Jebril**, Dynamics analysis of fractional-order Hopfield neural networks, *International Journal of Biomathematics*, Vol. 13(8) (2020) 2050083. **ISI (IF: 0.8)**, [**Scopus: Q3**]. AU.
349. **Tasawar Hayat, Ikram Ullah, Ahmad Alsaedi, Shaher Momani**, Entropy Optimization in Nonlinear Mixed Convective Flow of Nanomaterials Through Porous Space, *Journal of Non-Equilibrium Thermodynamics*, Vol. 46(2) (2021) 191-203. **ISI (IF: 2.157)**, [**Scopus: Q2**]. AU.
350. **Reyad El-Khazali, Iqbal M. Batiha, Shaher Momani**, A New Discrete-Time Model of Fractional-Order PLL, *2020 3rd International Conference on Signal Processing and Information Security, ICSPIS (2020)*, 9340137, Dubai, UA. [**Scopus: Q4**]. AU.
351. **Habib Ullah, T. Hayat, Salman Ahmad, M. Sh. Alhodaly, Shaher Momani**, Numerical simulation of MHD hybrid nanofluid flow by a stretchable surface, *Chinese Journal of Physics*, Vol. 71 (2021) 597-609. **ISI (IF: 2.157)**, [**Scopus: Q2**]. AU.
352. **Amina-Aicha Khennaoui, Adel Ouannas, Shaher Momani, Zohir Dibi, Giuseppe Grassi, Dumitru Baleanu, Viet-Thanh Pham**, Hyperchaotic Dynamics Of A New Fractional Discrete-Time System, *Fractals Journal*, Vol. 29(8) (2021) 2140034. **ISI (IF: 3.154)**, [**Scopus: Q1***]. AU.

353. **Mohammed Al-Smadi, Nadir Djeddi, Shaher Momani, Shrideh Al-Omari, Serkan Araci**, An attractive numerical algorithm for solving nonlinear Caputo-Fabrizio fractional Abel differential equation in a Hilbert space, *Advances in Difference Equations Journal*, Vol. 2021 (2021) 271. **ISI (IF: 1.105)**, [**Scopus: Q1***]. AU.
354. **Mohammed Al-Smadi, Hemen Dutta, Shatha Hasa, Shaher Momani**, On numerical approximation of Atangana-Baleanu-Caputo fractional integro-differential equations under uncertainty in Hilbert Space, *Mathematical Modelling of Natural Phenomena Journal*, Vol. 16 41. **ISI (IF: 1.105)**, [**Scopus: Q1**]. AU.
355. **Shaher Momani, Ranbir Kumar, HM Srivastava, Sunil Kumar, Samir Hadid**, A chaos study of fractional SIR epidemic model of childhood diseases, *Results in Physics* , Vol. 27 (2021) 104442-17. **ISI (IF: 4.019)**, [**Scopus: Q1***]. AU.
356. **Soumia Tayebi, Shaher Momani, Omar Abu Arqub**, The cubic B-spline interpolation method for numerical point solutions of conformable boundary value problems, *Alexandria Engineering Journal*, Vol. 61(2) (2022) 1519-1528. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
357. **Ahlem Ben Rabah, Shaher Momani, Omar Abu Arqub**, The B-spline collocation method for solving conformable initial value problems of non-singular and singular types, *Alexandria Engineering Journal*, Vol. 61(2) (2022) 963-974. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
358. **B Gnay, Praveen Agarwal, Juan LG Guirao, Shaher Momani**, A Fractional Approach to a Computational Eco-Epidemiological Model with Holling Type- II Functional Response, *Symmetry Journal*, Vol. 13 (2021) 1159. **ISI (IF: :2.713)**, [**Scopus: Q1**]. AU.
359. **T Hayat, Inayatullah, Shaher Momani, K Muhammad**, FDM analysis for nonlinear mixed convective nanofluid flow with entropy generation, *International Communications in Heat and Mass Transfer Journal*, Vol. 126 (2021) 105389-17. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
360. **Fatima Youbi, Shaher Momani, Shatha Hasan, Mohammed Al-Smadi**, Effective numerical technique for nonlinear Caputo-Fabrizio systems of fractional Volterra integro-differential equations in Hilbert space, *Alexandria Engineering Journal*, Vol. 61(3) (2022) 1778-1786. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
361. **Iqbal Batiha, Shaher Momani, Adel Ouannas, Zaid Momani, Samir Hadid**, Fractional-order COVID-19 Pandemic Outbreak: modeling and stability analysis, *International Journal of Biomathematics*, accepted July 2, 2021. **ISI (IF: 2.236)**, [**Scopus: Q2**]. AU.
362. **Ramzi Albadarneh, Iqbal Batiha, Shaher Momani, Adel Ouannas**, Modeling COVID-19 Pandemic Outbreak using Fractional-Order Systems, *International Journal of Mathematics and Computer Science*, Vol. 16(4), 2021, 14051421. **ISI (IF: 2.236)**, [**Scopus: Q3**]. AU.
363. **Mohamed M Mousa, Praveen Agarwal, Fahad Alsharari, Shaher Momani**, Capturing of solitons collisions and reflections in nonlinear Schrödinger type equations by a conservative scheme based on MOL, *Advances in Difference Equations*, Vol. 2021(1) (2021) 1-15. **ISI (IF: 2.803)**, [**Scopus: Q1**]. AU.
364. **Shaher Momani, Nadir Djeddi, Mohammed Al-Smadi, Shrideh Al-Omari**, Numerical investigation for Caputo-Fabrizio fractional Riccati and Bernoulli equations using iterative reproducing kernel method, *Applied Numerical Mathematics Journal*, Vol. 170 (2021) 418-434. **ISI (IF: 2.468)**, [**Scopus: Q1**]. AU.
365. **T Hayat, K Muhammad, Shaher Momani**, Melting heat and viscous dissipation in flow of hybrid nanomaterial: a numerical study via finite difference method, *Journal of Thermal Analysis and Calorimetry*, Vol. 2021 (2021) 10944-7. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.

366. **Andang Sunarto, Praveen Agarwal, Jumat Sulaiman, Jackel Vui Lung Chew, Shaher Momani**, Quarter-Sweep Preconditioned Relaxation Method, Algorithm and Efficiency Analysis for Fractional Mathematical Equation, *Fractal and fractional Journal*, Vol. 5(3) (2021) 1-14. **ISI (IF: 3.313)**, [**Scopus: Q1**].
367. **T Hayat, K Muhammad, Shaher Momani**, Numerical study of entropy generation in Darcy-Forchheimer (D-F) Bdewadit flow of CNTs, *International Journal of Hydrogen Energy*, Vol. 46 (2021) 34449-34462. **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
368. **Radwan Abu-Gdairi, Shatha Hasan, Shrideh Al-Omari, Mohammad Al-Smadi, Shaher Momani**, Attractive Multistep Reproducing Kernel Approach for Solving Stiffness Differential Systems of Ordinary Differential Equations and Some Error Analysis, *CMES-Computer Modeling in Engineering and Sciences Journal*, Vol. 130 (2022) 299-313. **ISI (IF: 1.593)**, [**Scopus: Q3**]. AU.
369. **Rahul Goyal, Shaher Momani, Praveen Agarwal, Michael Th. Rassias**, An Extension of Beta Function by Using Wiman's Function, *axioms Journal*, Vol. 10(3) (2021) 187. **ISI (IF: 2.236)**, [**Scopus: Q1**].
370. **Sunil Kumar, Surath Ghosh, Shaher Momani, Samir Hadid**, A study of fractional TB model due to mycobacterium tuberculosis bacteria, *Chaos, Solitons and Fractals*, Vol. 153 (2021) 111452. **ISI (IF: 2.871)**, [**Scopus: Q1***]. AU.
371. **Lei Shi, Muhammad Khan, Bakhtiar Ahmad, Wali Mashwani, Praveen Agarwal, Shaher Momani**, Certain Coefficient Estimates Problems for Three-Leaf-Type Starlike Functions, *Fractal and fractional Journal*, Vol. 5 (2021) 137. **ISI (IF: 3.313)**, [**Scopus: Q1**].
372. **Tahair Rashama, Muhammad Sajjad Shabbir, Praveen Agarwal, Shaher Momani**, On a pair of fuzzy dominated mappings on closed ball in the multiplicative metric space with applications, *Fuzzy Sets and Systems Journal*, accepted September 14, 2021. **ISI (IF: 3.343)**, [**Scopus: Q1**].
373. **Rawya Al-Deiakeh, Omar Abu Arqub, Mohammed Al-Smadi, Shaher Momani**, Lie symmetry analysis, explicit solutions, and conservation laws of the time-fractional Fisher equation in two-dimensional space, *Journal of Ocean Engineering and Science*, **ISI (IF: 2.468)**, [**Scopus: Q1**]. AU.
374. **Hasanen A. Hammad, Praveen Agarwal, Shaher Momani, Fahad Alsharari**, Solving a Fractional-Order Differential Equation Using Rational Symmetric Contraction Mappings, *Fractal and fractional Journal*, Vol. 5 (2021) 159. **ISI (IF: 3.313)**, [**Scopus: Q1**].
375. **Shatha Hasan, Nadir Djeddi, Mohammed Al-Smadi, Shrideh Al-Omari, Shaher Momani, Andreea Fulga**, Numerical solvability of generalized Bagley-Torvik fractional models under Caputo-Fabrizio derivative, *Advances in Difference Equations Journal*, Vol. 2021 (2021) 469. **ISI (IF: 1.105)**, [**Scopus: Q1***]. AU.
376. **Shaher Momani, R. P. Chauhan, Sunil Kumar Samir Hadid**, A fractal-fractional 2019-nCoV model of major disaster for human life, *Fractals Journal*, Vol. — (2021) —. **ISI (IF: 2.871)**, [**Scopus: Q1***]. AU.
377. **Shaher Momani, R. P. Chauhan, Sunil Kumar Samir Hadid**, A Theoretical Study On Fractional Ebola Hemorrhagic Fever Model, *Fractals Journal*, Vol. 30(1) (2022) 2240032-1. **ISI (IF: 2.871)**, [**Scopus: Q1***]. AU.

378. **K Muhammad, T Hayat, Shaher Momani, A. Asghar**, FDM analysis for squeezed flow of hybrid nanofluid in presence of Cattaneo-Christov (C-C) heat flux and convective boundary condition, *Alexandria Engineering Journal*, accepted October 12, 2021 **ISI (IF: 2.236)**, [**Scopus: Q1**]. AU.
379. **Nadjette Debbouche, Adel Ouannas, Shaher Momani, Donato Cafagna,, Viet-Thanh Pham**, Fractional-order biological system: chaos, multistability and coexisting attractors, *The European Physical Journal Special Topics*, Vol. 2021 (2021) 1-10. (IF: 2.707), [**Scopus: Q2**]. AU.
380. **Mudassir Shams, Naila Rafiq, Nasreen Kausar, Praveen Agarwal, Choonkil Park, Shaher Momani**, Efficient iterative methods for finding simultaneously all the multiple roots of polynomial equation, *Advances in Difference Equations*, Vol. 2021 (2021) 1-11. **ISI (IF: 2.803)** , [**Scopus: Q1**]. AU.
381. **Reem Edwan, Shrideh Al-Omari, Mohammed Al-Smad, Shaher Momani, Andreea Fulga**, A new formulation of finite difference and finite volume methods for solving a space fractional convection-diffusion model with fewer error estimates, *Advances in Difference Equations*, Vol. 2021 (2021) 510 **ISI (IF: 2.803)** , [**Scopus: Q1**]. AU.
382. **Jihad Younis, Shilpi Jain, Praveen Agarwal, Shaher Momani**, Certain integral representations involving hypergeometric functions in two variables, *Mathematica Moravica*, Vol. 26(1) (2022) 27-36. AU.

Submitted Papers

1. **Amit Kumar, Shaher Momani**, Analytical solutions of fractional chemical kinetics and carbon dioxide absorbed into phenyl glycidyl ether problems with Atangana - Baleanu fractional derivative, *Journal of Mathematical Chemistry*, submitted June 3, 2020.
2. **Shaher Momani, Amit Kumar, D. Baleanu**, An efficient analytical technique for the solution of space-fractional telegraph equation with Mittag-Leffler type kernel, *Ain Shams Engineering Journal*, submitted, submitted June 15, 2020.
3. **Vedat ERTURK, Abedel-Karrem Alomari, Shaher Momani, Ahmed Alsaedi**, Generalized differential transform method applied to the fractional version of a BVP occurring in chemical reactor theory, *Calcolo Journal*, submitted December 21, 2019.
4. **Chandrashekhara Meshram, Rabha Ibrahim; Samir Hadid, Shaher Momani**, An efficient conformable fractional chaotic maps based online/offline IBSS scheme with provably security in the random oracle model, *Journal of Advanced Research*, submitted November 2, 2019.
5. **Adel Ouannas*, Amina-Aicha Khennaoui, Shaher Momani, Viet-Thanh Pham**, A Three-Dimensional Fractional Discrete System with no Fixed Point: Chaos, Control and Synchronization. *The European Physical Journal Plus*, submitted November 1, 2019.
6. **Shaher Momani, Reyad El-Khazali, Iqbal M. Batiha**, New Optimal Design of Fractional-Order PID Controllers using Particle Swarm Optimization Algorithm. *Automatica Journal*, submitted July 29, 2019.
7. **Ramzi Albadarneh*, Iqbal M. Batiha, Shaher Momani**, Dynamics Analysis of Fractional-order Hopfield Neural Networks, *Chaos, Solitons and Fractals* , submitted October 5, 2019.

8. **K. Mehrez, P. Agarwal, Shaher Momani**, Some new Hermite-Hadamard types inequalities for logarithmically convex functions and their applications, *Mathematical Methods in the Applied Sciences*, submitted on May 17, 2018.
9. **Md. Alal Hosen, M.S.H. Chowdhury, Shaher Momani, Mohammad Yeakub Ali, Ahmad Faris Ismail**, A novel analytical approximation technique for conservative systems with high non-linearity based on the rational harmonic balance method, *Applied Mathematics and Computation*, rejected and not submitted yet May 18, 2018.
10. **Praveen Agarwal, Shaher Momani, Shilpi Jain, Mehar Chand And Gurmej Singh**, Note on fractional integrals and kinetic equation associated with galuse type struve function, *Journal of Computational Physics*, submitted.
11. **M.J. Odeh, Fadi Awawdeh, Shaher Momani**, Controllable dynamical behaviors and the analysis of higher-order Burgers hierarchy with the full effects of inhomogeneities of media, *Journal of Applied Mathematics*, submitted.

Conferences and Study Visits

1. The First Jordanian Mathematics Conference, 1991, Jordan.
2. The Second Jordanian Mathematics Conference, 1994, Jordan.
3. A workshop in Teaching Sciences in the Twenty First Century, 1995, Cairo, Egypt.
4. A workshop in Teaching Calculus Using Mathematica Software, 1995, Alexandria, Egypt.
5. The Third Jordanian Mathematics Conference, 1996, Jordan.
6. Visiting Professor, Department of Mathematics, June - August 1996, Univ. of Wales, UK.
7. A workshop on Mathematics of Computation, 1997, Yarmouk University, Jordan.
8. Visiting Professor, Department of Mathematics, August 1997, Univ. of Wales, UK.
9. The 15th World Congress on Scientific Computation, Modelling and Applied Mathematics (IMACS), 1997, Berlin, Germany.
10. Sixth SIAM Conference on Optimization, 1999, Atlanta, USA,
11. A workshop on Numerical Solution of Differential Equations, 2000, Mu'tah University, Jordan.
12. A workshop on Applications of Calculus, 2001, UAE University, UAE.
13. First UAE Math-Day Conference, 2003, University of Sharjah, UAE.
14. Third International Workshop on Scientific Computing and Application, 2003, Honk Kong, China.
15. A workshop on Making Internship Programs More Effective, 2003, UAE University, UAE.
16. Second UAE Math-Day Conference, 2004, American University of Sharjah, UAE.
17. Invited speaker in Recent Advances in Mathematics Conference, 2004, India.
18. Invited speaker in The Third Conferences On Research And Education In Mathematics, 2007, Malaysia.

19. Invited speaker in The 2nd International Symposium on Nonlinear Dynamics, 2007, Shanghai, China.
20. Invited speaker in The Third IFAC Workshop on Fractional Differentiation and its Applications FDA'08, 2008, Ankara, Turkey.
21. Invited speaker in the First National Conference: SOFA 2010, 2010, Skikda University, Algeria
22. Invited speaker in Casablanca International Workshop on Mathematical Biology: Analysis and Control, 2011, Casablanca, Morocco.
23. Visiting Professor, Department of Mathematics, November 2007, Qatar University, Qatar.
24. Visiting Professor, King Abdullah University for Science and Technology (KAUST), June 2010, KSA.
25. Visiting Professor: Universiti Kebangsaan Malaysia (UKM), June 2010, Malaysia.
26. Invited speaker in The Fifth IFAC Workshop on Fractional Differentiation and its Applications FDA12, 2012 Nanjing, China.
27. Invited speaker in the International Symposium on Fractional PDEs: Theory, Numerics and Applications, 2013, Brown University, USA.
28. Invited speaker in The Sixth IFAC Workshop on Fractional Differentiation and its Applications FDA14, 2014 Catania, Italy.
29. Invited speaker in The First regional Teacher Skills Forum, December 6-7, 2014, Dead Sea, Jordan
30. Invited speaker in The 1st International Conference of The University of Jordan Library on Social Media Shaping E-Publishing, July 27-29, 2015, Amman, Jordan.
31. Invited speaker in International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM), June 3-6, 2015, Istanbul, Turkey.
32. Invited speaker in the Fifth International Platform on Integrating Arab e-Infrastructure a Global Environment, December 7-9, 2015, Casablanca, Morocco.
33. Invited speaker in The International Conference on Fractional Differentiation and its Applications, July 18-20, 2016, Novi Sad, Serbia.
34. Invited speaker in International Conference on Fundamental and Applied Sciences, August 22-26, 2016, Istanbul, Turkey.
35. A workshop on Capacity Building for Higher Education, January 24-27, 2017 Brussels, Belgium.
36. A workshop on Promotion of Innovation Culture in the Higher Education in Jordan, April 29-30, 2017, Porto, Portugal.
37. Invited speaker in Mathematical Models in Ecology and Evolution, July 10-12, 2017, London, UK.
38. Invited speaker in The 21st Conference of the Islamic World Academy of Sciences on Science, Technology and Innovation for Global Peace and Prosperity, October 8-11, 2017, Konya, Turkey.
39. Invited speaker in Major Challenges facing Higher Education in the Arab World: Quality Assurance and Relevance, November 9-11, 2017, Beirut, Lebanon.

40. Invited speaker in The 7th International Conference on Recent Development in Fluid Mechanics and Environmental Science, February 13-15, 2018. Quaid-I-Azam University, Islamabad, Pakistan,
41. A workshop on Vocational Training Centre for Undergraduate University Students and Teachers in Jordan (VTC), March 16-18, 2018, Leipzig, Germany.
42. Invited speaker in The International Conference on Fractional Differentiation and its Applications, July 16-18, 2018, Amman, Jordan.
43. Invited speaker in The 4th International Conference on E-Publishing, July 10-12, 2018, Amman, Jordan.
44. A workshop on Vocational Training Centre for Undergraduate University Students and Teachers in Jordan (VTC), September 28-30, 2018, Leipzig, Germany.
45. Invited speaker in the 3rd Annual Johnson Space Center (JSC) Cross Industry Innovation Summit (CIIS), November 6-7, 2018, NASA Johnson Space Center, Huston, Texas, USA.
46. Invited speaker in The 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), April 9-11, 2019, Amman, Jordan.
47. Invited speaker in The 6th International Arab Conference on Mathematics and Computations (IACMC 2019), April 24-26, 2019, Zarqa University, Jordan.
48. Invited speaker in The 45th International Conference Applications of Mathematics in Engineering and Economics (AMEE 2019), June 7-13, 2019 Sozopol, Bulgaria.
49. Invited speaker in The 19th IEEE International Symposium on Signal Processing and Information Technology, ISSPIT 2019, December 10-12, 2019, Ajman University, UAE.
50. Invited speaker in The First Online Conference On Modern Fractional Calculus And Its Applications (OCMFCA-2020), December 4-6, 2020, Biruni University, Istanbul, Turkey.

Courses Taught at University Level

- **Mutah University: 1991-2000, 2004-2006, and 2007-2009**

1. Math. 101	Calculus I	B. Sc. level.
2. Math. 102	Calculus II	B. Sc. level.
3. Math. 105	Math. for Economics	B. Sc. level.
4. Math. 112	General Mathematics	B. Sc. level.
5. Math. 201	Advanced Calculus	B. Sc. level.
6. Math. 203	Ordinary Differential Equations I	B. Sc. level.
7. Math. 211	Real Analysis I	B. Sc. level.
8. Math. 242	Linear Algebra I	B. Sc. level.
9. Math. 271	Applied Mathematics	B. Sc. level.
10. Math. 301	Ordinary Differential Equations II	B. Sc. level.
11. Math. 321	Numerical Analysis I	B. Sc. level.

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| 12. Math. 421 | Numerical Analysis II | B. Sc. level. |
| 13. Math. 481 | Special Topics in Numerical Analysis, | B. Sc. level. |
| 14. Math. 491 | Special Topics in Fluid Mechanics, | B. Sc. level. |
| 15. Math. 495 | Research Project | B. Sc. level. |
| 16. Math. 500 | Techniques of Sci. Research | Master level. |
| 17. Math. 501 | Theory of Differential Equations | Master level. |
| 18. Math. 521 | Numerical Analysis | Master level. |
| 19. Math. 579 | Fractional Calculus | Master level. |
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| • Qatar University: 2006-2007 | | |
| 1. Math. 101 | Calculus I | B. Sc. level. |
| 2. Math. 215 | Mathematics for Computer Science | B. Sc. level. |
| 3. Math. 217-1 | Mathematics for Physics | B. Sc. level. |
| 4. Math. 217-2 | Mathematics for Engineering | B. Sc. level. |
| 5. Math. 498 | Special Course | B. Sc. level. |
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| • United Arab Emirates University: 2001-2004 | | |
| 1. Math. 1052 | Calculus I | B. Sc. level. |
| 2. Math. 1102 | Calculus II | B. Sc. level. |
| 3. Math. 1094 | Math. for Eng. I | B. Sc. level. |
| 4. Math. 1754 | Math. for Eng. II | B. Sc. level. |
| 5. Math. 2453 | Set Theory | B. Sc. level. |
| 6. Math. 2752 | Ordinary Differential Equation. | B. Sc. level. |
| 7. Math. 3052 | Math. for Teachers I | B. Sc. level. |
| 8. Math. 3102 | Math. for Teachers II | B. Sc. level. |
| 9. Math. 3171 | Applied Mathematics | B. Sc. level. |
| 10. Math. 3203 | Numerical Analysis I | B. Sc. level. |
| 11. Math. 3495 | Research Project | B. Sc. level. |
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| • Yarmouk University: 2000-2001 | | |
| 1. Math. 101 | Calculus I | B. Sc. level. |
| 2. Math. 102 | Calculus II | B. Sc. level. |
| 3. Math. 203 | Ordinary Differential Equation | B. Sc. level. |
| 4. Math. 251 | Partial Differential Equation | B. Sc. level. |
| 5. Math. 321 | Numerical Analysis I | B. Sc. level. |
| 6. Math. 421 | Numerical Analysis II | B. Sc. level. |
| 7. Math. 621 | Special Topics in Applied Mathematics | Master level. |
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| • The University of Jordan: 2009-2019 | | |
| 1. Math. 101 | Calculus I | B. Sc. level. |

2. Math. 103	Math. For Econ.	B. Sc. level.
3. Math. 201	Calculus III	B. Sc. level.
4. Math. 202	Math. For Eng.	B. Sc. level.
5. Math. 221	Differential Equations	B. Sc. level.
6. Math. 472	Numerical Analysis	B. Sc. level.
7. Math. 701	Theory of D. E.	Master level.
8. Math. 901	Theory of D. E.	Ph.D level.
9. Math. 903	Theory of P. D. E.	Ph.D level.
10. Math. 984	Special Topics: Fractional Calculus	Ph.D level.

• **Ajman University: 2019-present**

1. Math. III	Math. For Eng.	B. Sc. level.
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Research Supervision

0.1 MSc Students

1. Khaled Moady: The numerical solution of obstacle boundary value problems, Mutah University, Jordan, (2004).
2. Salah Aldeen: Variational iteration method for solving ordinary and partial differential equations, Mutah University, Jordan, (2005).
3. Rami Qaraleh: The numerical solution of fractional integro-differential equations, Mutah University, Jordan, (2005).
4. Saed Khorshaid: A modified homotopy perturbation Method for solving linear and nonlinear differential equations, Mutah University, Jordan, (2005).
5. Mohammad Al-Shboul: Numerical methods for fourth-order and fifth-order fractional boundary value problems, Mutah University, Jordan, (2005).
6. Nesreen Mkhaterh: Variational iteration method for solving fractional ordinary differential equation, Mutah University, Jordan, (2005).
7. Sora Al-Azawi: Local and global uniqueness theorems on fractional integro-differential equations via Bihari's and Gronwall's inequalities, Al-Nahrin University, Iraq (2006).
8. Sana Abu Gurrah: Modified differential transform method for solving strongly nonlinear oscillators, Mutah University, Jordan, (2007).
9. Banan Mai'a: Chaotic dynamics and phase synchronization of fractional order dynamical systems, Mutah University, Jordan, (2007).
10. Hazim Bashirah: Numerical solution of singular IVPs, Mutah University, Jordan, (2007).
11. Jamel Al-Rwahl: Synchronization of fractional differential Chaotic System, Mutah University, Jordan, (2009).
12. Abdullah Abu Rqayiq: A non-standard finite difference scheme for two-sided space-fractional partial differential equations, Mutah University, Jordan, (2009).

13. Sumar Rawashdeh: Synchronization of fractional differential Chaotic System, Mutah University, Jordan, (2010).
14. Ala'a Fuad Abu Hatab: The Application of Spline Functions to Fractional Differential Equations, The University of Jordan, Jordan, (2011).
15. Rabeea Hudieb: The Laplace Adomian Decomposition Method for approximating the Solution of a giving up smoking system, The University of Jordan, Jordan, (2012).
16. Mohammad Ayserah: The Laplace homtopy analysis method for approximating the solutions of a fractional order differential equation model of human T-cell lymphotropic virus I (HTLV-I) infection of CD4+ T-cells , The University of Jordan, Jordan, (2013).
17. M.J. Odeh: Controllable dynamical behaviors and the analysis of higher-order Burgers hierarchy with the full effects of inhomogeneities of media, The University of Jordan, Jordan, (2013).
18. Mohammad Saed: Representation of exact solutions for systems of integro-differential equations of Volterra type, The University of Jordan, Jordan, (2014).

0.2 Ph.D. Students

1. Mohammad Zuraiqat: An efficient numerical method for solving systems of ordinary differential equations of fractional order, The Jordan University, Jordan, (2007).
2. Omar Abdul Aziz Ali: Explicit method for nonlinear fractional equations, University Kebangsaan Malaysia, Malsysia, (2007).
3. Jadallah Rezqalla: Solutions of some constitutive equations containing fractional derivatives, University Kebangsaan Malaysia, Malsysia, (2009).
4. Khaled Moady: A non-standard finite difference schemes for solving fractional-order chaos and hyperchaos systems, University Kebangsaan Malaysia, Malsysia, (2009).
5. Asad Freihat: The muti-step differential transform method for solving systems of ordinary differential equations of fractional order, The Jordan University, Jordan, (2010).
6. Eman Abuteen: Fractional Differential Equations: Theory and Applications, The Jordan University, Jordan, (2010).
7. Samiah Saleh: On the Solution of Integro-differential Equations of Fractional Order, The Jordan University, Jordan, (2011).
8. Banan Mai'a: Application of Reproducing Kernel Hilbert Space Method to Some Ordinary Differential Equations of Fractional Order, The Jordan University, Jordan, (2012).
9. Rania Yousef: Application of Reproducing Kernel Hilbert Space Method to Some Partial Differential Equations of Fractional Order, The Jordan University, Jordan, (2013).
10. Sana Abu-Gurrah: Application of Reproducing Kernel Hilbert Space Method to Some Partial Differential Equations of Fractional Order of Physical interest, The Jordan University, Jordan, (2013).
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