

# Curriculum Vitae

Distinguished Professor Shaher Momani



( ISI Highly Cited Researcher)

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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

## 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. **ISI Highly Cited Researcher in 2014, 2015, 2016 and 2017.** (I am the only scientist in the Arab World who has been chosen for this prestigious honor for the fourth consecutive year).
4. **I have been named by Thomson Reuters as one of the World's Most Influential Scientific Minds in 2014, 2015, 2016 and 2017.** (I am the only scientist in Jordan who has been chosen for this honor for the fourth consecutive year).
5. **I have been named as the first Distinguished Professor** at The University of Jordan since its inception in 1962, 2018-present.
6. Distinguished Adjunct Professor, King Abdulaziz University, Jeddah, Saudi Arabia, 2014-present.
7. Mango Distinguished Researcher Prize in Jordan, 2016.
8. The Distinguished Researcher Prize in Jordan, 2012.
9. The Distinguished Researcher Prize at The University of Jordan, 2012.
10. The Islamic Educational, Scientific and Cultural Organization Science Prize "ISESCO Science Prize", 2008.
11. The Scopus Prize for Jordan Scientists, 2009.
12. The Distinguished Researcher Prize at Mutah University, 2009.
13. TWAS Prize for the Young Scientists, Third World Academic Sciences, Italy, 2000.
14. The Award of Jordan National Commission For Education, Culture and Science, 2008.
15. Classified as **one of the top ten scientists in the world** in fractional differential equations according to **Thomson Reuters (ISI Web of Knowledge)** in 2009-present.
16. Classified as the **top scientist in the world in terms of publications** in fractional differential equations according to **Thomson Reuters and Scopus** databases in 2009-2012.
17. The most recent ***h*-Index** for Shaher Momani is **44** and the number of **Citations** is **6438** according to **Scopus Database** in December 2017, and **this is the highest *h*-Index and number of Citations in Jordan.**
18. The most recent ***h*-Index** for Shaher Momani is **57** and the number of **Citations** is **10737** according to **Google Scholar** in December 2017.
19. Nominated for the Nobel Prize in Physics for 2017 by many scholars and institutions throughout the Arab world.
20. Momani was elected a Fellow of the Islamic-World Academy of Sciences (IAS) in 2016.

## Experience

- **Dean of Academic Research, The University of Jordan, September 2016 to present.**
- **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: 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 of applied mathematics, fractional calculus and fractional differential equations. More specifically, my research interests can be summarized as follows:

1. Numerical solution of ordinary and partial differential equations of fractional order;
2. Theory of fractional differential equations and integral equations;
3. Newtonian and non-Newtonian fluid mechanics;
4. Stability of fractional linear systems;
5. Fractional Dynamics;
6. Fractional Order Modeling and Control in Biomedical Engineering;
7. Fractional chaotic systems;

8. Variational inequalities and obstacle problems;
9. Mathematical modelling;
10. Mathematical physics;
11. Solitary waves;
12. Nonlinear dynamics.

## Editor

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

17. Member, Editorial Board, Communications in Fractional Calculus: Mathematics, Physics and Mechanics.  
Website: <http://www.nonlinearscience.com/>
18. Member, Editorial Board, Communications in Fractional Calculus.  
Website: <http://www.nonlinearscience.com/>
19. Member, Editorial Board, Journal of Fractional Calculus and Its Applications.  
Website: <http://www.fcaj.webs.com/>
20. Member, Editorial Board, International Journal of Computational Mathematics and Numerical Simulation (IJCMNS).  
Website: <http://mcm.edu.cn/ijcmns/othereditors2.htm>
21. Member, Editorial Board, Journal of Nonlinear and Fractional Phenomena in Science and Engineering.  
Website: <http://www.jnfpse.com/index.htm>
22. Member, Editorial Board, Fractional Dynamic Systems Journal.  
Website: <http://fds.ele-math.com/>
23. Member, Editorial Board, Applied Mathematics & Information Sciences Journal.  
Website: <http://amis.dixiewpublishing.com/>
24. Member, Editorial Board, Jordan Engineers Association Journal of Electrical Engineering (JEA-JEE).
25. Member, Editorial Board, International Review of Pure and Applied Physics Journal.
26. Member, Editorial Board, International Journal of Nonlinear Dynamical Systems and Chaos(IJNDSC).  
Website: <http://www.gbspublisher.com/ijndsc1.htm>
27. Member, Editorial Board, International Journal of Nonlinear Dynamics in Engineering and Sciences.  
Website:<http://www.serialspublications.com/>
28. Member, Editorial Board, Mutah Journal for Scientific Research, 2004-2005.  
Website: <http://www2.mutah.edu.jo/dar/arabic/abstracs/edibo05s.htm>
29. Member, Editorial Board, Communications in Numerical Analysis.  
Website: <http://www.ispacs.com/cna/>
30. Member, Editorial Board, International Journal of Applied Mathematical Research (IJAMR).  
Website: <http://www.sciencepubco.com/index.php/ijamr>
31. Member, Editorial Board, Conference Papers in Mathematics Journal.  
Website: <http://www.cpis.com/journals/mathematics/>
32. Member, Editorial Board, Malaya Journal of Matematik [MJM].  
Website: <http://jml2012.indexcopernicus.com/Malaya+Journal+of+Matematik,p2794,3.html>
33. 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.**
- **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 Thomson Reuters ISI Web of Knowledge.
  - **Remark 2.** IF: The Impact Factor for the Journal According to Journal Citation Reports (JCR) Released by Thomson Reuters (ISI).
  - **Remark 3. Scopus:** The Journal is Listed in Scopus Database.
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: 2.536)**.
  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.
  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)**.
  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)**.
  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)**.
  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  $\varepsilon$ -approximate solutions of differential equations of non-integer order, *PanAmerican Mathematical Journal*, Vol. **10**(3), (2000) 61-69. **(Scopus)**.
  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)**.
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. **ISI (IF: 1.42)**.
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. **ISI (IF: 1.42)**.
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)**.
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: 1.171)**.
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)**.
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: 1.738)**.
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.
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: 1.738)**.
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: 1.738)**.
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)**.

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: 1.218)**.
32. **Shaher Momani**, A numerical scheme for the solution of Sivashinsky equation, *Applied Mathematics and Computation*, Vol. **168**(2), (2005) 1273-1280. **ISI (IF: 1.738)**.
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: 1.738)**.
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: 1.738)**.
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: 1.455)**.
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: 0.622)**.
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: 1.455)**.
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: 1.738)**.
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)**.
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: 1.772)**.
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: 1.738)**.
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)**.
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: 1.738)**.
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: 1.531)**.
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: 1.738)**.
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: 1.738)**.
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: 1.738)**.
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: 1.738)**.
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: 1.455)**.
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: 2.784)**.
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: 1.357)**.
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)**.
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: 2.350)**.
58. **Shaher Momani and Ziad Odibat**, Comparison between homotopy perturbation method and the variational iteration method for linear fractional partial differential equations, *Computers and Mathematics with Applications*, Vol. **54**, (2007) 910-919. **ISI (IF: 1.531)**.
59. **Vedat Suat Erturk and Shaher Momani**, Comparing numerical method for solving fourth-order boundary value problems, *Applied Mathematics and Computation*, Vol. **188**, (2007) 1963-1968. **ISI (IF: 1.738)**.
60. **Rabha Ibrahim and Shaher Momani**, On the existence and uniqueness of solutions of a class of fractional differential equations, *Journal of Mathematical Analysis and Applications*, Vol. **334**(1), (2007) 1-10. **ISI (IF: 1.064)**.
61. **Shaher Momani and Ziad Odibat**, Homotopy perturbation method for nonlinear partial differential equations of fractional order, *Physics Letters A*, Vol. **365**, (2007) 345-350. **ISI (IF: 1.772)**.

62. **Zaid Odibat and Shaher Momani**, A reliable treatment of homotopy perturbation method for Klein-Gordon equations, *Physics Letters A*, Vol. **365**, (2007) 351-357. **ISI (IF: 1.772)**.
63. **Khalida Inayat Noor, Muhammad Aslam Noor and Shaher Momani**, Modified Householder iterative method for nonlinear equations, *Applied Mathematics and Computation*, Vol. **190**, (2007) 1534-1539. **ISI (IF: 1.738)**.
64. **Shaher Momani and Muhammad Aslam Noor**, Numerical comparison of methods for solving a special fourth-order boundary value problem, *Applied Mathematics and Computation*, Vol. **191**, (2007) 218-224. **ISI (IF: 1.738)**.
65. **Rabha Ibrahim and Shaher Momani**, Multiple solutions for multi-order fractional differential equations, *Arab Journal of Mathematics and Mathematical Sciences*, Vol. **1**, (2007) 28-34.
66. **Shaher Momani**, A decomposition method for solving unsteady convection-diffusion problems, *Turkish Journal of Mathematics*, Vol. **31**, (2007) 1-10. **ISI (IF: 0.376)**.
67. **Vedat Suat Erturk and Shaher Momani**, A reliable algorithm for solving tenth-order boundary value problems, *Numerical Algorithms*, Vol. **44**(2), (2007) 147-158. **ISI (IF: 1.241)**.
68. **Zaid Odibat and Shaher Momani**, Numerical solution of Fokker-Planck equation with space- and time-fractional derivatives, *Physics Letters A*, Vol. **369** (2007), 349-358. **ISI (IF: 1.772)**.
69. **Shaher Momani, Zaid Odibat and Vedat Suat Erturk**, Generalized differential transform method for solving a space- and time-fractional diffusion-wave equation, *Physics Letters A*, Vol. **370**, (2007) 379-387. **ISI (IF: 1.772)**.
70. **Hossien Jafari and Shaher Momani**, Solving fractional diffusion and wave equations by modified homotopy perturbation method, *Physics Letters A*, Vol. **370**, (2007) 388-396. **ISI (IF: 1.772)**.
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187. **Anwar Zeb, Gul Zaman, M.I. Chohan, Shaher Momani, Vedat S ERTURK**, Analytic numeric solution for SIRC epidemic model in fractional order, *Asian Journal of Mathematics and Applications*, Vol. **2013**, (2013).
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189. **Mohammed Al-Smadi, Omar Abu Arqub, Shaher Momani**, A computational method for two-point boundary value problems of fourth-order Fredholm-Volterra integro-differential equations, *Mathematical Problems in Engineering*, Vol. **2013**, (2012) 1-10. **ISI (IF: 0.802)**.

190. **A. G. Radwan, K. Moaddy, Shaher Momani and I. Hashim**, Control and switching synchronization of fractional order chaotic systems using active control technique, *Journal of Advanced Research*, Vol. **5**, (2014) 125-132. **(Scopus)**.
191. **Ahmad El-Ajou, Zaid Odibat, Shaher Momani and Ahmad Alawneh**, Construction of Analytical Solutions to Fractional Differential Equations Using Homotopy Analysis Method, *IAENG International Journal of Applied Mathematics*, Vol. **40(2)** (2010). **ISI (IF: 1.42)**.
192. **Vedat Suat Erturk and Shaher Momani**, Solutions to the problem of prey and predator and the epidemic model via differential transform method, *Kybernetes*, Vol. **37(8)** (2008) 1180-1188. **ISI (IF: 0.811)**.
193. **Nurettin DOGAN, Vedat Suat Erturk and Shaher Momani**, He's Variational Iteration Method for Solving the Singularly Perturbed Volterra Integral Equations, *World Applied Sciences Journal*, Vol. **22(11)** (2013) 1657-1661. **(Scopus)**.
194. **Mohammad Zurigat, Safwan Al-Shara, Shaher Momani, and Ahmad Alawneh**, The multi-step homotopy analysis method: A powerful scheme for handling non-linear oscillators, *Iranian Journal of Science and Technology*, Vol. **37A3** (2013) 421-429. **ISI (IF: 0.217)**.
195. **Eman Abuteen, Shaher Momani and Ahmad Alawneh**, Solving the fractional nonlinear Bloch system using multi-step generalized differential transform method, *Computers & Mathematics with Applications*, Vol. 68 (2014) 2124-2132. **ISI (IF: 1.531)**.
196. **Anwar Zeb, Gul Zaman, Shaher Momani, and Vedat Suat Erturk**, Solution of an seir epidemic model in fractional order, *VFAST Transactions on Applied Mathematics*, Vol. 1 (2013) 7-15.
197. **Abdelhalim Ebaid, Shaher Momani and Shih-Hsiang Chang**, On the periodic solutions of the nonlinear oscillators:  $\ddot{x} + f(x, x(t), |x(t)|) = 0$ , *Journal of Vibroengineering*, Vol. 15 (2013) 1701-1714. **ISI (IF: 0.398)**.
198. **Za'er S. Abo-Hammour, Othman MK. Alsmadi, Shaher Momani, Omar Abu Arqub**, A genetic algorithm approach for prediction of linear dynamical systems, *Mathematical Problems in Engineering*, Vol. 2013 (2013) 1-12. **ISI (IF: 0.802)**.
199. **Za'er Abo-Hammour, Omar Abu Arqub, Othman Alsmadi, Shaher Momani**, An Optimization Algorithm for Solving Systems of Second-Order Singular Boundary Value Problems, *Applied Mathematics & Information Sciences*, Vol. 8 (2014) 2809-2821. **ISI (IF: 1.232)**.
200. **Omar Abu Arqub, Zaer Abo-Hammour, Ramzi Al-badarneh, Shaher Momani**, A reliable analytical method for solving higher-order initial value problems, *Discrete Dynamics in Nature and Society*, Vol. 2013 (2013) 1-12. **ISI (IF: 0.711)**.
201. **Ahmad El-Ajuo, Omar Abu Arqub, Zeyad Al Zhour, Shaher Momani**, New results on fractional power series: theory and applications, *Entropy Journal*, Vol. 15 (2013) 5305-5323. **ISI (IF: 1.347)**.
202. **Nabil Shawagfeh, Omar Abu Arqub, Shaher Momani**, Analytical solution of nonlinear second-order periodic boundary value problem using reproducing kernel method, *Journal of Computational Analysis and Applications*, Vol. **16(4)** (2014) 750-762. **ISI (IF: 0.609)**.
203. **Vedat Suat ERTURK, Gul Zaman, Baha Alzalg, Anwar Zeb, Shaher Momani**, Comparing two numerical methods for approximating a new giving up smoking model involving fractional order derivatives, *Iranian Journal of Science and Technology (Sciences)*, In Press. **ISI (IF: 0.217)**.

204. **Anwar Zeb, Madad Khan, Gul Zaman Shaher Momani, Vedat Saat ERTÜRK**, Comparison of numerical methods of the SEIR epidemic model of fractional order, *Zeitschrift fr Naturforschung A - A Journal of Physical Sciences*, Vol. **69a** (2014) 81-89.
205. **Omar Abu Arqub 1, Ahmad El-Ajuo 1, Zeyad Al Zhou, Shaher Momani**, Multiple solutions of nonlinear boundary value problems of fractional order: new analytic iterative technique *Entropy Journal*, Vol. 16 (2014) 471-493. **ISI (IF: 1.821)**.
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207. **Za'er Abo-Hammour, Omar Abu Arqub, Shaher Momani**, Optimization solution of Troesch's and Bratu's problems of ordinary type using novel continuous genetic algorithm, *Discrete Dynamics in Nature and Society*, Vol. 2014 (2014) 1-15. **ISI (IF: 0.711)**.
208. **Samia Bushnaq, Banan Maayaah, Shaher Momani, A. Alsaidi**, A Reproducing Kernel Hilbert Space Method for Solving Systems of Fractional Integro-Differential Equations, *Abstract and Applied Analysis*, Vol. 2014 (2014) 1-6. **ISI (IF: 1.102)**.
209. **Shaher Momani, Omar Abu Arqub, Tasawar Hayat, Hamed Al-Sulami** , A computational method for solving periodic boundary value problems for integro-differential equations of Fredholm-Volterra type, *Applied Mathematics & Computation* , Vol. **240**(2), (2014) 229-239. **ISI (IF: 1.738)**.
210. **Syed Abbas, Vedat Saat Erturk and Shaher Momani**, Dynamical analysis of the Irving-Mullineux oscillator equation of fractional order, *Signal Processing*, Vol. 102 (2014) 171-176. **ISI (IF: 3.11)**.
211. **Shaher Momani, Asad Freihat, Mohammed Al-Smadi**, Analytical study of fractional-order multiple chaotic FitzHugh-Nagumo neurons model using multi-step generalized differential transform method, *Abstract and Applied Analysis*, Vol. 2014 (2014) 1-10. **ISI (IF: 1.102)**.
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213. **Shaher Momani, Omar Abu Arqub, Ma'mon Abu Hammad, Za'er Abo-Hammour**, A residual power series technique for solving systems of initial value problems, *Applied Mathematics & Information Sciences* , Vol. 10 (2016) 765-775. **ISI (IF: 1.232)**.
214. **Banan Maayaah, Samia Bushnaq, Shaher Momani, Omar Abu Arqub**, "Iterative multi-step reproducing kernel Hilbert space method for solving strongly nonlinear oscillators, *Advances in Mathematical Physics* , Vol. 2014 (2014) 1-7. **ISI (IF: 0.643)**.
215. **Iryna Komashynska, Mohammed Al-Smadi, Omar Abu Arqub, Shaher Momani**, An Efficient Analytical Method for Solving Singular Initial Value Problems of Nonlinear Systems, *Applied Mathematics and Information Sciences*, Vol. 10 (2016) 647-656. **ISI (IF: 1.232)**.
216. **Ahmad El-Ajou, Omar Abu Arqub, Shaher Momani**, Approximate analytical solution of the nonlinear fractional KdV-Burgers equation: a new iterative algorithm, *Journal of Computational Physics*, Vol. 293 (2015) 81-95. **ISI (IF: 2.746)**.
217. **Omar Abu Arqub, Ahmad El-Ajou, Shaher Momani**, Constructing and predicting solitary pattern solutions for nonlinear time-fractional dispersive partial differential equations, *Journal of Computational Physics*, Vol. 293 (2015) 385-399. **ISI (IF: 2.746)**.

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219. **Omar Abu Arqub, Shaher Momani, Saleh Al-Mezel, Marwan Kutbi**, Existence, uniqueness, and characterization theorems for fuzzy integrodifferential equations of Volterra type, *Mathematical Problem in Engineer*, Vol. 2015 (2015) 1-13. **ISI (IF: 0.802)**.
220. **Ahmad El-Ajou, Omar Abu Arqub, Shaher Momani, Dumitru Baleanu, Ahmed Alsaedi**, A novel expansion iterative method for solving linear partial differential equations of fractional order, *Applied Mathematics and Computations*, Vol. 257 (2015) 119-133. **ISI (IF: 1.738)**.
221. **Omar Abu Arqub, Mohammed AL-Smadi, Shaher Momani, Tasawar Hayat, Ahmed Alsaedi**, Numerical Solutions of Fuzzy Differential Equations Using Reproducing Kernel Hilbert Space Method, *Soft Computing*, Vol. 20(8) (2016) 3283-3302. **ISI (IF: 2.472)**.
222. **H. M. Jaradat, Fadi Awawdeh, Safwan Al-Shara, Marwan Alquran, Shaher Momani**, Controllable dynamical behaviors and the analysis of fractal Burgers hierarchy with the full effects of inhomogeneities of media, *Romanian Journal of Physics*, Vol. 60 (2015) 324-343. **ISI (IF: 1.758)**.
223. **Shaher Momani, Za'er S. Abo-Hammour, Othman MK. Alsmadi**, Solution of inverse kinematics problem using genetic algorithms, *Applied Mathematics & Information Sciences*, Vol. 10 (2016) 225-235. **ISI (IF: 1.232)**.
224. **Omar Abu Arqub, Shaher Momani, Saleh Al-Mezel, Marwan Kutbi, Ahmed Alsaedi**, Existence and uniqueness of fuzzy solution for the nonlinear second-order fuzzy Volterra integrodifferential equations, *Journal of Computational Analysis and Applications*, Vol. 21(2) (2016) 213-217. **ISI (IF: 1.609)**.
225. **Banan Maayah, Samia Bushnaq, Morad Ahmad, Shaher Momani**, Computational method for solving nonlinear Fredholm-Integro-Differential equations, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 7802-7806. **ISI (IF: 1.666)**.
226. **Morad Ahmad, Shaher Momani, Omar Abu Arqub, Mohammed AL-Smadi, Ahmed Alsaedi**, An efficient computational method for handling singular second-order, three points Volterra integrodifferential equations, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 7807-7815. **ISI (IF: 1.666)**.
227. **Samia Bushnaq, Banan Maayah, Shaher Momani, Omar Abu Arqub, Mohammed AL-Smadi, Ahmed Alsaedi**, Analytical simulation of singular second-order, three points BVPs for Fredholm operator using computational kernel algorithm, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 7816-7824. **ISI (IF: 1.666)**.
228. **Mohammed Al-Smadi, Asad Freihat, Ma'mon Abu Hammad, Shaher Momani**, Analytical approximations of partial differential equations of fractional order with multistep approach, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 7793-7801. **ISI (IF: 1.666)**.
229. **A.F. Jameel, Nidal Anakira, A. K. Alomari, I. Hashim, Shaher Momani**, A New Approximation Method for Solving Fuzzy Heat Equations, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 7825-7832. **ISI (IF: 1.666)**.
230. **Ahmad El-Ajou, Omar Abu Arqub, Shaher Momani**, Solving fractional two-point boundary value problems using continuous analytic method, *Ain Shams Engineering Journal*, Vol. 4 (2013) 539-547. **(Scopus)**.

231. **Shaher Momani, Omar Abu Arqub, Asad Freihat Mohammed AL-Smadi**, Analytical approximations for Fokker-Planck equations of fractional order in multistep schemes, *International Journal of Applied and Computational Mathematics*, Vol. 15(3) (2016) 319-330.
232. **Asia Albzeirat, Muhammad Zaini Ahmad, Shaher Momani**, A novel numerical algorithm to solve systems of fuzzy differential equations of fractional and integer order using reproducing Hilbert space method, *Journal of Computational and Theoretical Nanoscience*, Vol. 13(11) (2016) 8789-8799. **ISI (IF: 1.666)**.
233. **Asia Albzeirat, Muhammad Zaini Ahmad, Shaher Momani, Israr Ahmad**, New implementation of reproducing kernel Hilbert space method for solving a fuzzy integro-differential equation of integer and fractional orders, *Journal of King Saud University-Science*, In Press. **(Scopus)**.
234. **Asia Albzeirat, Muhammad Zaini Ahmad, Shaher Momani, Banan Maayah**, Numerical solution of second-order fuzzy differential equation of integer and fractional order using reproducing kernel hilbert space method tools, *Far East Journal of Mathematical Sciences*, Vol. 101(6) (2016) 1327-1329. **(Scopus)**.
235. **Asia Albzeirat, Muhammad Zaini Ahmad, Shaher Momani**, Approximate solutions of fuzzy differential equations of fractional order using modified reproducing kernel Hilbert space method, *Journal of Nonlinear sciences and Applications*, Vol. 10(11) (2017) 2423-2439. **ISI (IF: 1.34)**.
236. **Shatha Hasan, Mohammad Almomani, Ahmad Alawneh, Shaher Momani**, Second Order Fuzzy Fractional Differential Equations Under Caputo's H-Differentiability, *Applied Mathematics & Information Sciences*, accepted. **ISI (IF: 1.232)**.
237. **Mohammed Al-Smadi, Asad Freihat, Hammad Khalil, Shaher Momani, Rahmat Ali Khan**, Numerical Multistep Approach for Solving Fractional Partial Differential Equations, *International Journal of Computational Methods*, Vol. 14(3) (2016) 1750029-15. **ISI (IF: 1.053)**.
238. **Omar Abu Arqub, Mohammed AL-Smadi, Shaher Momani, Tasawar Hayat, Ahmed Alsaedi**, Application of reproducing kernel algorithm for solving second-order, two-point fuzzy boundary value problems, *Soft Computing*, Vol. 21(23) (2016) 7191-7206. **ISI (IF: 2.472)**.
239. **Zaina Momani, Mohammad Al Shridah, Omar Abu Arqub, Mohammad Al-Momani, Shaher Momani**, Modeling and Analyzing Neural Networks Using Reproducing Kernel Hilbert Space Algorithm, *Applied Mathematics & Information Sciences*, accepted. **ISI (IF: 1.232)**.
240. **Asia Albzeirat, Muhammad Zaini Ahmad, Shaher Momani, Israr Ahmad, r Fathilah Mohammad Alipiah**, Generalizing the Meaning of Derivatives and Integrals of any Order Differential Equations by Fuzzy-Order Derivatives and Fuzzy-Order Integrals, *Journal of King Saud University-Science*, In Press. **(Scopus)**.
241. **Marlo M. Vernon, Andrew Balas, Shaher Momani**, Are university rankings useful to improve research? A systematic review, *PLOS ONE*, In Press. **(Scopus)**.

## Submitted Papers

1. **Vedat ERTURK, Kamal Shah, Shaher Momani, Rahmat Ali Khan**, Existence theory and numerical solutions to two point boundary value problem of nonlinear fractional differential equations, *Chaos, Solitons and Fractals*, submitted.



2. **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.
3. **Md. Alal Hosen, M.S.H. Chowdhury, Shaher Momani, Mohammad Yeakub Ali, Ahmad Faris Ismail**, A computational method for solving periodic boundary value problems for integro-differential equations of Fredholm-Volterra type, *Applied Mathematics and Computation*, submitted.
4. **Omar Abu Arqub, Shaher Momani, Tasawar Hayat, Ahmed Alsaedi**, The reproducing kernel algorithm for handling differential algebraic systems of ordinary differential equations, *Journal of Computational and Applied Mathematics*, submitted.
5. **Omar Abu Arqub, Shaher Momani, Tasawar Hayat, Ahmed Alsaedi**, The reproducing kernel algorithm for handling coupled differential systems of fourth-order and second-order BVPs, *JMathematical Methods in Applied Sciences* , submitted.
6. **Omar Abu Arqub, Shaher Momani, Ahmad El-Ajou**, A reliable algorithm for solving linear and nonlinear time-fractional Schrdinger equations in one-dimensional space, *International Journal of Applied and Computational Mathematics*, submitted.
7. **Omar Abu Arqub, Shaher Momani, Dumitru Baleanu**, The reproducing kernel algorithm for handling singular BVPs restricted by Fredholm-Volterra operators, *Applied Mathematics and Computations*, submitted.
8. **Omar Abu Arqub, Ahmad El-Ajou, Shaher Momani**, Arliable algorithm for solving linear and nonlinear time-fractional Schrodinger equations in one-dimentional space, *Applied Mathematics and Computations*, submitted.
9. **Omar Abu Arqub, Shaher Momani, Tasawar Hayat, Ahmed Alsaedi**, Application of Reproducing Kernel algorithm for solving second-order, two-point BVP, *Information Sciences*, submitted.
10. **Shaher Momani, Omar Abu Arqub, Marwan Kutbi, Ahmed Alsaedi**, A new iterative reproducing kernel for solving first-order, two-point fuzzy periodic BVP, *Information Sciences*, submitted.
11. **Baha Alzalg, Shaher Momani, Vedat Saat ERTURK, Ahmed Alsaedi**, Extension of Homogeneous Self-dual Methods to Symmetric Cones under Certainty, *Journal of Inequalities and Applications*, submitted.
12. **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.
13. **Mohammed AL-Smadi, Omar Abu Arqub, Shaher Momani**, A numerical method for solving systems of first-order periodic boundary value problems, *Electronic Transactions on Numerical Analysis (ETNA)* , submitted.
14. **Shaher Momani and Salah Abuasad**, Variational iteration method for solving Fisher's equation. *Communications in Nonlinear Science and Numerical Simulation*, submitted.
15. **Sana Abu Gurrah, Shaher Momani and Vedat Saat Erturk**, The modified differential transform method for handling strongly non-linear oscillators. *Journal of Sound and Vibration*, submitted.

16. **Asghar Ghorbani and Shaher Momani**, A homotopy perturbation algorithm to solve semi-differential equations. *Applied Mathematical Modelling*, submitted.
17. **Asghar Ghorbani and Shaher Momani**, A novel algorithm for nonlinear ordinary differential equations of first order. *Applied Mathematical Modelling*, submitted.
18. **M. H. Alnasr, G. H. Erjaee and Shaher Momani**, Application of the multistage homotopy perturbation method to the bifurcation of some dynamical systems. *Applied Mathematical Modelling*, submitted.
19. **S.H. Hosein Nia, A. Ranjbar N., H. Delavari, R. Ghaderi, Shaher Momani**, Using sliding mode control to synchronize the chaos in fractional order Genesio-Tesi and Coulet Systems. *Chaos, Solitons and Fractals*, submitted.
20. **Marwan Al-Quran, Shaher Momani and Mohammad Alrefai**, The decomposition method and the variational iteration method for exact solutions of partial differential equations with continuous delay. *Applied Mathematical Modelling*, submitted.
21. **Syed Abbas, and Shaher Momani**, Existence and uniqueness of solution for a fractional order logistic model. *Journal of King Saud University*, submitted.
22. **Hossein Jafari, M. Nazari, Shaher Momani and Dumitru Baleanu**, Approximate analytical solutions of the space and time fractional Burgers equations using the Laplace homotopy perturbation method, *International Journal of Bifurcation and Chaos*, submitted.
23. **Shaher Momani, Vedat Suat Erturk and Zaid Odibat**, Recent applications of fractional calculus in mathematical biology, *Discrete and Continuous Dynamical Systems-Series B (DCDS-B)*, submitted.
24. **K. Moaddy, A. G. Radwan, , K.N. Salama, Shaher Momani, and I. Hashim**, The Effect of System Parameters on The Fractional Order Range for Lü Chaotic System, *Proceedings of The Fifth IFAC Workshop on Fractional Differentiation and its Applications*, China, 2012.
25. **Eman Abuteen, Ahmad Alawneh and Shaher Momani**, Solving the fractional nonlinear Bloch system using multi-step generalized differential transform method. *Proceedings of The Fifth IFAC Workshop on Fractional Differentiation and its Applications*, China, 2012.
26. **Sunil Kumar, Shaher Momani**, A new coupling technique for solving singular Integral equation of Abel type, *Zeitschrift für Naturforschung A* , submitted.
27. **Omar Abu Arqub, Shaher Momani, Nabil Shawagfeh**, Solving system of initial value problems by an efficient numerical method, *Applied Mathematics & Computation* , submitted.

## Conferences and Study Visits

1. The First Jordanian Mathematics Conference, Jordan, 1991.
2. The Second Jordanian Mathematics Conference, Jordan, 1994.
3. The Third Jordanian Mathematics Conference, Jordan, 1996.
4. A workshop in Teaching Sciences in the Twenty First Century, Cairo, 1995.
5. A workshop in Teaching Calculus Using Mathematica Software, Alexandria, 1995.
6. Visiting Professor, Department of Mathematics, Univ. of Wales, UK, June - August 1996.

7. A workshop on Mathematics of Computation, Yarmouk University, Jordan, 1997.
8. Visiting Professor, Department of Mathematics, Univ. of Wales, UK, August 1997.
9. The 15th World Congress on Scientific Computation, Modelling and Applied Mathematics (IMACS), Berlin, Germany, 1997.
10. Sixth SIAM Conference on Optimization, Atlanta, USA, 1999.
11. A workshop on Numerical Solution of Differential Equations, Mu'tah University, Jordan, 2000.
12. A workshop on Applications of Calculus, UAE University, UAE, 2001.
13. First UAE Math-Day Conference, University of Sharjah, UAE, 2003.
14. Third International Workshop on Scientific Computing and Application, Honk Kong, China, 2003.
15. A workshop on Making Internship Programs More Effective, UAE University, UAE, 2003.
16. Second UAE Math-Day Conference, American University of Sharjah, UAE, 2004.
17. Invited speaker in Recent Advances in Mathematics Conference, India, 2004.
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, Qatar University, Qatar, November 2007.
24. Visiting Professor: Department of Mathematics, University of Wales, June-August 1996, UK.
25. Visiting Professor: King Abdullah University for Science and Technology (KAUST), June 2010, KSA.
26. Visiting Professor: Universiti Kebangsaan Malaysia (UKM), June 2010, Malaysia.
27. Invited speaker in The Fifth IFAC Workshop on Fractional Differentiation and its Applications FDA12, 2012 Nanjing, China.
28. Invited speaker in the International Symposium on Fractional PDEs: Theory, Numerics and Applications, 2013, Brown University, USA.
29. Invited speaker in The Sixth IFAC Workshop on Fractional Differentiation and its Applications FDA14, 2014 Catania, Italy.
30. Invited speaker in International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM 2015) , June 3-6, 2015, Istanbul, Turkey.
31. Invited speaker in the Fifth International Platform on Integrating Arab e-Infrastructure a Global Environment, (2015), Casablanca, Morocco.

32. Invited speaker in The International Conference on Fractional Differentiation and its Applications, July 18-20, 2016 Novi Sad, Serbia.
33. Invited speaker in International Conference on Fundamental and Applied Sciences, August 22-26, 2016, Istanbul, Turkey.
34. Invited speaker in Major Challenges facing Higher Education in the Arab World: Quality Assurance and Relevance, November 9-11, 2017, Beirut, Lebanon.
35. Invited speaker in Mathematical Models in Ecology and Evolution, July 10-12, 2017, London, UK.
36. 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.

## 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.
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.

### • 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.

• **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.

• **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.

• **The University of Jordan: 2009-present**

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.

## 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).

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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).
11. Asia Albzeirat: Numerical Methods For Solving Fuzzy Differential Equations Of Integer And Fractional Orders, University Malaysia Perlis, Malsysia, (2017).
12. Shatha Hasan: Numerical Solution Of Fuzzy Initial Value Problems Using Reproducing Kernel Hilbert Space Method, The Jordan University, Jordan, (2016).
13. Laith Alhawahsheh: Parametric Marcinkiewicz Integral Operators, The Jordan University, Jordan, (2017).
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**I hereby declare that the information provided in this C. V. is true complete and correct to the best of my knowledge and belief.**

**Signature:.....**

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