CURRICULUM VITAE

Belal Batiha, Ph.D.

Personal Data

Name	:	Belal Mohammed Abdel-Rahman Batiha
Date & Place of Birth	:	01 September 1979, Jordan
Sex	:	Male
Nationality	:	Jordanian
Name of Current Employer	:	Jadara University, Jordan
Telephone No.	:	00962782114963
Email	:	b.bateha@jadara.edu.jo, belalbatiha2002@yahoo.com
Title of Position Held	:	Associate Professor
Fields of Specialization	:	Applied Mathematics
Published Papers	:	47
Published Books	:	3
Citations by Scopus	:	536
Scopus H-index	:	13
Citations by Google Scholar	:	1183
Google Scholar H-index	:	18

Academic Qualifications

Doctor of Philosophy: Applied Mathematics, National University of Malaysia (UKM) in 2008, Title of PhD Thesis: Numerical solutions of ordinary and partial differential equation by variational iteration method.

According to QS World University Rankings 2021 UKM is in the rank of 141 (www.topuniversities.com/universities/universiti-kebangsaan-malaysia-ukm)

Master of Science: Mathematics, National University of Malaysia (UKM) in 2005, with excellent degree (First Class), Title of Master Thesis: Solving linear and nonlinear partial differential equations by using the Adomian decomposition method.

Bachelor of Science: Mathematics, Faculty of Arts and Science, Al al-Bayt University, Jordan in 2002.

Research

Long-term project

1. STGL-011-2006 (SAGA P24c) (UKM). Solving nonlinear problems of physics via semi-analytical methods. Sept 2006 – Sept 2008.

Short-term project

1. Solving linear and nonlinear DE by numerical methods. Jadara University. Sept 2018 – Sept 2019.
2. Numerical solution of some nonlinear DE. Jadara University. Sept 2019 – Sept 2020.
3. Solving DE and PDE by the Daftardar-Gejji and Jafari method (DJM). Jadara University. Sept 2020 – Sept 2021.

Research Interests

My general research interests are in the areas of applied mathematics, differential equations and numerical methods.

Publications

Journals

(In preparation)

1. **B. Batiha**, Modified Differential Transformation Method for Singular IVPs of Generalized Emden–Fowler type.

(Submitted)

1. **B. Batiha**, Numerical simulations of the dispersive partial differential equations using Daftardar-Gejji and Jafari Method, Communications in Nonlinear Science and Numerical Simulation.

(Published)

1. **Belal Batiha**, Efficient Numerical Solutions for Fuzzy Time Fractional Diffusion Equations Using Two Explicit Compact Finite Difference Methods, Computation (2024), 12(4), 79 (Scopus Q2)

2. Tariq Qawasmeh, Raed Hatamleh, **Belal Batiha**, Ahmed Salem Heilat, On The Linear Equivalence of Sequences in Hilbert Spaces, J. Appl. Math. & Informatics Vol. 42(2024), No. 2, pp. 237 - 243, https://doi.org/10.14317/jami.2024.237, (Scopus Q4)

3. **Belal Batiha**, Innovative Solutions for the Kadomtsev-Petviashvili Equation via the New Iterative Method, Mathematical Problems in Engineering, (2024), 5541845, (Scopus Q1)

4. F. Ghanim, **Belal Batiha**, Ali Hasan Ali and M. Darus, Geometric Properties of a Linear Complex Operator on a Subclass of Meromorphic Functions: An Analysis of Hurwitz-Lerch-Zeta Functions, Applied Mathematics and Nonlinear Sciences, 8(2) (2023) 2229-2240 (Scopus Q1, Impact Factor 3.1)

5. **Belal Batiha**, Ahmed Salem Heilat and Firas Ghanim, Closed-Form Solutions for Cauchy-Euler Differential Equations through the New Iterative Method (NIM), Applied Mathematics & Information Sciences, Vol. 17, No. 3, 459-467 (2023). (Scopus Q2)

6. **Belal Batiha**, An Iterative Method for Solving the Dispersive Partial Differential Equations, Information Sciences Letters, Vol. 12, No. 6, 2357-2364 (2023). (Scopus Q2)

7. **Belal Batiha**, Solving One Species LotkaVolterra Equation by the New Iterative Method (NIM), WSEAS Transactions on Mathematics, vol. 22, pp. 324-329, 2023. (Scopus Q3)

8. A.S. Heilat, **B Batiha**, T. Qawasmeh, R. Hatamleh, Hybrid Cubic B-spline Method for Solving A Class of Singular Boundary Value Problems, European Journal of Pure and Applied Mathematics 16 (2), 751-762 (2023). (Scopus Q3)

9. **Belal Batiha**, Areen Al-khateeb and Hamzeh Zureigat, Improving Numerical Solutions for the Generalized Huxley Equation: The New Iterative Method (NIM), Applied Mathematics & Information Sciences, Vol. 17, No. 3, 423-427 (2023). (Scopus Q2)

10. **Belal Batiha**, Firas Ghanim, Khaled Batiha, Application of the New Iterative Method (NIM) to the Generalized Burgers-Huxley Equation. Symmetry 2023, 15, 688. https://doi.org/10.3390/sym15030688. (Scopus Q1, Impact Factor 2.9)

11. Osama Ala'yed, **Belal Batiha**, Diala Alghazo, Firas Ghanim. Cubic B-Spline method for the solution of the quadratic Riccati differential equation. AIMS Mathematics, 2023, 8(4): 9576-9584. (Scopus Q1, Impact Factor 2.7)

12. **Belal Batiha**, Firas Ghanim, O. Alayed, Raed Hatamleh, Ahmed Salem Heilat, Hamzeh Zureigat, Omar Bazighifan, 2022, Solving Multispecies LotkaVolterra Equations by the Daftardar-Gejji and Jafari Method, International Journal of Mathematics and Mathematical Sciences, vol. 2022, 1-7. (Scopus Q2)

13. F. Ghanim; Hiba F. Al-Janaby; Marwan Al-Momani; **B. Batiha**, 2022, Geometric Studies on Mittag-Leffler Type Function Involving a New Integrodifferential Operator, Mathematics 2022, Volume 10, Issue 18, 32-43. (Scopus Q1, Impact Factor 2.6)

14. **B. Batiha**, 2022, New Solution of the Sine-Gordon Equation by the Daftardar-Gejji and Jafari Method, Symmetry 2022, Volume 14, Issue 1, 57. (Scopus Q1, Impact Factor 2.9)

15. **B. Batiha**, Firas Ghanim, 2021, Numerical Implementation of Daftardar-Gejji and Jafari Method to the Quadratic Riccati Equation, Buletinul Academiei De Stiinte, A Republicii Moldova. Matematica, Number 3(97), 2021, Pages 21-29. (Scopus Q4)

16. Ahmed Salem Heilat, Hamzeh Zureigat, Raed Hatamleh, **Belal Batiha**, 2021, A New Spline Method for Solving Linear Two-Point Boundary Value Problems, European Journal of Pure And Applied Mathematics, Vol. 14, No. 4, 2021, 1283-1294. (Scopus Q3)

17. R. Abdelrahim, Z. Omar , O. Alayed , **Belal Batiha**, 2019, Hybrid third derivative block method for the solution of general second order initial value problems with generalized one step point, European Journal of Pure And Applied Mathematics, Vol. 12, No. 3, 2019, 1199-1214. (Scopus Q3)

18. Alayed, O., **Belal Batiha**, Abdelrahim, R., Jawarneh, A., 2019, On the numerical solution of the nonlinear Bratu type equation via quintic B-spline method, Journal of Interdisciplinary Mathematics, 22 (4) (2019), 405-413. (Scopus Q2, Impact Factor 1.8)

19. F. Ghanim and **Belal Batiha**, 2018, New applications of generalized hypergeometric functions and linear operator with Hurwitz-Lerch-Zeta function, Nonlinear Functional Analysis and Applications (NFAA), Vol. 23, 2018, 431- 442.

20. A. A. Farooq, **Belal Batiha**, A. M. Siddiqui , 2017, Lifting of a Jeffrey fluid on a vertical belt under the simultaneous effects of magnetic field and wall slip conditions, International Journal of Engineering & Technology, **6** (3) (2017) 101-104.

21. **Belal Batiha**, Firas Ghanim, 2017, Solving strongly nonlinear oscillators by new numerical method, International Journal of Pure and Applied Mathematics, **116** (1) 115–124.

22. R Yulita, **B Batiha**, M Taib, 2016, Solutions of fractional Zakharov–Kuznetsov equations by fractional complex transform, International Journal of Applied Mathematical Research, **5** (1) 24–28.

23. **Belal Batiha**, 2015, A new efficient method for solving quadratic Riccati differential equation, International Journal of Applied Mathematical Research, **4** (1) 24–29.

24. **Belal Batiha**, 2014, The solution of the prey and predator problem by differential transformation method, International Journal of Basic and Applied Sciences, **4** (1) 36–43.

25. A. A. Farooq, **Belal Batiha**, A. M. Siddiqui , 2013, A numerical study of thin film flow of a non-Newtonian fluid on a vertically moving belt using variational iteration approach, International Journal of Applied Mathematical Research, **2** (2) 325–337.

26. R. Yulita Molliq, **Belal Batiha**, 2012, Approximate Analytic Solutions of Fractional Zakharov–Kuznetsov Equations By Fractional Complex Transform, International Journal of Engineering and Technology, **1** (1) 1–13.

27. **Belal Batiha**, 2012, Comparison of Numerical Methods for Solving One Species Lotka–Volterra Equation, Annals of Oradea University - Mathematics Fascicola, Tom XIX, (1), 243–253.

28. **Belal Batiha**, 2012, The variational iteration method for solving nonlinear oscillators, Applied Mathematical Sciences, **6** (36), 1771–1777 .

29. Abdul-Monim Batiha , **Belal Batiha**, 2011, A new method for solving epidemic model, Australian Journal of Basic and Applied Sciences, **5**(12), 3122–3126.

30. Abdul-Monim Batiha , **Belal Batiha**, 2011 Differential transformation method for a reliable treatment of the nonlinear biochemical reaction model, Advanced Studies in Biology, **3** (8), 355–360.

31. Khaled Batiha, **Belal Batiha**, 2011, A New Algorithm for Solving Linear Ordinary Differential Equations, World Applied Sciences Journal, **15** (12), 1774–1779.

32. Khaled Batiha, **Belal Batiha**, 2011, A Reliable Algorithm for solving Cauchy-Euler Differential Equation, Australian Journal of Basic and Applied Sciences, **5**(11), 2161–2169.

33. **B. Batiha**, K. Batiha, 2010, An Analytic Study of the (2 + 1)-Dimensional Potential Kadomtsev-Petviashvili Equation, Advances In Theoretical and Applied Mechanics , Vol. 3, no. 11, 513 – 520

34. **B. Batiha**, 2010, A variational iteration method for solving the Bratu-type model Hacettepe Journal of Mathematics and Statistics, **39**, 23–29.

35. **B. Batiha**, 2009, Application of variational iteration method to linear partial differential equations. Applied Mathematical Sciences, **3**(50): 2491–2498.

36. **B. Batiha**, 2009, Numerical Solution of a Class of Singular Second- Order IVPs by Variational Iteration Method, International Journal of Mathematical Analysis, **3**(40):1953–1968.

37. **B. Batiha**, 2009, A variational iteration method for solving the nonlinear Klein-Gordon equation. Australian Journal of Basic and Applied Sciences, **3**(4): 3876–3890.

38. **B. Batiha**, M.S.M. Noorani & I. Hashim. 2008. Application of variational iteration method to the generalized Burgers-Huxley equation. *Chaos, Solitons & Fractals* **36**(3): 660–663 (Elsevier, ISSN 0960-0779, Impact Factor 2005: 1.938).

39. **B. Batiha**, M.S.M. Noorani, I. Hashim & K. Batiha. 2008. Numerical simulations of systems of PDEs by variational iteration method . *Phys. Lett. A* **372**(6): 822–829 (Elsevier, ISSN: 0375-9601, Impact Factor 2005: 1.550)

40. **B. Batiha**, M.S.M. Noorani, I. Hashim. 2008. The solution of the one species Lotka-Volterra equation using variational iteration method. Malaysian Journal of Mathematical Sciences **2**(2): 55–60.

41. **B. Batiha**, M.S.M. Noorani & I. Hashim. 2007. Numerical simulation of the generalized Huxley equation by He's variational iteration method. *Appl. Math. Comput.* **186**: 1322–1325 (Elsevier, ISSN 0096-3003, Impact Factor 2005: 0.688)

42. **B. Batiha**, M.S.M. Noorani, I. Hashim. 2007. Variational iteration method for solving multispecies Lotka-Volterra equations. *Comput. Math. Applics.* **54**(7-8): 903–909 (Elsevier, ISSN: 0898-1221, Impact Factor 2005: 0.430).

43. **B. Batiha**, M.S.M. Noorani, I. Hashim. 2007.A numerical solution of the sine-Gordon equation using variational iteration method. *Phys. Lett. A* **370**(5-6): 437–440 (Elsevier, ISSN: 0375-9601, Impact Factor 2005: 1.550)

44. **B. Batiha**, M.S.M. Noorani, I. Hashim, E.S. Ismail. 2007. The multistage variational iteration method for a class of nonlinear system of ODEs. Physica Scripta **76**: 388–392.(IOP, ISSN 0031-8949 (Print) ISSN 1402-4896 (Online) , Impact Factor 2005: 1.161).

45. **B. Batiha**, M.S.M. Noorani, I. Hashim.2007. Approximate analytical solution of coupled sine-Gordon equation by variational iteration method. Physica Scripta **76**: 445–448.(IOP, ISSN 0031-8949 (Print) ISSN 1402-4896 (Online) , Impact Factor 2005: 1.161).

46. **B. Batiha**, M.S.M. Noorani, I. Hashim.2007. Application of variational iteration method to heat- and wave-like equations. *Phys. Lett. A* **369**(1-2): 55–61 (Elsevier, ISSN: 0375-9601, Impact Factor 2005: 1.550)

47. **B. Batiha**, M.S.M. Noorani, I. Hashim. 2007. Solving Riccati differential equation using variational iteration method. *Int. Math. Forum* **2** (56): 2759–2770 (Hikari, ISSN 1312-7594).

48. **B. Batiha**, M.S.M. Noorani, I. Hashim. 2007. Numerical solutions of the nonlinear integro-differential equations, *Int. J. Open Problem Compt. Math.* **1**: 75–83.

49. I. Hashim, M.S.M. Noorani, **B. Batiha**. 2006. A note on the Adomian decomposition method for the generalized Huxley equation, Applied Mathematics and Computation, 181(2):1439-1445

Conferences

1. **Belal Batiha**, Advancing Kadomtsev-Petviashvili Wave Equation Solutions: The New Iterative Method Approach, The First Sharjah International Conference on Mathematical Science (SICMS23), 6-11-2023 to 8-11-2023, Sharjah University, Sharjah, UAE.

2. **Belal Batiha**,Variational iteration method to Bratu equations, Southeastern–Atlantic Regional Conference on Differential Equations, October 16–17, 2009, Mercer University, Macon, GA, United States.

3. **Belal Batiha**, Application of variational iteration method to Bratu–type equations, The 12th Symposium of Mathematics and its Applications, $5-7^{th}$ November 2009, TIMISOARA, Romania.

4. **B. Batiha**, M.S.M. Noorani and I. Hashim. The Multistage Variational Iteration Method for Solving Multispecies Lotka-Volterra Equations. ICMBio, KL. 4–6 Sept 2007. (AIP)

5. **B. Batiha**, M.S.M. Noorani and I. Hashim. Application of variational iteration method to the third-order dispersive equation. pp. 156–159 *Int. Conf. Research Educ. Math.* 10–12 April 2007.

6. S. Zenian, **B. Batiha**, I. Hashim. 2007. Numerical Comparisons of AGE Method and Adomian Decomposition Method for the Solution of Fourth-Order Parabolic Equation. pp. 260–265 *Int. Conf. Research Educ. Math.* 10–12 April 2007.

7. **B. Batiha**, M.S.M. Noorani & I. Hashim. The solution of the one species Lotka-Volterra equation using variational iteration method. NCMBio, KL. 22-23 August2006. UPM.

Books

1. **Belal Batiha**, 2012, *Variational Iteration Method and Its Applications*, LAP LAMBERT Academic Publishing, Germany, ISBN 978-3-8465-9081-2.

2. **Belal Batiha**, 2012, *Calculus, The Easy Way*, LAP LAMBERT Academic Publishing, Germany, ISBN 978-3-659-14836-1.

3. **Belal Batiha**, Khaldoun Batiha, Khaled Batiha, *The Simple Reference in Maple*, Amman, Jordan, 2011.

Editorial Board

1. The Journal of Advanced Research in Scientific Computing, Institute of Advanced Scientific Research, USA.
2. Applied Mathematics, Scientific & Academic Publishing, USA.

International Referee/Reviewer

1. Computers and Mathematics with Applications. (Elsevier)
2. Mathematical and Computer Modelling. (Elsevier)
3. Physics Letters A (Elsevier)
4. Applied Mathematics and Computation. (Elsevier)
5. Journal of Computational and applied Mathematics. (Elsevier)
6. Advances in Water Resources. (Elsevier)
7. International Journal of Open Problems in Computer Science and Mathematics.
8. International Journal of Nonlinear Science.

Masters Supervisions

Completed

1. Diya Mohammad Al-Rabee. Solving Differential Equations With Integer and Fractional Order Using The Laplace Decomposition Method. (Finished June 2022) (Sole supervision).
2. Salah Aljarrah. Solving differential equations with integer and fractional order using the Modified Cubic B-Spline Method. (Finished July 2022). (Sole supervision)
3. Orob Rjob. Solving differential equations with integer and fractional order using the Cubic B-Spline Method. (Finished August 2022). (Sole supervision)
4. Ghaida Alrjoub. Solving differential equations with fractional order using the Daftardar-Gejji and Jafari Method. (Finished September 2022). (Sole supervision)

Membership of Societies

1. Marquis Who's Who in the world, since 2008.
2. Member of the Jordanian Mathematics Society, since 2008.
3. Member of Jordan Research Group in Applied Mathematics (JRGAM), since 2011.

Experiences

Institution name	:	Jadara University
Location of work	:	Jordan, Irbid
Position	:	Associate Professor
Period	:	01/09/2018 – Now
Position	:	Vice Dean of Scientific Research
Period	:	07/10/2021 – 06/10/2023
Position	:	Head of Mathematics Department
Period	:	08/10/2019 – 06/10/2021

Institution name	:	Higher Colleges of Technology
Location of work	:	UAE, Abu Dhabi
Position	:	Assistant Professor
Period	:	01/03/2011 – 31/07/2017

Institution name	:	UAE Naval College
Location of work	:	UAE, Abu Dhabi
Position	:	Assistant Professor
Period	:	15/02/2010 – 28/02/2011

Institution name	:	Qassim University
Location of work	:	Al-Qassim, Kingdom of Saudi Arabia
Position	:	Assistant Professor
Period	:	03/10/2009 to 01/02/2010

Institution name	:	Philadelphia University
Location of work	:	Amman, Jordan
Position	:	Assistant Professor
Period	:	01/10/2008 to 01/10/2009

Institution name	:	National University of Malaysia
Location of work	:	Bangi, Malaysia
Position	:	Instructor
Period	:	01/08/2005 to 18/07/2008

Institution name	:	Bremen University
Location of work	:	Bremen, Germany
Position	:	Tutor and Research Assistant
Period	:	06/02/2002 to 17/11/2004

Honors, Academic Awards, Achievements

1. Top researcher at Jadara University for the year 2021.
2. PhD scholarship from National University of Malaysia (UKM) (2005 - 2008).
3. Recipient of First-Class Honors in Master's Degree from the National University of Malaysia (UKM).

Languages

(1) Language : Arabic
Skill level : Mother tongue

(2) Language : English
Skill level : Fluently speaking and writing

(3) Language : Germany
Skill level : Good in speaking and writing (test DAF)

Courses Taught

Calculus 1
Linear algebra 1
Numerical analysis 1
Differential Equations 1
Mathematics for Computing
Probability and Statistics
Information and the Internet
Foundation Mathematics
Research Methods
Geometry
Software Applications in Mathematics
Calculus 2
Linear algebra 2
Numerical analysis 2
Differential Equations 2
Discrete Structures
Computer Applications
Advance Programming Language
Mathematics for Naval Sciences
Partial Differential Equations
Numerical Methods (Master level)