# Waleed Abd-Elhameed

*"Curriculum Vitae"*
*Waleed Mohammed Abd-Elhameed Saleh*

## Personal Data

Name: Waleed Mohammed Abd-Elhameed Saleh
Date of birth: 15-1-1972
Place of birth: Damietta-Eygpt
Current address: Department of Mathematics, Faculty of Science, University of Jeddah,Jeddah, KSA
Scientistic Degree: Professor
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## Research Interests

- Numerical Analysis
- Spectral Methods
- Special Functions
- Approximation Theory
- Numerical Solutions of Partial Differential Equations
- Numerical Solutions of Fractional Differential Equations
- Wavelets Numerical Solutions
- Fibonacci and Lucas numbers

## Education

1994 **Bachelor of Science-Mathematics**, *Department of Mathematics, Faculty of Science, Cairo University.*
First Class Honours

2000 **Master of Science-Mathematics(Numerical Analysis)**, *Department of Mathematics, Faculty of Science, Cairo University.*

Title *Spectral Galerkin Method for Solving Second and Fourth Order Differential Equations by Using Ultraspherical Polynomials*

Advisor Professor E.H. Doha

2005 **Doctor of Philosophy in Science-Mathematics(Numerical Analysis)**, *Department of Mathematics, Faculty of Science, Cairo University.*

Title *Spectral Galerkin Methods for Solving Partial Differential Equations by Using Orthogonal Polynomials*

Advisor Professor E.H. Doha

## Experience

### Positions

1994-2000 **Demonstrator**, *Department of Mathematics, Faculty of Science, Cairo University.*

2000-2005 **Assistant Lecturer**, *Department of Mathematics, Faculty of Science, Cairo University.*

2006-2011 **Assistant Professor**, *Department of Mathematics, Faculty of Science, Cairo University.*

2011-2012 **Associate Professor**, *Department of Mathematics, Faculty of Science, Cairo University.*

2012-2014 **Associate Professor**, *Department of Mathematics, Faculty of Science, King Abdulaziz University.*

2015-2016 **Associate Professor**, *Department of Mathematics, Faculty of Science, University of Jeddah.*

2017-till now **Professor**, *Department of Mathematics, Faculty of Science, University of Jeddah.*

### Teaching

- I taught various courses in Department of Mathematics-Faculty of Science-Cairo University.
- I taught in a new Geosciences Programme in Faculty of Science-Cairo University.
- I taught in Misr University for Science and Technology at the academic year 2007-2008.
- I taught in the American University in Cairo (AUC) for the academic year 2011-2012.
- I taught in Faculty of Science-Mathematics Department-King Abdul-Aziz University, KSA, 2012-2014.
- I teach in Faculty of Science-Mathematics Department-University of Jeddah, Jeddah, Saudi Arabia since 2014.

## Organization

- A member of the Egyptian Mathematical Society,
- A member of the Mathematical and Physical Society of Egypt.

## Editorial Board Member

- Contemporary Mathematics
- Mathematical Sciences Letters

## Awards

| | |
|---|---|
| 2003 | Best M.Sc. thesis in Mathematics - Egyptian Mathematical Society |
| 2004 | The ideal assistant lecturer - Department of Mathematics, Faculty of Science, Cairo University |
| 2005 | Scientific excellence - Department of Mathematics, Faculty of Science, Cairo University |
| 2006 | Best Ph.D thesis in Mathematics - Egyptian Mathematical Society. |
| 2009-2016 | Research and Scientific Affairs - Cairo University. |
| 2016 | Amin Lotfy Prize in Mathematical Sciences awarded from Academy of Scientific Research and Technology )(ASRT). |
| 2017 | State Encouragement Award In Mathematical Sciences)(ASRT). |
| 2021 | I was included in the list of the top 2 percent out of hundred of the world's distinguished scientists at 2021. |

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## M. Sc. students

2008-2011 Y.H. Yousrri

Title *Spectral Dual-Petrov Galerkin Methods and Their Error Analysis for Solving odd-Order Differential Equations Using Generalized Jacobi Polynomials*

2010-2012 M.A. Bassuony

Title *Spectral Galerkin Method for Solving Even-Order Differential Equations by Using Third and Fourth Kinds Chebyshev Polynomials*

2011-2014 M.M. Abd-Elrahman

Title *Spectral Petrov-Galerkin Method for Solving High-Odd Order Two Point Boundary Value Problems by Using Chebyshev Polynomials of the Third and Fourth Kinds*

2019-2021 Asmaa M. Alkenedri

Title *New Spectral Solutions for Some Differential Equations Using Some Classes of Jacobi Polynomials*

2020- Afnan Ali

Title *New Linearization Formulas of Certain Jacobi Polynomials and Their Applications in Numerical Analysis*

2021- Badah M Badah

Title *Some New Formulae of Jacobi Polynomials: Numerical Treatments of Some Differential equations*

. 2021- Seraj Omar Alkhamisi

Title *New Theoretical Results of Special Kinds of Orthogonal Polynomials: Spectral Solutions of Certain Differential Equations*

## Ph. D. students

2012-2014 Y.H. Yousrri

Title *Spectral Accurate Methods for Solving Linear and Nonlinear Differential Equations Based on Wavelets and Orthogonal Polynomials*

2012-2016 M.A. Bassuony

Title *Spectral Methods for Solving Differential Equations Using Orthogonal Polynomials*

## Referring

I act as a reviewer in the following:

- Mathematical Reviews
- Zentralblatt MATH
- Journal of Mathematical Analysis and Applications
- Communications in Nonlinear Science and Numerical Simulation
- Applied Numerical Analysis
- Computers and Mathematics with Applications
- International Journal of Computer Mathematics
- Astronomy and Computing
- IEEE Access
- International Journal of Computational Mathematics
- International Journal of Nonlinear Sciences and Numerical Simulation
- Mathematical Modelling and Analysis
- Physics Letters A
- Applied Mathematics and Computation
- Mediterranean Journal of Mathematics
- The European Physical Journal Plus
- Mathematical Methods in the Applied Sciences
- Boundary Value Problems
- Entropy
- Nonlinear Engineering-Modeling and Application
- Springer Plus
- Advances in Difference Equations
- Applied Mathematics and Information Sciences
- Systems Science and Control Engineering
- Abstract and Applied Analysis
- Axioms
- Fractal and Fractional
- Mathematics
- Symmetry

## Skills and training

- UNESCO International Computer Driving License (ICDL)
- I attended the workshop in Cairo university in 14-12-2009 entitled " Publishing Scholarly Journals"

- I have attended and met the standards required for completion of a training course in the following:
  - Scientific publishing which held from: 23/6/2008 to 25/6/2008.
  - The examination systems and students assessment which held from: 1/7/2008 to 3/7/2008.
  - Research team management which held from: 18/1/2011 to 20/1/2011.
  - Legal and financial aspects in university environment which held from: 12/2/2011 to 14/2/2011.
  - Credit hour system which held from: 22/2/2011 to 24/2/2011.
  - Use of technology in teaching which held from: 28/2/2011 to 2/3/2011.
  - Effective teaching skills which held from 18/6/2016 to 19/6/1016.
  - Creative thinking which held from 20/6/2016 to 21/6/1016.
  - Conference organization which held from 10/8/2016 to 11/8/1016.
  - Quality standards in teaching which held from 10/8/2016 to 11/8/1016 (In the evening).
  - Crisis Management which held from 13/8/2016 to 14/8/1016.
  - Research ethics which held from 13/8/2016 to 14/8/1016. (In the evening)

## Conferences

(1) One day Conference on Spectral Methods and Their Applications in Computational Fluid Dynamics, Cairo University, Faculty of Science, Department of Mathematics, Egypt, November, 1999.

In this Conference, I have contributed with a paper entitled "Efficient Spectral-Galerkin Algorithms for Direct Solution of Second-Order Equations Using Ultraspherical Polynomials" Jointly with E. H. Doha.

(2) International Conference on Mathematics (Trends and Developments), Cairo 28-31 December 2002, On the occasion of the 10th anniversary of the Egyptian Mathematical Society.

In this Conference, I have contributed with a paper entitled "Efficient Spectral-Galerkin Algorithms for Direct Solution of Fourth-Order Equations Using Ultraspherical Polynomials" Jointly with E. H. Doha.

(3) One day Conference on Mathematical Analysis and its Applications, Cairo University, Faculty of Science, Department of Mathematics, Egypt, December, 2004.

(4) One day Conference on Mathematical Analysis and its Applications Cairo University, Faculty of Science, Department of Mathematics, Egypt, November, 2005.

(5) The Second International Conference on Mathematics ICMTD 07 organized by the Egyptian Mathematical Society held in Cairo from 27-30 December 2007 and I presented the paper entitled "Efficient Spectral Legendre-Dual-Petrov-Galerkin Algorithms for the Direct Solution of (2n+1) th- Order Linear Differential Equations".

(6) The Third International Conference on Mathematics ICMTD 2012 organized by the Egyptian Mathematical Society held in Cairo from 28-31 December 2012 and I contributed with paper entitled "A New Spectral Algorithm For Solving Linear and Nonlinear Second-Order Differential Equations Based on Second Kind Chebyshev Wavelets".

(7) International Conference on Mathematics (Trends and Developments), Ain Shams University, Cairo, Egypt, On the Occasion of the 25th anniversary of the Egyptian Mathematical Society. I contributed with the paper entitled: "Spectral tau algorithm for solving a class of fractional optimal control problems via Jacobi polynomials" 28-30 December 2017.

## Projects

I have finished from the following projects which were funded by the Deanship of Scientific Research (DSR), King Abdulaziz University, Jeddah, SA.

1. New Formulae for the High Order Derivatives of Some Jacobi Polynomials: An Application to Some High-Order Boundary Value Problems.
2. Some Algorithms for Solving Boundary Value Problems Using Novel Operational Matrices of Generalized Jacobi Polynomials.
3. New Ultraspherical Wavelets Spectral Solutions for Fractional Differential Equations.

## Publications

I have more than a hundred published papers. 90 papers are indexed in ISI and 95 papers are indexed in Scopus.

### From M. Sc.

1. Efficient Spectral-Galerkin Algorithms for Direct solution of Second-Order Equations Using Ultraspherical Polynomials, by E.H. Doha and W.M. Abd-Elhameed, SIAM Journal on Scientific Computing, Vol. **24**(2), (2002), pp. 548-571. Link

## From Ph. D.

2. Efficient spectral ultraspherical-Galerkin approximations for one-dimensional fourth-order problems, in: E.H. Doha and M.A. Helal (eds.), Proceedings of the International Conference on mathematics: Trends and Developments, Egyptian Mathematical Society, Cairo 28-31 Dec. (2002), Vol. III, Numerical Analysis, (2003), pp. 99-126.
3. Accurate spectral solutions for the parabolic and elliptic partial differential equations by the ultraspherical tau method, Journal of Computational and Applied Mathematics, Vol. **181**, (2005), pp. 24-45. Link

## After Ph. D.

4. W.M. Abd-Elhameed, Efficient spectral Legendre dual-Petrov Galerkin algorithms for the direct solution of $(2n+1)$th-order linear differential equations, Journal of the Egyptian Mathematical Society, Vol. **17**(2), 2009, 189-213.
5. E.H. Doha and W.M. Abd-Elhameed, Accurate spectral solutions for parabolic and elliptic partial differential equations by the Jacobi Tau method, Journal of the Egyptian Mathematical Society, Vol. **17**(1), (2009), pp. 35-63.
6. E.H. Doha and W.M. Abd-Elhameed, Efficient spectral ultraspherical-dual-Petrov-Galerkin algorithms for the direct solution of $(2n+1)$th-order linear differential equations, Mathematics and Computers in Simulation, Vol. **79**, (2009), pp. 3221-3242.Link
7. E.H. Doha, W.M. Abd-Elhameed and A. H. Bhrawy, Efficient spectral ultraspherical-Galerkin algorithms for the direct solution of $2nth$-order linear differential equations, Applied Mathematical Modelling, Vol. **33**, (2009), pp. 1982-1996.Link
8. E.H. Doha, W.M. Abd-Elhameed and A. H. Bhrawy, Jacobi spectral Galerkin method for elliptic Neumann problems, Numerical Algorithms, Vol. **50**, (2009), pp. 67-91. Link
9. A. H. Bhrawy and W.M. Abd-Elhameed, New Algorithm for the numerical solutions of nonlinear third-order differential equations using Jacobi-Gauss collocation method, Mathematical Problems in Engineering, Volume 2011, Article ID 837218, 14 pages. Link
10. E. H. Doha, W.M. Abd-Elhameed and Y. H. Youssri, Efficient spectral-Petrov-Galerkin methods for the integrated forms of third- and fifth-order elliptic differential equations using general parameters generalized Jacobi polynomials, Applied Mathematics and Computation, Vol. **218**, (2012), pp. 7727-7740. Link
11. E.H. Doha, W.M. Abd-Elhameed and H.M. Ahmed, The Coefficients of Differentiated Expansions of Double and Triple Jacobi Polynomials, Bulletin of the Iranian Mathematical Society, Vol. **38**(3), (2012), pp. 739-766. Link

12. E.H. Doha and W.M. Abd-Elhameed, Efficient Solutions of Mutidimensional Sixth-Order Boundary Value Problems Using Symmetric Generalized Jacobi-Galerkin Method, Abstract and Applied Analysis, Volume 2012, Article ID 749370, 19 pages. Link
13. W.M. Abd-Elhameed, E.H. Doha and Y.H. Youssri, Efficient spectral-Petrov-Galerkin methods for third- and fifth-order differential equations using general parameters generalized Jacobi polynomials, Quaestiones Mathematicae, Vol. **36**, (2013), pp. 15-38. Link
14. E.H. Doha, W.M. Abd-Elhameed and A.H. Bhrawy, New spectral-Galerkin algorithms for direct solution of high even-order differential equations using symmetric generalized Jacobi polynomials, Collectanea Mathematica, Vol. **64** , (2013), pp. 373-394.Link
15. E.H. Doha, W.M. Abd-Elhameed and M.A. Bassuony, New algorithms for solving high even-order differential equations using third and fourth Chebyshev-Galerkin methods, Journal of Computational Physics, Vol. **236**, (2013), pp. 563-579.Link
16. E.H. Doha, W. M. Abd- Elhameed and Y. H. Youssri, Second kind Chebyshev operational matrix algorithm for solving differential equations of Lane-Emden type, New Astronomy, Vol. **23-24**, (2013), pp. 113-117.Link
17. W. M. Abd- Elhameed, E.H. Doha and Y. H. Youssri, New Wavelets Collocation Method for Solving Second-Order Multi-Point Boundary Value Problems Using Chebyshev Polynomials of Third and Fourth Kinds, Abstract and Applied Analysis, Volume 2013, Article ID 542839, 9 pages.Link
18. W. M. Abd- Elhameed, E.H. Doha and Y.H. Youssri, New Spectral Second Kind Chebyshev Wavelets Algorithm for Solving Linear and Nonlinear Second-Order Differential Equations Involving Singular and Bratu Type Equations, Abstract and Applied Analysis, Volume 2013, Article ID 71756, 9 pages.Link
19. E.H. Doha and W.M. Abd-Elhameed, On the coefficients of integrated expansions and integrals of Chebyshev polynomials of third and fourth kinds, Bulletin of the Malaysian Mathematical Sciences Society (2), Vol. **37**(2), (2014), 383-398.Link
20. W.M. Abd-Elhameed, E.H Doha and M.A. Bassuony, Two Legendre-Dual-Petrov-Galerkin Algorithms for Solving the Integrated Forms of High Odd-Order Boundary Value Problems, Scientific World Journal, Volume 2014, Article ID 309264, 11 pages.Link
21. W.M. Abd-Elhameed and Y.H. Youssri, New ultraspherical wavelets spectral solutions for fractional Riccati differential equations, Abstract and Applied Analysis, Volume 2014, Article ID 626275, 8 pages.Link
22. W.M. Abd-Elhameed, New formulae for the high order derivatives of some Jacobi polynomials: An application to some high-order boundary value problems, Scientific World Journal, Volume 2014, Article ID 456501, 11 pages.Link

23. E.H Doha and W.M. Abd-Elhameed, Integrals of Chebyshev polynomials of third and fourth kinds: Two applications for solving boundary value problems with polynomial coefficients, Journal of Contemporary Mathematical Analysis, Vol. **49**(6), (2014), pp. 296-308.Link
24. W.M. Abd-Elhameed, On solving linear and nonlinear sixth-order two point boundary value problems via an elegant harmonic numbers operational matrix of derivatives, CMES: Computer Modeling in Engineering & Sciences, Vol. **101**(3), (2014), pp. 159-185.Link
25. W.M. Abd-Elhameed and Y.H. Youssri, Numerical solutions for Volterra-Fredholm-Hammerstein integral equations via second kind Chebyshev quadrature collocation algorithm, Advances in Mathematical Sciences and Applications, Vol. **24**, (2014), pp. 129-141.Link
26. W.M. Abd-Elhameed, Y.H. Youssri and E.H Doha, New Solutions for Singular Lane-Emden Equations Arising in Astrophysics Based on Shifted Ultraspherical Operational Matrices of Derivatives, Computational Methods for Differential Equations, Vol. **2**(3), (2014), pp. 171-185.Link
27. W.M. Abd-Elhameed, Some algorithms for solving third-order boundary value problems using novel operational matrices of generalized Jacobi polynomials, Abstract and Applied Analysis, Volume 2015, Article ID 672703, 10 pages.Link
28. E.H Doha, W.M. Abd-Elhameed and M.A. Bassuony, On the coefficients of differentiated expansions and derivatives of Chebyshev polynomials of the third and fourth kinds, Acta Mathematica Scientia , Vol. **35**(2), (2015), pp. 326-338.Link
29. E.H Doha, W.M. Abd-Elhameed and M.A. Bassuony, On using third and fourth kinds Chebyshev operational matrices for solving Lane-Emden type equations, Romanian Journal of Physics, Vol. **60**(3-4), (2015), pp.281-292.Link
30. W.M. Abd-Elhameed, New Galerkin operational matrix of derivatives for solving Lane-Emden singular-type equations, The European Physical Journal Plus, Vol. **130**(3), (2015), 12 pages.Link
31. W.M. Abd-Elhameed, New product and linearization formulae of Jacobi polynomials of certain parameters, Integral Transforms and Special Functions, Vol. **26**(8), (2015), pp. 586-599.Link
32. E.H. Doha, W. M. Abd- Elhameed, M. M. Alsuyuti, On using third and fourth kinds Chebyshev polynomials for solving the integrated forms of high odd-order linear boundary value problems, Journal of the Egyptian Mathematical Society, Vol. **23**(2), (2015), pp. 397-405. Link
33. W.M. Abd-Elhameed and Y.H. Youssri, New Spectral Solutions of Multi-Term Fractional-Order Initial Value Problems With Error Analysis, CMES: Computer Modeling in Engineering & Sciences, Vol. **105**(5), (2015), pp. 375-398. Link

34. W.M. Abd-Elhameed, New formulae for the linearization coefficients of some nonsymmetric Jacobi polynomials, Advances in Difference Equations, Vol. **168**, (2015), pp. 1-13. Link
35. W.M. Abd-Elhameed, Y.H. Youssri and E.H. Doha, A novel operational matrix method based on shifted Legendre polynomials for solving second-order boundary value problems involving singular, singularly perturbed and Bratu type equations, Mathematical Science, Vol. **9**(2), (2015), pp. 93-102. Link
36. Y.H. Youssri, W.M. Abd-Elhameed and E.H. Doha , Accurate spectral solutions of first- and second-order initial value problems by the ultraspherical wavelets-Gauss collocation method, Applications and Applied Mathematics: An International Journal, Vol. **10**(2), (2015), pp.835-851. Link
37. Y.H. Youssri, W.M. Abd-Elhameed and E.H Doha, Ultraspherical Wavelets Method for Solving Lane-Emden Type Equations, Romanian Journal of Physics, Vol. **60**(9-10), (2015), pp. 1298-1314.Link
38. E. H. Doha, W. M. Abd-Elhameed and Y. H. Youssri, New algorithms for solving third-and fifth-order two point boundary value problems based on nonsymmetric generalized Jacobi Petrov Galerkin method, Journal of advanced research Vol. **6**(5), (2015), 673-686.Link
39. E. H. Doha and W. M. Abd-Elhameed, New connection formulae between ultraspherical polynomials and Chebyshev polynomials of third and fourth kinds, Advanced Studies in Contemporary Mathematics, Vol. **25**(4), (2015), 511-524.Link
40. W.M. Abd-Elhameed, An elegant operational matrix based on harmonic numbers: Effective solutions for linear and nonlinear fourth-order two point boundary value problems, Nonlinear Analysis: Modelling and Control, Vol. **21**(4), (2016), pp. 448-464.
41. W.M. Abd-Elhameed, E.H Doha and H.M. Ahmed, Linearization formulae for certain Jacobi polynomials, The Ramanujan Journal, Vol. **39**(1), (2016), pp. 155-168.Link
42. W.M. Abd-Elhameed, E.H. Doha, A.-N. S. Saad and M.A. Bassuony, New Galerkin operational matrices for solving Lane-Emden type equations, Revista Mexicana de Astronomía y Astrofísica, Vol. **52**(1), (2016), pp. 83-92.Link
43. Waleed M. Abd-Elhameed, Linearization coefficients of some particular Jacobi polynomials via hypergeometric functions, Advances in Difference Equations, **91**, (2016). Link
44. W.M. Abd-Elhameed, Hany M. Ahmed and Youssri H. Youssri, A new generalized Jacobi Galerkin operational matrix of derivatives: two algorithms for solving fourth-order boundary value problems, Advances in Difference Equations, **22**, (2016). Link

45. E.H. Doha and W.M. Abd-Elhameed, New linearization formulae for the products of Chebyshev polynomials of third and fourth kinds, Rocky Mountain Journal of Mathematics, **46**, (2016), pp. 443-460., Link
46. W. M. Abd-Elhameed and Y.H. Youssri, spectral solutions for fractional differential equations via a novel Lucas operational matrix of fractional derivatives, Romanian Journal of Physics, **61**, (2016), pp. 795-813., Link
47. W. M. Abd-Elhameed and Y.H. Youssri, Solutions of the connection problems between Fermat and generalized Fibonacci polynomials, JP journal of Algebra, Number Theory and Applications, **38**, (2016), pp. 349-362., Link
48. W. M. Abd-Elhameed, Linearization coefficients of some particular Jacobi polynomials via hypergeometric functions, Advances in Difference Equations , **91**, (2016), Link
49. E.H. Doha and W.M. Abd-Elhameed and Y.H. Youssri, New ultraspherical wavelets collocation method for solving $2n$th-order initial and boundary value problems, Journal of the Egyptian Mathematical Society, (2016) **24**, 319-327 Link
50. W.M. Abd-Elhameed, New connection formulae between $(p, q)$ Fibonacci polynomials and certain Jacobi polynomials, Journal of Inequalities and Special Functions, (2016) **7**, 1-16. Link
51. W.M. Abd-Elhameed, E.H. Doha, Y.H. Youssri, and M.A. Bassuony, Tchebyshev Galerkin operational matrix method for solving linear and nonlinear hyperbolic telegraph type equations, Numerical Methods for Partial Differential Equations, (2016) **32**(6), 1553-1571. Link
52. W.M. Abd-Elhameed, and Y.H. Youssri, A Novel Operational Matrix of Caputo Fractional Derivatives of Fibonacci Polynomials: Spectral Solutions of Fractional Differential Equations, Entropy, (2016) **18**(10), 345. Link
53. W.M. Abd-Elhameed, Y.H. Youssri, N. El-Sissi and M. Sadek, New hypergeometric connection formulae between Fibonacci and Chebyshev polynomials, The Ramanujan Journal. (2017) **42**(2), 347-361.Link
54. A. Napoli and W. M. Abd-Elhameed, An innovative harmonic numbers operational matrix method for solving initial value problems, Calcolo (2017) **54**(1), 57-76. Link
55. W. M. Abd-Elhameed and N.A. Zeyada, A generalization of generalized Fibonacci and generalized Pell numbers, International Journal of Mathematical Education in Science and Technology. (2017) **48**(1), 102-107. Link
56. A. Napoli and W. M. Abd-Elhameed, A New Collocation Algorithm for Solving Even-Order Boundary Value Problems via a Novel Matrix Method, Mediterranean Journal of Mathematics **14**(4), 170. Link

57. A. Napoli and W. M. Abd-Elhameed, Numerical Solution of Eighth-order Boundary Value Problems by Using Legendre Polynomials, International Journal of Computational Methods (2017), **14**(7), 1750083 (19 pages)165-176.
58. W.M. Abd-Elhameed, New formulae of squares of some Jacobi polynomials via hypergeometric functions, Hacettepe Journal of Mathematics and Statistics (2017), **46**(2), 165-176. Link
59. W.M. Abd-Elhameed, New spectral solutions for high odd-order boundary value problems via generalized Jacobi polynomials, Bulletin of the Malaysian Mathematical Sciences Society, (2017) **40**, 1393-1412.
60. W.M. Abd-Elhameed and Y.H. Youssri, Generalized Lucas polynomial sequence approach for fractional differential equations, Nonlinear Dynamics, (2017) **89**, 1341-1355.
61. W.M. Abd-Elhameed, E.H. Doha, W.M. Abd-Elhameed and N.A. Elkot, Integral spectral Tchebyshev approach for solving space Riemann-Liouville and Riesz fractional advection-dispersion problems, Advances in Difference equations (2017), **284**. Link
62. W.M. Abd-Elhameed and Y.H. Youssri, Fifth-kind orthonormal Chebyshev polynomial solutions for fractional differential equations, Computational and Applied Mathematics, (2018) **37**, 2897-2921.
63. Bassuony, M.A., Abd-Elhameed, W.M., Doha, E.H., Youssri, Y.H., Legendre-Laguerre Petrov-Galerkin method for uniform Euler-Bernoulli beam equation, East Asian Journal on Applied Mathematics (2018) **8**(2), 280-295.
64. Y.H. Youssri and W.M. Abd-Elhameed, Numerical spectral Legendre-Galerkin algorithm for solving time fractional telegraph equation, Romanian Journal of Physics (2018), Article No. **107**, pp. 1-16.
65. W.M. Abd-Elhameed and N.A. Zeyada, new identities involving generalized Fibonacci and generalized Lucas numbers, Indian Journal of Pure and Applied Mathematics (2018) **49** (3), 527-537.
66. Abd-Elhameed, W.M., Youssri, Y.H., New Connection formulae between Chebyshev and Lucas polynomials: New expressions involving Lucas numbers via hypergeometric functions (2018) Advanced Studies in Contemporary Mathematics (Kyungshang). **28** (3), 357-367.
67. Doha, E.H., Abd-Elhameed, W.M., Elkot, N.A., Youssri, Y.H., Numerical spectral Legendre approach for solving space-time fractional advection-dispersion problems, Journal of the Egyptian Mathematical Society. (2018) **49** (3), 527-537.
68. Youssri, Y.H., Abd-Elhameed, W.M., Harmonic numbers operational matrix for solving fifth-order two point boundary value problems Tbilisi Mathematical Journal. (2018) **11** (2), 17-33.

69. W.M. Abd-Elhameed, New formulae between squares of some Jacobi polynomials and squares of certain fractional Jacobi functions Journal of Inequalities and Special Functions (2018) **9** (4), 39-52.

70. Y.H. Youssri, W.M. Abd-Elhameed, Spectral tau Algorithm for Solving a Class of Fractional Optimal Control Problems via Jacobi Polynomials, An International Journal of Optimization and Control: Theories & Applications.(2018) **8** (2), 152-160.

71. W.M. Abd-Elhameed, New formulae between Jacobi polynomials and some fractional Jacobi functions generalizing some connection formulae, Analysis and Mathematical Physics(2019) **9** (1), 73-98.

72. E.H. Doha, Y.H. Youssri, and W.M. Abd-Elhameed, Fully Legendre Spectral Galerkin Algorithm for Solving Linear One-Dimensional Telegraph Type Equation, International Journal of Computational Methods (2019) **16** (8), 1850118.

73. W.M. Abd-Elhameed, Sixth-kind chebyshev spectral approach for solving fractional differential equations, International Journal of Nonlinear Sciences and Numerical Simulation (2019) **20** (2), 191-203.

74. W.M. Abd-Elhameed and Y.H. Youssri, Spectral Tau Algorithm for Certain Coupled System of Fractional Differential Equations via Generalized Fibonacci Polynomial Sequence, Iranian Journal of Science and Technology, Transactions A: Science, (2019) **43** (2), 543-554.

75. W.M. Abd-Elhameed and Y.H. Youssri, Explicit Shifted Second-kind Chebyshev Spectral Treatment for Fractional Riccati Differential Equation, Computer Modeling in Engineering & Sciences CMES (2019)**121** (3), 1029-1049.

76. W.M. Abd-Elhameed and Y.H. Youssri, Connection Formulae Between Generalized Lucas Polynomials and Some Jacobi Polynomials: Application to Certain Types of Fourth-Order BVPs, International Journal of Applied and Computational Mathematics (2020) **Article number 45**.

77. W.M. Abd-Elhameed and Anna Napoli, A Unified Approach for Solving Linear and Nonlinear Odd-Order Two-Point Boundary Value Problems, Bulletin of the Malaysian Mathematical Sciences Society (2020) **43**, 2835-2849.

78. Y.H. Youssri and W.M. Abd-Elhameed, Legendre-Spectral Algorithms for Solving Some Fractional Differential Equations (2020), Book Chapter (Chapter 8), Wiely, 195-224.

79. W.M. Abd-Elhameed and Afnan Ali, New specific and general linearization formulas of some classes of jacobi polynomials, Mathematics (2021), **9**(1)

80. W.M. Abd-Elhameed and Y.H. Youssri, Neoteric formulas of the monic orthogonal Chebyshev polynomials of the sixth-kind involving moments and linearization formulas, Advances in Difference Equations (2021), Article ID: 84

81. W.M. Abd-Elhameed and A.M. Alkenedri, Spectral solutions of linear and nonlinear BVPS using certain jacobi polynomials generalizing third- and fourth-kinds of Chebyshev polynomials, CMES: Computer Modeling in Engineering and Sciences (2021),(2021), DOI: 10.32604/cmes.2021.013603
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## Book Chapter

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