CURRICULUM VITAE

of

PROF. FATHALLA A. RIHAN

Contents

1 Personal Data:

Fathalla A. Rihan	:	B.Sc., M.Sc, Ph.D. (Manchester University, UK)
Marital status	:	Married, 3 Childen
Place of birth	:	Egypt
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2 Current Positions:

- **Professor of Mathematics**, College of Science, UAE University, Al-Ain, UAE;
- **Professor of Mathematics** (On Leave), Faculty of Science, Helwan University, Cairo, Egypt.

3 Employment History:

1. 2017–: Professor of Mathematics at Department of Mathematical Sciences, College of Science, UAE University, UAE.
2. 2012–1017: Associate Professor at Department of Mathematical Sciences, College of Science, UAE University, UAE.
3. 2008-2012: Assistant Professor at Department of Mathematical Sciences, College of Science, UAE University, UAE.
4. 2011-till present: **Professor of Mathematics** at the Department of Mathematics (on leave), Faculty of Science, Helwan University, Egypt.
5. 2005–2011: **Associate Professor** of Mathematics at the Department of Mathematics, Faculty of Science, Helwan University, Egypt.
6. 2000- 2010: **Honorary Research Fellow** in the School of Mathematics, Manchester University, UK.
7. 2000-2005: **Assistant Professor** at the Department of Mathematics, Faculty of Science, Helwan University, Egypt. (On leave to UK on Post Doctorate).

8. January 2003- February 2006: **Senior Research Fellow** at Salford University, joining with Met Office (Reading University), UK, working in **"Data Assimilation and Numerical Weather Prediction"**.

9. 2001-January 2003: **Research Fellow** at the School of Mathematics, Manchester University, UK, joining the team group of Prof C.T.H. Baker, working in **"Computational Modelling with Functional Differential Equations in Biomathematics"**.

10. 1996–2000: **Postgraduate studentship and lecturer assistant** at the Department of Mathematics, Manchester University, UK.

11. 1992–1996: **Lecturer** at the Department of Mathematics, at the same university. (On leave to undertake PhD studies in Manchester.)

12. 1987-1992: **Instructor** at the Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt, (part-time postgraduate studies during this period).

Visitorships:

13. Research Visitor at the Department of Mathematics, Manchester University, UK, 2000-2001, working with the team group of Prof C.T.H. Baker, working in *"Mathematical Modelling and Parameter Estimation with Delay Differential Equations in Biomathematics"*.

14. Research Visitor at College Lane, University of Hertfordshire, Oct. 01–Dec. 01. (To look at differential models, that involve time-delays or/and hysteresis, associated with oscillatory phenomena.)

15. Research Visitor to NCAR, Colorado, and Oklahoma Weather Center, USA, Dec. 2003–Jan 2004.

4 Education:

1. 2000, Ph.D. in Mathematics (Manchester University, UK), supervised by Prof C. T. H. Baker. Thesis entitled *"Numerical Treatment of Delay Differential Equations in the Biosciences"*.

2. 1993, Qualification Exam for Ph.D. (One year courses in computational applied mathematics, Helwan University).

3. 1989–1992, M.Sc. as research in Numerical Analysis, supervised by *Professor Eid H. Doha*. Thesis entitled *"Spectral and pseudo-spectral method for solving partial differential equations using orthogonal polynomials"*.

4. 1987-1988, Pre-Master – courses in pure and numerical analysis (Helwan University).

5. 1986–1988, Military Service.

6. 1981–1985, B.Sc. Hon. in Mathematics, Alexandria University, with grade of "Excellent With Honour" (comprising grades of Excellent, Excellent, Excellent, Very good).

5 Research Interests:

I am involved and leading two research groups:

(i) **Numerical Analysis & Numerical Mathematical Biology**, including:

1. Mathematical modelling of phenomena with *time-lags* or *after-effects*, such as cell division, population dynamics, infectious diseases, and tumour-immune interactions, etc.
2. Numerical treatments of Ordinary, Partial and Delay Differential Equations (DDEs), and Fractional Order Differential Equations.
3. Parameter estimations (inverse problems) and sensitivity analysis for ODEs and DDEs. systems.

(ii) **Data Assimilation and Numerical Weather Prediction (NWP)**, including:

1. Data assimilation using three-dimensional/four-dimensional variational analysis (3D-Var/4D-Var) system.
2. Impact of assimilation of Doppler radial velocities in the analysis and on the forecasts.

5.1 General Classification:

Ordinary; Functional differential equations (34-XX); Biology and other natural sciences (92-XX); Numerical analysis (65-XX); Integral equations (45-XX) Systems theory; control (93-XX)

6 Research Project Contributions:

1. 2017–2019, **PI**, of SQU/UAEU Project, "Delay Differential Models of Immune Response With Viral and Bacterial Infection in an Organism".
2. 2015–2017, **PI** of UPAR Grant Project: **Mathematical Models for Kinetics of Coronavirus Infection in Humans**, UAE.
3. 2014–2016, **PI** of **Mathematical Modeling Of Cancer Immune Interactions With Treatments: Immunotherapy, Chemotherapy And Bio-Chemotherapy**, Center-based interdisciplinary Grant with Zayed Bin Sultan Center for Health Sciences, College of Medicine and Health Sciences, UAEU.
4. 2011-2016, **PI** of **National Research Foundation Project** (NRF), entitled "**Delay Differential Models in Immunology and Infection Diseases in an Individual**". The amount of fund is 1m AED.
5. 2014-2016, **PI A Basis for Improving Numerical Forecasting in the Gulf Area by Assimilating Doppler Radar Radial Winds**.
6. 2010-2012, **PI** of **Emirates Foundations Project**, entitled "**Mathematical Modeling of Infectious Diseases: Dynamics and Control of Swine Influenza**", UAE University. The amount of fund is 200K AED (100K from EF and 100K from UAEU).
7. 2011-2012, **PI** of Individual Project "**A Fractional Order SIR Model in Epidemiology of Infectious Diseases**", UAE University. The amount of fund is 18K AED.

8. 2011-2012, **Co-PI** Individual Project "Stability and Bifurcation of Ecological Systems".

9. 2009-2010, **PI** of the project (01-01-2-11/09) "Sensitivity and robustness of delay differential models with cell growth dynamics", United Arab Emirates University, Al Ain, UAE. The amount of fund was 16K AED.

10. 2006–2008, **PI** of the project of "Quality Assurance and Accreditation" in Faculty of Science, Helwan University, Egypt. This project was funded by National Quality Assurance and Accreditation Committee. The amount of fund was 250K Eg. Pounds.

11. 2006-2007, **Co-PI** in the EXPRESS project "Stimulation of Quality Assurance and Accreditation in Egyptian Universities", Financed by TEMPUS.

12. 2003-2006, **PI**, leading the project "Assimilation of Doppler radar winds from the Chilbolton research radar", Direct collaboration between Salford and Met Office in Reading University, UK. The fund was 300K Sterling Pounds.

13. 2001-2003, **Co-PI** of the project "Mathematical Modelling and Parameter Estimation with Delay Differential Equations in Biomathematics", Manchester University, UK. The fund was 200K Sterling Pounds.

7 Research Output Arising After Ph.D.:

7.1 Refereed journal papers

1. F. A. Rihan, S. Lakshmanan, H. Maurer, Optimal Control of Tumour-Immune Model with Time-Delay and Immuno-Chemotherapy, Applied Mathematics and Computation, In Press 2019, pp 1–28.

2. F. A. Rihan, Q. Al-Mdallal, H. J. AlSakaji, Adel Hashish, A Fractional-Order Epidemic Model With Time-Delay and Nonlinear Incidence Rate, Chaos: An Interdisciplinary Journal of Nonlinear Science, In Press 2019, pp 1–15.

3. N. H. Sweilam, F. A. Rihan and S. AL-Mekhlai, Delay Differential Model with Optimal Control for a Cancer Treatment Based on Synergy Between Anti-angiogenic and Immune Cell Therapies, Discrete & Continuous Dynamical Systems - S, Accepted in 1-January 2019.

4. F. A. Rihan, C. Tunc, S. H. Saker, S. Lakshmanan, and R. Rakkiyappan, Applications of Delay Differential Equations in Biological Systems, Complexity (Editorial) 2018, 1–3. (Impact Factor (IF) is " 4.621"; One of the 10% top journals.)

5. B. Mansur, F.A. Rihan, A Discrete Mathematical Model for Heat Transfer Process in Rotating Regenerative Air Preheater. Springer Proceeding of "Differential Equations and Dynamical Systems", edt. Azamov, et al., Vol 268 Springer, (2018), 55–61.

6. C. Rajivganthi, F. A. Rihan, S. Lakshmanan, Stabilization of Delayed Cohen-Grossberg BAM Neural Networks, Mathematical Methods in the Applied Sciences (Math Meth Appl Sci) 41(2) (2018) 493–605 Impact Factor is "1.017".)

7. C. Rajivganthi, F. A. Rihan, Stability of fractional-order preypredator system with time-delay and Monod-Haldane functional response, Nonlinear Dynamics (2018), 1–12. (Impact Factor: "3.464")

8. V. Preethi Latha, Fathalla A. Rihan, R. Rakkiyappan, G. Velmurugan, A fractional-order model for Ebola virus infection with delayed immune response on heterogeneous complex networks, Journal of Computational and Applied Mathematics, **339** (2018) 134–146. (Impact Factor (IF) is " 1.413".)

9. C. Rajivganthi, F. A. Rihan, S. Lakshmanan, P. Muthukumar, Finite-Time Stability Analysis for Fractional-Order Cohen–Grossberg BAM Neural Networks with Time-Delays, Neural Computing and Applications, **29**(12) 2018 1309–1320. (Impact Factor (IF) is "2.505".)

10. Heba Alsakaji, and Fathalla A. Rihan, and Chinnathambi, Rajivganthi, Dynamics of a Three Species Predator-Prey Delay Differential Model with Allee Effect and Holling Type-II Functional Response (July 1, 2018). Springer Proceeding, (SSRN: https://ssrn.com/abstract=3273687)

11. F. A. Rihan, N. S. Al-Salti, and M. N. Anwar, Dynamics of coronavirus infection in human, Mathematical Methods and Computational Techniques in Science and Engineering AIP Proceedings 1982, 020009 (2018); (https://doi.org/10.1063/1.5045415.)

12. C. Rajivganthi, F. A. Rihan, H. J. Al-Sakaji, A Fractional-Order Predator-Prey Model With Beddington-DeAngelis Functional Response and Time-delay, The Journal of Analysis, 2018, 1–14. (https://doi.org/10.1007/s41478-018-0092-7.)

13. F. A. Rihan, A. A. Azamov and H. J. Al-Sakaji, An Inverse Problem For Delay Differential Equations: Parameter Estimation, Nonlinearity, Sensitivity, Applied Mathematics & Information Sciences, **12** (1) (2018), 63–74. Impact Factor in 2013 is "1.2".)

14. F.A. Rihan, M. Sheek-Hussein, A. Tridane, R. Yafia, Dynamics of Hepatitis C Virus Infection: Mathematical Modeling and Parameter Estimation, Mathematical Modelling of Natural Phenomena, 12 (5) (2017) 33–47. (Impact Factor (IF) is "0.952".)

15. V. Preethi Latha, F. A. Rihan, R. Rakkiyappan, G. Velmurugan, A Fractional-Order Delay Model for Ebola Infection and $CD8^+$ T-cells Response: Stability analysis and Hopf bifurcation, International Journal of Biomathematics, **10**(8) (2017), 1750111. (Impact Factor (IF) is "1.05".)

16. F.A. Rihan, Dynamics of Salmonella Infection, Book Chapter in "Current Topics in Salmonella and Salmonellosis" (Editor: Mihai Mares) ISBN: 978-953-51-3065-9, Publisher: InTech, 2017, 151–167.

17. C. Rajivganthi, F. A. Rihan, S. Lakshmanan, Dissipativity analysis of complex-valued BAM neural networks with time-delay, Neural Computing and Applications, In Press, March 10, 2017. (Impact Factor (IF) is "2.505".)

18. F. A. Rihan, C. Rajivganthi, M Palanisamy, Fractional Stochastic Differential Equations with Hilfer fractional Derivative: Poisson jumps and optimal control, Discrete Dyn. Nat. Soc., Article ID 5394528, 11 p. (2017). (Impact Factor (IF) is "0.711".)

19. Fathalla A. Rihan, Nasser S. Al-Salti, Mono-Implicit Runge Kutta Schemes for Singularly Perturbed Delay Differential Equations, AIP Conference Proceedings 1872, 020001 (2017); doi: http://dx.doi.org/10.1063/1.4996658.

20. C. Rajivganthi, F. A. Rihan, S. Lakshmanan, R. Rakkiyappan, P. Muthukumar, Synchronization of Memristor-Based Delayed BAM Neural Networks with Fractional-Order Derivatives, Complexity, **21** (S2) (2016), 412–426. (Impact Factor (IF) is " 4.621"; One of the 10% top journals.)

21. Fathalla A. Rihan, Nouran F. Rihan, Dynamics of Cancer-Immune System with External Treatment and Optimal Control, Journal of Cancer Science & Therapy, **8**(10), (2016), 257-261. (Impact Factor (IF) is "Cited".)

22. C. Rajivganthi, P. Muthukumar, N. Durga, F. A. Rihan, Optimal Control of Second Order Stochastic Evolution Hemivariational Inequalities with Poisson Jumps, Taiwanese Journal of Mathematics, In Press, 15 February, (2017) 1–22. (Impact Factor (IF) is "Cited".)

23. F. Ibrahim, K. Hattaf, F.A. Rihan, S. Turek, Numerical Method Based On Extended One-Step Schemes For Optimal Control Problem With Time-Lags, International Journal of Dynamics and Control, 5 (4) (2017) 1172–1181. (Impact Factor (IF) is "Indexed".)

24. F.A. Rihan, A. Hashish, F. Al-Maskari, M. Sheek-Hussein, E. Ahmed, M. B. Riaz, R. Yafia, Dynamics of Tumor-Immune System With Fractional-Order, Journal of Tumor Research **2**(1) (2016),109. (Impact Factor (IF) is "Cited".)

25. Fathalla A. Rihan, Parameter Estimation and Sensitivity Analysis of Biological systems with Memory, Proceeding of Bioinformatics and Computational Biology, Proceeding of BICoB (2016), 97–102. ISBN: 978-1-5108-2251-1.

26. F. Ibrahim, F.A. Rihan, and S. Turek, Stability Analysis of Extended One-Step Schemes for Stiff and Non-Stiff Delay Differential Equations, Applied Mathematics & Information Sciences, **10** (5) (2016), 1705-1717. (2013 Impact Factor is "1.2".)

27. R. Rakkiyappan, G. Velmurugan, Fathalla A. Rihan, S. Lakshmanan, Stability analysis of Memristor-based Complex-valued Recurrent Neural Networks with Time delays, Complexity, **21** (4) (2016), pp. 14–39. (Impact Factor (IF) is " 4.621"; One of the 10% top journals.)

28. M. Syed Ali, P. Balasubramaniam, Fathalla A. Rihan, S. Lakshmanan, Stability Criteria for Stochastic Takagi-Sugeno Fuzzy Cohen-Grossberg BAM Neural Networks with Mixed Time-Varying Delays, Complexity, **21** (5), (2016), 143–154. (Impact Factor (IF) is " 4.621"; One of the 10% top journals.)

29. F.A. Rihan, S. Lakshmanan, A.H. Hashish, R. Rakkiyappan, E. Ahmed, Fractional Order Delayed Predator-Prey Systems with Holling Type-II Functional Response, Nonlinear Dynamics, **80**(1) (2015), 777-789. (Impact Factor (IF) is "3.464"; One of the 10% top journals.)

30. R. Rakkiyappan, B. Kaviarasan, Fathalla A. Rihan, S. Lakshmanan, Synchronization of Singular Markovian Jumping Complex Networks with Additive Time-varying Delays via Pinning Control, Journal of the Franklin Institute, 352 (2015) 3178–3195. (Impact Factor (IF) is "3.139"; One of the 10% top journals.)

31. C. Rajivganthi, P. Muthukumar, Fathalla A. Rihan, Existence and approximate controllability of stochastic semilinear reaction diffusion systems, International Journal of Dynamics and Control, Online, 2015, 1–8. (Impact Factor (IF) is "Cited".)

32. Fathalla A. Rihan, Bassel F. Rihan, Numerical Modelling of Biological Systems with Memory using Delay Differential Equations, Applied Mathematics & Information Sciences, **9**(3) (2015), 1615–1658. (2013 Impact Factor is "1.2".)

33. F. A. Rihan, D.H. Abdelrahman, F. Al-Maskari, F. Ibrahim, M.A. Abdeen, Delay Differential Model for Tumour-Immune Response with Chemo–Immunotherapy and Optimal Control, *Computational and Mathematical Methods in Medicine*, Volume 2014 (2014), Article ID 982978, 15 pages. (Impact Factor (IF) is "0.937".)

34. P. Balasubramaniam, M. Prakash, Fathalla A. Rihan, S. Lakshmanan, Hopf Bifurcation and Stability of Periodic Solutions for Delay Differential Model of HIV Infection of $CD4^+$ T-cells, *Abstract and Applied Analysis*, Volume 2014 (2014), Article ID 838396, 18 pages. (2013 Impact Factor is "1.274".)

35. S Lakshmanan, Ju H Park, Fathalla A Rihan, R Rakkiyappan, Impulsive effect on exponential synchronization of neural networks with leakage delay under sampled-data feedback control, *Chin. Phys. B*, **23** (7) (2014) 1–12. (Impact Factor (IF) "Cited".)

36. S. Lakshmanan, F.A. Rihan, R. Rakkiyappan, Ju H. Park, Stability Analysis of Differential Genetic Regulatory Networks Model with Time-Varying Delays and Markovian Jumping Parameters, Nonlinear Analysis: Hybrid Systems, **14** (November) (2014) 1–15. (Impact Factor (IF) is "3.963"; One of the 10% top journals.)

37. F.A. Rihan, D. Baleanu, S. Lakshmanan, R. Rakkiyappan, On Fractional SIRC Model with Salmonella Bacterial Infection, *Abstract and Applied Analysis*, 2014, 9 pages. ((2013 Impact Factor is "1.274".)

38. R. Rakkiyappan, A. Chandrasekar, F. A. Rihan, S. Lakshmanan, Corrigendum to "Exponential state estimation of Markovian jumping genetic regulatory networks with mode-dependent probabilistic time-varying delays" [Math. Biosci., 251 (2014) 30-53], Math. Biosci., 255 (2014) 91. (Impact Factor (IF) is "1.560".)

39. R. Yafia, M. A. Aziz-Alaoui ,b, A. Tridane ,c, and F.A. Rihan, Qualitative properties and hopf bifurcation in haematopoietic disease model with chemotherapy, MATEC Web of Conferences, **16**, 2014.

40. R. Rakkiyappan, A. Chandrasekar, F. A. Rihan, S. Lakshmanan, Exponential State Estimation of Markovian Jumping Genetic Regulatory Networks With Mode-Dependent Probabilistic Time-Varying Delays, *Mathematical Biosciences*, **251** (2014) 30–53. (Impact Factor (IF) is "1.560".)

41. F.A. Rihan, D.H. Abdelrahman, S. Lakshmanan, A Time Delay Model of Tumour- Immune System Interactions: Global dynamics, Parameter estimation, Sensitivity analysis, Applied Mathematics and Computation, **232** (2014) pp. 606-623. (Impact Factor (IF) is "1.738".)

42. M. Safan, F.A. Rihan, Mathematical Analysis of an SIS Model With Imperfect Vaccination and Backward Bifurcation, *Mathematics and Computers in Simulation*, **96** (February), (2014) 195-206. (Impact Factor (IF) is "1.308".)

43. S. Lakshmanan, K. Mathiyalagan, Ju H. Park, R. Sakthivel, Fathalla A. Rihan, Delay-Dependent $\mathcal{H}_\infty$ State Estimation of Neural Networks With Mixed Time-Varying Delays,

Neurocomputing, **129** (10) (2014) 392–400. (Impact Factor (IF) is "3.317"; One of the 10% top journals.)

44. A. Chandrasekar, R. Rakkiyappan, Fathalla A. Rihan, S. Lakshmanan, Exponential synchronization of Markovian jumping neural networks with partly unknown transition probabilities via stochastic sampled-data control, Neurocomputing, **133** (10) (20014) 385–398. (Impact Factor (IF) is "3.317"; One of the 10% top journals.)

45. F.A. Rihan, Numerical Modeling of Fractional-Order Biological Systems, *Abstract and Applied Analysis*, Volume 2013 (2013), Article ID 816803, 11 pages. (2013 Impact Factor is "1.274".)

46. F.A. Rihan, Delay Differential Equations in Biosciences: Parameter estimation and sensitivity analysis, Recent Advances in Applied Mathematics and Computational Methods: Proceedings of the 2013 International Conference on Applied Mathematics and Computational Methods (Venice, Italy September 2013), (2013), 50–58.

47. F.A. Rihan & D.H. Abdelrahman, Delay Differential Model for Tumor-Immune Dynamics with HIV Infection of CD4+ T-cells, *International Journal of Computer Mathematics*, **90**(3) (2013) 594–614. (Impact Factor (IF) is "0.710".)

48. R. Rakkiyappana, C. Pradeep, A. Vinodkumar, Fathalla A. Rihan, Dynamic analysis for high-order Hopfield neural networks with leakage delay and impulsive effects, *Neural Computing and Applications*, **22** (1) (2013), 55-73. (Impact Factor (IF) is "2.505".)

49. F.A. Rihan & M-. Naim Anwar, Qualitative Analysis of Delayed SIR Epidemic Model With a Saturated Incidence Rate, *International Journal of Differential Equations*, Vol. 2012 (2012), 13 pages. (Impact Factor (IF) "Cited".)

50. F. A. Rihan, M-. Naim Anwar, M. Sheek-Hussein, S. Denic, SIR Model of Swine Influenza Epidemic in Abu Dhabi: Estimation of Vaccination Requirement, *Journal of Public Health Frontier (PHF)*, Vol 1 (4) (2012) 85-89.

51. E. Ahmed, A. Hashish, F.A. Rihan, On Fractional Order Cancer Model, Journal of Fractional Calculus and Applications, **3** (2) (2012) 1–6. (Impact Factor (IF) "Cited".)

52. F.A. Rihan, M. Safan, M.A Abdeen, D.H. Abdel-Rahman, Qualitative and Computational Analysis of a Mathematical Model for Tumor-Immune Interactions, Applied Mathematics in Biomedical Sciences and Engineering, J. Appl. Math., Volume 2012 (2012), art. ID 475720, pp 19. (Impact Factor (IF) is "Cited".)

53. F.A. Rihan, M. Safan, M.A Abdeen, D.H. Abdel-Rahman, Mathematical modeling of tumor cell growth and immune system interactions, International Journal of Modern Physics: Conference Series, **9** (2012) 95–111. (Impact Factor (IF) "Cited".)

54. F.A. Rihan & D.H. Abdel Rahman, Sensitivity of best-fit parameters in neutral differential equations with cell growth dynamics, *Int. J. Math. Comput.*, **10** (M11) 2011, pp 65–78. (Impact Factor (IF) "Cited".)

55. F.A. Rihan, Computational methods for delay parabolic and time fractional partial differential equations, *Numerical Methods for Partial Differential Equations*, **26** (6) (2010) 1556–1571. (Impact Factor (IF) is " 1.079".)

56. F.A. Rihan, Adjoint sensitivity analysis of neutral delay differential models, *Journal of Numerical Analysis, Industrial and Applied Mathematics*, **5** N0. 1-2, (2010) 95–101. (Impact Factor (IF) "cited".)

57. F.A. Rihan, Delay Differential Models in Dynamic Diseases, The Proceedings of the International Conference on Bioinformatics and Computational Biology BICoB 2010: Hawaii, USA, March 24-26 (2010), pp 73–79.

58. F. A. Rihan, Chris Collier, A Basis for Improving Numerical Forecasting in the Gulf Area by Assimilating Doppler Radar Radial Winds, *International Journal of Geosciences*, Vol 1 (2) (2010), pp 70–78. (Impact Factor (IF) is "Cited".)

59. F.A. Rihan, E.H. Doha, M.I. Hassan and N.M. Kamel, Numerical Treatments for Volterra Delay Integro-Differential Equations, *Computational Methods in Applied Mathematics (CMAM)*, **9**(3) (2009) 292–308. (Impact Factor (IF) "cited".)

60. C.T.H Baker, G. Bocharov, E. Parmuzin, F.A. Rihan, Some aspects of causal & neutral equations used in modelling, *Journal of Computational and Applied Mathematics* **229** (2009) 335–349. (Impact Factor (IF) is "1.413".)

61. F.A. Rihan, E.H. Doha, M.I. Hassan and N.M. Kamel, Mono-implicit Runge-Kutta method for delay differential equations, *J. Egypt. Math. Soc.*, **17**(2) (2009) 213–232. (Impact Factor (IF) "Cited".)

62. C.T.H Baker, G. Bocharov, F.A. Rihan, Neutral Delay Differential Equations in the Modelling Of Cell Growth, *J. Egypt. Math. Soc.*, Vol. **16**(2) (2008) 133–160. (Impact Factor (IF) "Cited".)

63. F. A. Rihan, Stability Conditions for Singularly Perturbed Delay differential Equations, *Computational Mathematics and Modeling* (Springer), **19**(3) (2008) 292-303. (Impact Factor (IF) "Cited".)

64. F.A. Rihan, C.G. Collier, S.P. Ballard, S. Swarbrick, Assimilation of Doppler radial winds into a 3D-Var system: Errors and impact of radial velocities on the variational analysis and model forecasts, *Quarterly Journal of the Royal Meteorological Society*, **134**(636) (2008) 1701–1716. (Impact Factor (IF) is "3.410"; One of the 10% top journals.)

65. F.A. Rihan, Sensitivity analysis of cell growth dynamics with time-lags, *J. Egypt. Math. Soci.*, **14**(1) (2006) 91–107. (Impact Factor (IF) "Cited".)

66. C.T.H Baker, E. Agyingi, E. Parmuzin, F.A. Rihan & S. Yihong, Sense from Sensitivity and Variation of Parameters, *Applied Numerical Mathematics* 56 (2006) 397-412. (Impact Factor (IF) is "1.250".)

67. C.T.H. Baker, G.A. Bocharov, A. Filiz, N.J. Ford, C.A. Paul, F.A. Rihan, A. Tang, R.M. Thomas, H. Tian & D.R. Willé, Numerical Modelling by delay and Volterra functional differential equations, in *Computer Mathematics and its Applications*, E A Lipitakis, ed., (LEA Publishers, Athens, 2006) pp 233-256.

68. F.A. Rihan, C.G. Collier & I. Roulstone, Four-dimensional variational data assimilation for Doppler radar wind data, *Journal of Computational and Applied Mathematics*, **176**(1) (2005) 15–34. (Impact Factor (IF) is "1.430".)

69. C.T.H. Baker, G.A. Bocharov, C.A. Paul & F.A. Rihan, Computational modelling with functional differential equations: Identification, selection. *Applied Numerical Mathematics*, **53** (2005) pp 107–129. (Impact Factor (IF) is "1.250"; One of the 10% top journals.)

70. F.A. Rihan, Sensitivity analysis of dynamic systems with time lags, *Journal of Computational and Applied Mathematics* **151** (2) (2003) 445–462. (Impact Factor (IF) is "1.413".)

71. F.A. Rihan, C.G. Collier, S.P. Ballard, & S.J. Swarbrick, On the assimilation of Doppler radial winds into a high resolution NWP model, *ERAD* (European Radar)(2004) 487–493.

72. F.A. Rihan, C.G. Collier, S.P. Ballard, Impact of Assimilation of Doppler Radial Velocity on a Variational System and on its Forecasts, *Proceedings of American Meteorological Society (AMS)*, October (2005) 24-29.

73. G.A. Bocharov & F.A. Rihan, Numerical modelling in biosciences using delay differential equations, *Journal of Computational and Applied Mathematics* **125** (2000) 183–199. (Impact Factor (IF) is " 1.413".)

74. C.T.H. Baker, G.A. Bocharov, C.A. Paul & F.A. Rihan, Modelling and analysis of time lags in cell proliferation, *Journal of Mathematical Biology*, **37**(4) (1998) 341–371. (Impact Factor (IF) is "1.566"; One of the 10% top journals.)

7.2 Technical reports (Local publications)

75. F. Ibrahim, F.A. Rihan, and S. Turek, *Extended One–Step Schemes for Stiff and Non–Stiff Delay Differential Equations*, TR, March 2015. Ergebnisberichte des Instituts für Angewandte Mathematik, Nummer 511, Fakultät für Mathematik, TU Dortmund:
http://www.mathematik.tu-dortmund.de/lsiii/cms/papers/IbrahimRihanTurek2015.pdf

76. C.T.H. Baker, G.A. Bocharov & F.A. Rihan, Neutral Delay Differential Equations in the Modelling Of Cell Growth, *Report 2008:01*, Chester University, UK.
Available on www.chester.ac.uk/maths/documents/2008-01.pdf

77. C.T.H. Baker, G.A. Bocharov, E.I. Parmuzin & F.A. Rihan, On Some Aspects Of Causal & Neutral Equations Used In Mathematical Modelling, *Report 2007:2*, Chester University, UK. Available on www.chester.ac.uk/maths/documents/2007-2.pdf

78. C.T.H. Baker, G.A. Bocharov & F.A. Rihan, A report on computational modelling with functional differential equations: Identification, Selection, *MCCM Tech. Rep.*, **425** ISSN 1360-1725, University of Manchester (2003).
(Available at http://www.ma.man.ac.uk/MCCM).

79. Fathalla A. Rihan and Chris G. Collier, Four-dimensional data assimilation and numerical weather prediction, *TIES Tech. Rep.*, **1**, University of Salford (2003). (Available at http://www.ties.salford.ac.uk/people/frihan).

80. C.T.H. Baker, G.A.Bocharov & F.A. Rihan, A report on the use of delay differential equations in numerical modelling in bioscience, *MCCM Tech. Rep.*, **343** ISSN 1360-1725, University of Manchester (1999). (Available at http://www.ma.man.ac.uk/MCCM).

81. C.T.H. Baker & F.A. Rihan, Sensitivity analysis of parameters in modelling with delay-differential equations, *MCCM Tech. Rep.,* **349** ISSN 1360-1725, University of Manchester (1999) (Available at http://www.ma.man.ac.uk).

82. C.T.H. Baker, G.A.Bocharov, C. A. Paul, & F.A. Rihan, Modelling and analysis of time-lags in cell proliferation, *MCCM Tech. Rep.*, **313** ISSN 1360-1725, University of Manchester (1997). from the WWW at http://www.ma.man.ac.uk/MCCM).

7.3 Refereed Conference Papers & Presentations:

1. Qualitative and Quantitative Features of Fractional-Order of Differential Equations and Their Applications, UAEU Annual Research & Innovation Conference 2019, College of Science, UAEU, 1–2 February 2019.

2. Qualitative and Quantitative Features of Delay Differential Equations of Biological Systems with Memory, MATHEMATICAL MODELING IN SCIENCE AND ENGINEERING (ICMMSE 2019), BHARATHIAR UNIVERSITY, COIMBATORE, India, 1–2 February 2019.

3. Inverse Problem of Delay Differential Equations, The 7th Abu Dhabi University Annual International Conference: Mathematical, Physical Sciences & Engineering Applications November 30 - December 02, 2018, Abu Dhabi University, UAE (Keynote Speaker).

4. Qualitative and Quantitative Features of Delay Differential Equations in Biosciences, Workshop on "Delay Differential Equations: Theory, Applications nd New Trends", UAE University, Al Ain, UAE, 3–4 Oct. 2018.

5. Parameter Identification for Delay Differential Equations, Conference on the Numerical Solution of Differential and Differential-Algebraic Equations (NUMDIFF-15), 3–7 September 2018, Martin Luther University Halle-Wittenberg (Germany).

6. Dynamics of Three Species Predator-Prey Delay Differential Model with Allee Effect and Holling Type-II Functional Response, ICFDA'18 International Conference on Fractional Differentiation and its Applications will be held in July 16-18, Amman, Jordan.

7. Dynamics of Hepatitis C Virus Infection, 10th International Conference on Bioinformatics and Computational Biology (BICoB-2018), March 18 21, 2018. Las Vegas, Nevada, USA.

8. Dynamics of Coronavirus Infection in Human, International Conference on Mathematical Methods & Computational Techniques in Science, Engineering, International Conference on Mathematical Methods & Computational Techniques in Science, Engineering (MMCTSE-2018), Cambridge University, UK, February 16–18, 2018.

9. An Inverse Problem For Delay Differential Equations, SciCADE, the International Conference on Scientific Computation and Differential Equations, hosted by the University of Bath, UK, September 11-15, 2017.

10. Mono-Implicit Runge Kutta Schemes for Stiff Singularly Perturbed Delay Differential Equations, International Conference on Mathematical Methods & Computational Techniques in Science & Engineering (MMCTSE-2017), February 24-26, 2017, University of Cambridge, UK, February 24-26, 2017.

11. Delay Differential Equations for Biological Systems with Memory, 3rd International Conference, on Pure and Applied Sciences, Feb. 02-06, 2017, Dubai.

12. An Inverse Problem for Delay Differential Equations: Parameter Estimation and Sensitivity Analysis, The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Jul 15, 2016, Orlando, FL, USA.

13. Delay Differential Equations with Dynamical Systems: Tumour-Immune System with Chemo-Immunotherapy and Optimal Control, Jul 15 2016, The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, USA.

14. A Basis for Improving Numerical Weather Prediction in the Gulf Area by Assimilating Doppler Radar Radial Winds, The fifth International Symposium on Data Assimilation (ISDA) is set to take place on the 18th-22nd July, 2016, at the University of Reading in the UK.

15. Parameter Estimation and Sensitivity Analysis of Biological systems with Memory, 8th International Conference on Bioinformatics and Computational Biology (BICoB-2016), April 4 6, 2016 Las Vegas, Nevada, USA.

16. A Fractional-Order Differential Model for Dynamics of Hepatitis C Virus Infection, ICM 2016 Conference, UAE University, Al Ain 21–24 April 2016.

17. Backward Bifurcation For SIR Epidemic Model With Corona-Virus, ICM 2016 Conference, UAE University, Al Ain, UAE 21–24 April 2016. Infection

18. Robust Stability Analysis of a Delayed Inertial Neural Network, ICM 2016 Conference, UAE University, Al Ain 21–24 April 2016.

19. Dynamics of tumor-immune system in presence of IL-2 and Chemotherapy, The 4th Abu Dhabi University Annual International Conference: Mathematical Science & its Applications December 23-26, 2015, Abu Dhabi University, UAE.

20. Delay Differential Equations in Biosciences: Parameter estimation, sensitivity analysis and optimal control, International Conference on Scientific Computation And Differential Equations SciCADE, Germany, September 14-18, 2015.

21. Optimal Control Approach in a Delayed Mathematical Tumour Model with Immuno-Chemotherapy, UAEU Annual Research and Innovation Conference (Al Ain, UAE), 24–25 Nov., 2015.

22. Improving Numerical Forecasting in the Gulf Area by Assimilating Doppler Radar Radial Winds, UAEU Annual Research and Innovation Conference (Al Ain, UAE), 24–25 Nov., 2015.

23. F.A Rihan, Stabilized Numerical Schemes for Singularly Perturbed Delay Differential Equations, Numerical Solution of Differential and Differential-Algebraic Equations (NUMDIFF-14), Martin Luther University Halle-Wittenberg (Germany), 7–11, Sept. 2015.

24. F.A. Rihan, Dynamics of tumor-Immune system with chemoimmunotherapy, Optimal control and time-lags, The Second International Conference on Mathematics and Statistics (ICMS15), American University of Sharjah, April 2-5 2015.

25. Delay Differential Model of Tumour-Immune System with Chemo-Immunotherapy and Optimal Control, International Conference on Mathematics & Information Science (ICMIS 2015), Zewail City of Science and Technology,5-7 Feb. 2015.

26. Stiff Delay Differential Equations in Biosciences, The 3rd Abu Dhabi University Annual International Conference: Mathematical Science and It's Applications, December 27-30, 2014, The Emirates Centre for Strategic Studies and Research, Abu Dhabi (UAE).

27. Numerical Treatments of Stiff Delay Differential Equations in Biosciences, International Conference on Advances in Applied Mathematics and Mathematical Physics: 19-21 Aug. 2014, Yildiz Technical University of Istanbul, Turkey.

28. An efficient Technique for Stiff IVPs: Mono-implicit RK scheme, UAE Math Day 2014, American university in Dubai, 19th April 2014.

29. Delay Differential Equations with Biological Systems: Parameter estimation and Sensitivity Analysis, 3^{rd} International Conference on Mathematics and Information Sciences (ICMIS), 28-30 Dec. 2013, Luxor, Egypt.

30. Delay Differential Equations in Biosciences: Parameter estimation and Sensitivity Analysis, The Nineteenth International Conference on Difference Equations and Applications,Sultan Qaboos University, Muscat, Oman, May 26 - 30, 2013.

31. A Mathematical Model of Salmonella Bacterial Infection in UAE, The Nineteenth International Conference on Difference Equations and Applications,Sultan Qaboos University, Muscat, Oman, May 26 - 30, 2013.

32. Global Bifurcation Analysis of Tumour- Immune System Dynamics with Time Lag, The Nineteenth International Conference on Difference Equations and Applications,Sultan Qaboos University, Muscat, Oman, May 26 - 30, 2013.

33. SIR Model of Swine Infuenza Epidemic In Abu Dhabi: Estimation Of Vaccination Requirement, the 1st Arab World Conference on Public Health conference, from 04 to 06 April 2013, Jumeirah Creekside Hotel, Dubai, UAE.

34. Fractional order differential equations in biosciences, International Conference on Mathematics, Trends and Development ICMTD12, Cairo, Egypt, 27-29 Dec. 2012.

35. Scaling and Sensitivity Analysis of Delay Differential Model of Tumor-Immune System Dynamics, International Conference on Mathematics, Trends and Development ICMTD12, Cairo, Egypt, 27-29 Dec. 2012.

36. Delayed SIR Epidemic Models: Analytic and Numeric, 10th UAE Math Day, AUS, UAE, 14 April 2012.

37. Fractional Order Differential Equations in Biosciences, 4th Internatonal Conference in Mathematics ICM 2012, UAE University, Al Ain, UAE, 11–14 March 2012.

38. Stiff Delay Differential Equations in Biosciences, 4th International Workshop on Analysis and Numerical Approximation of Singular Problems (IWANASP 2011), Chester, UK, 7-9 September 2011.

39. An Efficient Numerical Technique for Stiff Delay Differential Models in Biosciences, 16th International Conference on Mathematica Modelling and Analysis (MMA2011), Sigulda, Latvia, May 25-28, 2011.

40. Delayed SIR Epidemic Model With Swine Influenza, 9^{th} UAE Math Day, UAE, April 2011.

41. Delay differential equations with infectious diseases, First International workshop on Differential and Integral Equations with Applications in Biology and Medicine (DIEBM 2010), Aegean University, Karlovassi, Samos island, Greece, September 7-10, 2010.

42. Sensitivity of Best-Fit Parameters in Delay Differential Models with Cell Growth Dynamics, International Conference-2010: The 6th Dynamical Systems and Applications, Antalya, Turkey July 10-14, 2010.

43. Delay Differential Models in Dynamic Diseases, 2^{nd} International Conference on Bioinformatics and Computational Biology (BICoB-2010), Honolulu, Hawaii, USA, March 24–26, 2010.

44. Numerical Treatments of DDEs in Dynamic Diseases, 8^{th} UAE Math Day, April 2010, Zayed University, UAE.

45. Assimilation of Doppler Radar Winds Into a High Resolution Atmospheric Model, International Conference on Renewable Energy: Generation and Applications (ICREGA'10), Al-Ain, UAE University (UAE), 7–10 March 2010.

46. Variational Methods for Sensitivity Analysis of Neutral Delay Differential Models, International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2009), Crete, Greece, 18-22 September 2009.

47. Delay Differential Equations in Immunology and Infection Diseases, 10^{th} Annual UAEU Research Conference, UAE, April 13-16, 2009.

48. Sensitivity and robustness of delay differential models in cell growth dynamics, One Day Conference in Cairo University 17 April 2008.

49. Delay Differential Equations in Biosciences, *ICMTD 2007 Conference*, Cairo, Dec. 27-30, 2007.

50. Mono-Implicit RK method for Delay Differential Equations *ICMTD 2007 Conference*, Cairo, Dec. 27-30, 2007.

51. Assimilation of Doppler radial winds into 3D-Var data assimilation systems *ICMTD 2007 Conference*, Cairo, Dec. 27-30, 2007.

52. Data Assimilation and Numerical Weather Prediction, *One Day Conference: Mathematical Methods*, (Minia University, Egypt) 20 March 2007.

53. Solutions Of Some Non-Anticipative Equations In Modelling, Second International Workshop on Analysis and Numerical Approximation of Singular Problems (Samos Greece), 6–8 Sept. 2006.

54. Numerical treatments for delay parabolic partial differential equations, *International Conference on Mathematical Analysis and Its Applications* ICMAA06, (Assuit, Egypt) 3–6 January 2006.

55. Impact of Assimilation of Doppler Radial Velocity on a Variational System and on its Forecasts, *32nd Conference on Radar Meteorology/11th Conference on Mesoscale Processes*, (Albuquerque, NM, USA) 24-29 October 2005.

56. Assimilation of radar data in the Met Office mesoscale and convective scale forecast systems, *32nd Conference on Radar Meteorology/11th Conference on Mesoscale Processes*, (Albuquerque, NM, USA) 24-29 October 2005.

57. On the impact of assimilating Doppler radar wind data into an operational numerical weather prediction model, 6th Int. Conference on Hydrological Uses of Radar, Melbourne, Australia, 2-4 February, 2004.

58. Errors in Doppler radial winds and their incorporation into 3D-Var data assimilation systems, *UWERN Annual Conference* (Salford University, Manchester, UK) 13–15 December 2004.

59. Assimilation of Doppler radial winds into a high resolution NWP model, *Workshop: High resolution data assimilation: towards 1-4km resolution*, (Met Office, Exeter, UK) 15–17 November 2004.

60. On the assimilation of Doppler radial winds into a high resolution NWP model, *Third European Conference on Radar in Meteorology and Hydrology (ERAD)* (Visby, Island of Gotland, Sweden), 6-10 September 2004.

61. Data assimilation and Numerical Weather Prediction, *New Frontiers in Computational Mathematics: Inverse Problem* (University of Manchester, UK), 10-11 Jan. 2004.

62. Four-dimensional data assimilation for forecast models, *Royal Meteorological Society (RMS) Conference 2003* (University of East Anglia, Norwich, UK), 1-5 September 2003.

63. Data assimilation and associated issues, *Workshop on mathematical techniques for improving forecasting of hazardous weather* (University of Reading, UK), 16–20 June 2003.

64. Computational solution of parabolic partial differential equations with time-lag, *Innovative Time Integrators for PDEs* (Amsterdam, The Netherlands), 25–27 November 2002.

65. Numerical stability regions for neutral/ delay differential equations, *LMS supported One Day Meeting in Delayed Differential Equation* (Liverpool, UK), 12th March 2000.

66. Numerical modelling with delay differential equations in cell growth: A talk in the Minisimposium at *ICIAM99, the Fourth International Congress on the Industrial and Applied Mathematics* (Edinburgh, UK), 5-9 July 1999.

67. Numerical treatment of parameter identification in delays differential equations: A talk in the Minisimposium at *FoCM'99, Foundation of Computational Mathematics* (Oxford, UK), 18-28 July, 1999.

68. Sensitivity analysis of models described by delay differential equations: A talk in the Minisimposium at *SciCADE99, International Conference on Scientific Computation And Differential Equations* (Queensland, Australia), 9-13 August, 1999.

7.4 Other Conferences Participated:

69. A Frontier in Modern Oceanography: Modeling, Observing and Assimilating Submesoscale Dynamics, Center For Prototype Climate Modeling New York University Abu Dhabi Institute, 2-4 APRIL, 2013.

70. The 27th Workshop of The Permanent Committee for Meteorology-League of Arab States, Abu Dhabi (UAE), 19–24 March, 2011.

71. One day forum on "Establishing Vibrant and Sustainable R&D Ecosystem-the Singapore Story", Sorbonne University in Abu Dhabi, UAE, 9th of January, 2011.

72. One day forum on "Modern Earth Watching for Global Climate Change and Weather Studies", National Center of Meteorology & Seismology, Abu Dhabi, UAE, 5th May 2010.

73. "Effective Methods for Assessing Mathematical Courses", A One Day Forum on Undergraduate Mathematics Education, United Arab Emirates University, October 22, 2009.

74. First International Conference in Quality Assurance and Accreditation, Cairo University, 15 April 2008.

75. Information Technology in Education, Helwan University, Dec. 2007.

76. *One day on dynamical systems*, at Alexandria University (Egypt), May 2005.

77. *Network Academy Conference* (CISCO programme), Media City, Cairo, Egypt, 14 November 2006.

78. *A workshop on the Design and Development of Multifunctional Mesoscale Observing Networks in Support of Integrated Forecasting Systems*, at the National Center for Atmospheric Research (NCAR) in Boulder, CO, USA, December 8-10, 2003.

79. *The BA festival of science* (University of Salford, Greater Manchester, UK) September 2003.

80. Meteorological Trianing Course in *Data Assimilation and Use of Satellite Data* (ECMWF, Reading, UK) April 2003.

81. *The annual meeting of the SIAM, UK and Republic of Ireland Section*, Leeds, Jan. 2002.

82. *MiMI, Mathematics in Medicine Initiative* (Warwick, UK), 18th 2000.

83. $BAMC_2k$*, British Applied Mathematics at the Millennium* (UMIST and Manchester, UK), 25-28 April 2000.

84. *Ninth IMA conference on the Mathematical Theory of Biological Systems*, (Oxford, UK) 8-10 July 1998.

7.5 Papers in preparation:

1. F.A. Rihan, *et al.* , Time-Delay Model For Tumour-Immune System With Immuno-Chemotherapy and Optimal Control.
2. F.A. Rihan, *et al.*, Numerical Method Based On Extended One-Step Schemes For Optimal Control Problem With Time-Lags.
3. F.A. Rihan, *eta al.*, Dynamics of Hepatitis C Virus Infection with Fractional-Order Differential Model.

8 Citation Overview:

- According to **Google Search Scholar**, the number of Citations is about **1375; h-index= 20 and i10-index=37** .
- According to the data base of **Scopus**, the number of Citations is about **750 with h-index=13**.
- According Research Gate, The **RG Score is 31.50 with 22 h-index**.

9 Supervision:

9.1 PhD and M.Sc. Students

1. Hebatallah J. Alsakji (PhD, Running from 2016), Department of Mathematical Sciences, College of Science, UAE University. Thesis entitled ”Inverse Problems and Data Assimilation of Radial Winds”.
2. Duaa H. Abbel Rahman (PhD, Offered in 2014), Department of Mathematical Sciences, College of Science, UAE University. Thesis entitled ”Mathematical Modeling of Immune System - Tumor Cell Growth Interactions”.
3. Noha Methat (PhD, Offered in 2009), Department of Mathematics, Faculty of Engineering, Ain Shams University, Egypt. Thesis entitled ”Continuous RK methods for Delay Differential Equations”.
4. Amged Ramses, (M.Sc.), Dept. Math., Helwan University, Egypt. Thesis entitled ”Explicit Runge-Kutta Methods for Delay Differential Equations”.
5. Mohamed A. Abdin (M.Sc.), Dept. Math., Helwan University, Egypt. Thesis entitled ”Differential Models for Immune System”.
6. Abd-Elghany A. Mahmoud, (M.Sc., Offered), Dept. Math., Helwan University, Egypt. Thesis entitled ”An Automated System for Iris Recognation”.

9.2 Post-Doc Research Assistants in Research Projects

1. Dr S. Lakshmanan, from 2013–2015;
2. Dr C. Rajivganthi, from 2015–
3. Dr. G. Velmurugan, from 2016–

10 Refereing & Editorial Duties:

10.1 Refereing

I reviewed many PhD and M.Sc theses. I am a reviewer for many database and international journals such as:

1. Mathematical Reviews (MR) and MathSciNet;
2. SIAM Journal on Scientific Computing.
3. Nonlinear Dynamics;
4. Complexity;
5. Applied Mathematics Letter;
6. International Journal of Computer Mathematics;
7. Journal of Computational and Applied Mathematics;
8. Numerical Methods for Partial Differential Equations;
9. Applied Numerical Mathematics;
10. Journal of the Egyptian Mathematical Society;
11. Journal of Applied Meteorology;
12. Applied Mathematical Modeling;
13. Journal of Advanced Research;
14. Applied Mathematics and Computation;
15. Journal of Applied Mathematics and Computing;
16. Mathematics and Computers in Simulation.
17. Abstract and Applied Analysis.
18. Mathematical Biosciences.

10.2 Promotion Committee

1. I am a referee in professor promotion committee in Supreme Council of Universities-Egypt;
2. I was a member of a promotion committee for associate professor in Om Alqura University;

10.3 Editorial Board

- Leading Guest Editors of the SI "Applications of Delay Differential Equations in Biological Systems", Complexity https://www.hindawi.com/journals/complexity/si/384786/.
- American Journal of Computational Mathematics.
- Current Advances in Mathematics.
- Asia Pacific Journal of Mathematics.
- Applied Mathematics and Sciences: An International Journal (MathSJ).
- Leading guest editor of a special issue of the *International Journal of Differential Equations*.

11 Awards & Recognition:

1. University Award for publication in top 10% journals, 2018.
2. College Award for Excellence Scholarly Research, 2014–2015.
3. University Award of Excellence Research in Basic Sciences, for the academic year 2006/2007, in Helwan University, Egypt.
4. Department Award of Excellence Research, for the academic year 2009/2010, UAE University, UAE.
5. The article " Numerical modelling in biosciences using delay differential equations, *J. Comput. Appl. Math.* **125** (2000) 183–199" has been republished in the of book "Ordinary Differential Equations and Integral Equations". This article has been cited more than 120 times since it was published.
6. The article "Modelling and analysis of of cell proliferation. J Math Biol; 1998 Oct;37(4):341-71" is recognisee and selected as the best top 10 articles published in the same domain since it was published (1998).
7. The article "Numerical Modelling by delay and Volterra functional differential equations, in *Computer Mathematics and its Applications, 2001*" is recognized and selected among the best 35 selected articles published in the last decade. It has been republished in 2001 and 2006.

12 Teaching:

1. I have more than 30 years in teaching undergraduate and graduate students in different universities.
2. I was a coordinator of many common courses taught in UAEU and other universities, such as MATH-1110, MATH-115, MATH-1120, MATH-2210.

3. I have experience in teaching many courses in UAEU such as : **Calculus I for Engineering Math 1110**, **Calculus II for Engineering Math 1120**, **Mathematical Modeling MATH 470**, **Linear Programming MATH 321**, **Numerical Analysis MATH 320, MATH 422**, **Calculus for Business MATH 115**, **Linear Algebra & Eng. Appl. MATH 2220**, **Differential Equations for Engineering MATH 2210**, Research Project MATH 495.

4. I experience in developing Math Program and courses for undergraduate and graduate.

5. Students Advisors for undergraduate and graduates.

6. I have experience in teaching many course for graduate students in UAEU such as **Numerical Methods for Differential Equations MATH 522**, **Thesis FOSR 900** , **Numerical Methods for Partial Differential Equations MATH 720**, and **Dynamical Systems MATH 673**.

7. I have taught courses for graduate students such as : (i) Advanced Differential Equations, (ii) Numerical Analysis, (iii) Fortran 90 for postgraduate students (Master and PhD degree) at Department of Mathematics, Faculty of Science, Helwan University.

8. I have taught the book "Ordinary Differential Equations for Engineering and Science Students" for L.B. Jones; "Advanced Engineering Mathematics" for E. Kreyszig in Faculty of Science & Engineering, Helwan University.

9. I have taught the book "Computational methods in ordinary differential equations" for J.D Lambert in Faculty of Science, Helwan University.

10. I have taught the book "Partial differential equations: analytical and numerical methods" for K.S. Mark n Faculty of Science, Helwan University (for postgraduates).

11. I have experience in teaching courses in "Numerical Analysis", "Vector Analysis for Scientist and Engineer" and "Mathematical Analysis" in Faculty of Science, Helwan University.

12. I have taught a course in "Basics of Computer", "Introduction to Computer Science and Programming using Matlab and Fortran", in Faculty of Science, Helwan University.

13. I have taught courses in "Calculus" and "Mathematical Analysis" (Math(1), Math(2) and Math(3)) in Faculty of Science and Faculty of Engineering, Helwan University.

14. I have experience in teaching courses in "Bio-mathematics", "Bio-statistics", "Numerical Methods with MATLAB" for G.J, Borse, and "Numerical methods with Fortran 77" for L.V. Atkinson, at Manchester University.

15. I have experience in teaching "**Mathematics for Business and Social Sciences: An Application Approach**", "**Statistics**", and "**Financial Mathematics**" in Faculty of Commerce, Helwan University and in MSA University.

16. My strategy in teaching is that I prepare topics before hand that include searching the most appropriate examples to make the theoretical materials easy for the students to comprehend. I usually start my lecture by giving a brief introduction about the topic leading to the subject, the lecture outline, and the Intended Learning Outcomes (ILOs) of the lecture. Then I start with the steps of the outline and finally conclude. I make sure (by different methods such as interactive learning, peer interactions, online assessments, group projects) that the

lecture has been delivered clearly and well understood by the students. By the end of the course, the students should collect all the ILOs of the course (covering the components of the ILOs: Knowledge and Understanding & Intellectual Skills & Practical Skills & Transferable Skills).

I guide my students to be active participants in the learning process, rather than passive observers. This is particularly important for lecture courses. I also always respect my students. I respect the goals, needs, and individuality of each student and help each student do his/her best to achieve these goals. Not all students respond similarly to the same methods, as they do not come from the same background, and may have different level of preparation.

13 Community Services & Membership:

1. Member of College Council, 2018–2020.
2. Member of Promotion Committee, Department of Mathematical Sciences, UAE University.
3. A referee in professor promotion committee in Supreme Council of Universities-Egypt;
4. A member of a promotion committee for associate professor in Om Alqura University;
5. Supervisor of internship students in UAEU, in 2010, 2009.
6. Students Advisory Committee 2015-2016.
7. Academic advisor for female students.
8. Coordinator of KPI and Quality Assurance committee (College and Department levels) in UAEU, 2009–2016.
9. Participated in the Summer School, organized by the Egyptian Mathematical Scarcity, in 2010.
10. Chairman of Mathematics Exam Setting Committee for General Secondary Certificate in EGYPT, for the academic years 2007/2008.
11. 2006-2008: **Manager and Director of Quality Assurance Unit in Faculty of Science, Helwan University.**
12. Director of Quality Assurance Unit. I published the first issue of Self Evaluation Report of the Faculty of Science (2007/2008), Helwan University, Egypt.
13. I participated in writing the "Quality Management Guide for Egyptian Higher Education Institutions". Please visit:
www.ua.es/en/internacional/internacionalizacion/express/download/EXPRESS_guide.pdf.
14. Coordinator of Quality Assessment of the Educational and Academic Environments, college of science, UAE University in 2009.
15. Coordinator of Quality Assurance and KPIs (Key Performance Indicators), college of science, College of Science, UAE University in 2010–14.
16. Coordinator of Strategic Plan Committee, College of Science, UAEU, 2014.

17. Member of Hiring Committee for Assistant and Associate Professors, Department of Mathematical Science, UAEU 2012, 2014, 2015/2016.

18. Member of PPR (Periodical Program Review) Committee in 2014-2016.

19. Manager of Hiring Committee of Postdoctoral Positions, 2015.

13.1 Membership

1. Member of Egyptian National Committee for Mathematics (2007-2009).

2. Member of Egyptian Mathematical Society.

3. Consultant in Ministry of Education - General Secondary (2007-2009) Certificate.

4. Member of European Mathematical Biology Society.

5. A member of American Meteorological Society.

6. A member of Egyptian Scientific Profession Union.

14 Organization:

I have been serving on the organizing committee of the following:

1. Workshop on "Delay Differential Equations: Theory, Applications and New Trends (DDEs-TANTs 18), 3–4 Oct. 2018, UAE University, Al Ain, UAE.

2. International Conference on Environmental Mathematics ICE-MATH2016, to be held on November 14-16, 2016.

3. Special Session on "Applications of Dynamical Systems with Delays", The Nineteenth International Conference on Difference Equations and Applications, Sultan Qaboos University, Muscat, Oman, May 26 - 30, 2013.

4. Workshop on "Fractional Calculus and Its Applications", UAE University, 24-26, April 2013, ail Ain UAE.

5. Symposium on "Efficient Numerical Techniques for Delay Differential Equations in Dynamic Diseases", ICNAAM 2012, Kypriotis Hotels and Conference Center, Kos, Greece, 19-25 September 2012

6. Fourth International Conference on Mathematics ICM 2012, UAEU, March 2012.

7. the "International Conference on Renewable Energy: Generation and Applications ICREGA10 to be held in Al Ain, UAEU, March 10-15, 2010.

8. the "Second International Conference on Mathematics: Trend and Developments" (ICMTD07) that has been held in Cairo (December 2007);

9. the "Second Arab conference of Biophysics & Mathematical Modeling" that has been held in Arab League - Cairo, August 12-23, 2007 www.etms-web.org/acb07

10. the ”25th Conference of Mathematics” that has been held in Helwan University - Cairo, July 12-15, 2008
11. Lots of seminars in the department of mathematics, Helwan University.
12. Lots of seminars in the department of mathematics, university of Manchester (UK).
13. Many social cultural activities during my stay in UK and when I was the Head of the Egyptian Society at Manchester University, in 1998 & 1999.

15 Professional Activities & Skills:

I have a good multidisciplinary background in the following:

15.1 Mathematics:

1. I have a good knowledge in mathematical modelling of phenomena with time-lags or after-effects, such as cell division, population dynamics, infectious diseases, etc.
2. I am familiar with numerical solutions of ordinary and delay differential equations, using continuous RK methods and some associated problems with the numerical solution such as propagations of discontinuities.
3. I have experience in parameter estimations in ordinary and delay differential equations, using least squares approach.
4. I have experience in the numerical solution of partial differential equations (parabolic and hyperbolic types), using discretization and spectral methods.
5. I have experience in data assimilation and numerical weather prediction.
6. I am familiar with the basic concepts of probability and statistics and model selection criteria.
7. I have an expertise in formulating multi-team scientific proposal in Biomathematical Research.

15.2 Computer science:

1. I am familiar with Windows, and Unix/Linux systems.
2. I am familiar with Blackboard and Smart Board.
3. I have programming skills in Fortran (with using NAG library), Matlab, Mathematica & SPSS.
4. I attended a course of ECDL (European Computer Deriving Licence), held in Manchester University.
5. I am familiar with Latex and Microsoft Office (Word, PowerPoint, Excel, data base).
6. I am familiar with Blackboard System.

15.3 Training Courses in Development and Communication:

1. Workshop on ”Completive Research Projects”, 15 hours in Helwan University, 3-5/01/2012.
2. Workshop on ”Effective Presentation”, 15 hours in Helwan University, 18-20/12/2011.
3. Workshop on ”Time and Conference Management”, 15 hours in Helwan University, 25-27/12/2011.
4. Workshop on ”Conference Organization”, 15 hours in Helwan University, 22-24/08/2010.
5. Workshop on ”University Administration”, 15 hours in Helwan University, 29-31/08/2010.
6. Workshop on ”Research Ethics”, 15 hours in Helwan University, 5-7/9/2010.
7. I attended a lot of courses in Quality Assurance and Accreditation.
8. I attended and complemented many courses of ”Transferable Skills” and ”Graduate Teaching Assistants” that were held at Manchester University in Sep. 1998 and Sep. 1999 respectively.
9. I attended and completed the course of ”Teaching Qualification and Teaching Methodology” that was held at Helwan University, Egypt in July 2000.
10. I also attended and completed many courses in Quality Assurance And Accreditation In Higher Education Institutions that have been held in Helwan University.

16 Colleagues & Co-authors:

Dr Rihan’s research work is a result of collaborations with more than 40 distinguished scientists from different countries. Among them is the following list of top co-authors.

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