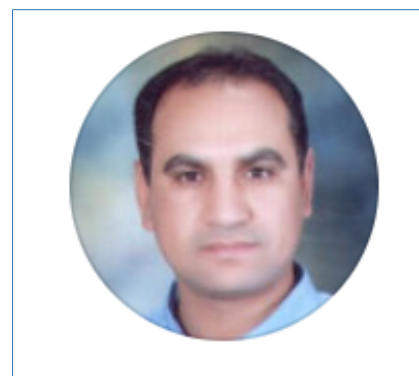


# Gamal Ismail

## Curriculum Vitae



### Personal Data

Full Name **Gamal Mohamed Ismail**  
Nationality Egyptian  
Address Mathematics Department, Faculty of Science, Sohag University, Sohag, Egypt  
Date of Birth 1 Oct. 1973  
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Email gamalm2010@yahoo.com , gamal@science.sohag.edu.eg

major specialization **Differential Equations**

Current position **Assistant professor**

Orcid [Please Click Here](#)

Google Scholar [Please Click Here](#)

Research Gate [Please Click Here](#)

Linked [Please Click Here](#)

### Research Interest

Mathematical Physics, Differential Equations, Nonlinear oscillators, Analytical Techniques, Nonlinear Partial Differential Equations, Perturbation Methods, Nonlinear Dynamics, Mathematical Modelling, Applied Mathematics, Analytical Methods.

### Scopus Information's

Scopus ID	No. of articles in Scopus	Citations in Scopus	h-index in Scopus
57214384404	37	419	10

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## Work Experience

- 2021 to date Assistant Prof. at Mathematics Department, Faculty of Science, Sohag University, sohag , Egypt.
- 2019-2021 Assistant Prof. at Mathematics Department, Faculty of Science, Islamic University of Madinah, Madinah, Saudi Arabia
- 2013-2019 Lecturer at Mathematics Department, Faculty of Science, Sohag University, Sohag, Egypt.

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## Teaching (Undergraduate Courses)

Ordinary differential equations - Partial differential equations - Calculus (differentiation and integration) - Theory of probability - Linear algebra - Mathematical statistical - Advanced algebra - Numerical analysis - Differential geometry - Mathematics using computers - Introduction to computer - Information technology - Special functions - Mathematica program - Mathematical methods - Analytical geometry.

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## Teaching (Graduate Courses)

Differential equations - Dynamical systems - Numerical analysis - Applied Mathematics.

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## Education

- 2015 **Ph.D in Mathematics Sohag University, Sohag, Egypt.**
- 2008 **Master Degree in Science” Mathematics”, Sohag University , Sohag, Egypt.**

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## Master Thesis

Title *On the periodic solutions of non-linear second order ordinary differential equations*

Supervisors Prof. Dr. A. M. El-Naggar, Department of Mathematics, Faculty of Science. Benha University, Prof. Dr. A. M. Abd-Allah, Department of Mathematics, Faculty of Science. Sohag University, Dr. G. M. Abd El-Latif, Assistant Professor Department of Mathematics, Faculty of Science. Sohag University .

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## Ph. D. Thesis

Title *On the periodic solutions of a certain non-linear differential equations.*

Supervisors Prof. Dr. A. M. El-Naggar, Department of Mathematics, Faculty of Science. Benha University , Prof. Dr. A. M. Abd-Allah, Department of Mathematics, Faculty of Science. Sohag University, Dr. G. M. Abd El-Latif, Assistant Professor Department of Mathematics, Faculty of Science. Sohag University

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## Publications

1. L. Cvitanin., G. M. Abd El-Latif, A. M. El-Naggar and G. M. Ismail, Periodic solution of the generalized Rayleigh equation, Journal of Sound and Vibration. 318 (2008), 580-591.
2. A. M. El-Naggar, G. M. Abd El-Latif and G. M. Ismail, Solutions of the Duffing-harmonic oscillator by He's energy balance method, International Journal of Nonlinear Dynamics in Engineering and Sciences. 2 (2010), 259-266.
3. A. M. El-Naggar and G. M. Ismail, Applications of He's frequency-amplitude formulation to the free

- vibrations of strongly nonlinear oscillators, *Applied Mathematical Sciences*. 6 (2012), 2071-2079.
4. G. M. Ismail, Periodic solutions of a certain non-linear differential equations, LAP LAMBERT Academic Publishing (2012-08-09).
  5. T. A. Nofal, G. M. Ismail, A. Ali and S. Abdel-Khalek, Analytical and approximate solutions to the free vibration of strongly nonlinear oscillators, *Journal of Electromagnetic Analysis and Applications*. 5 (2013), 388-392.
  6. T. A. Nofal, G. M. Ismail and S. Abdel-Khalek, Application of homotopy perturbation method and parameter expanding method to fractional Van der Pol damped nonlinear oscillator, *Journal of Modern Physics*. 4 (2013), 1490-1494.
  7. A. M. El-Naggar and G. M. Ismail, Solutions of nonlinear oscillators by iteration perturbation method, *Information Sciences Letters*. 3 (2014), 91-95.
  8. A. M. El-Naggar and G. M. Ismail, Analytical solutions of strongly non-linear problems by the iteration perturbation method, *Journal of Scientific Research and Reports*. 5 (2015), 285-294.
  9. A. M. El-Naggar and G. M. Ismail, Solutions of a quadratic nonlinear oscillator by elliptic homotopy averaging method, *Mathematical Sciences Letters*. 4 (2015), 313-317.
  10. M. Abul-Ez., G. M. Ismail and M. M El-Moshneb, Analytical solutions for free vibration of strongly nonlinear oscillators, *Information Sciences Letters*. 4 (2015), 101-105.
  11. A. M. El-Naggar and G. M. Ismail, Analytical solutions of strongly nonlinear Duffing oscillators, *Alexandria Engineering Journal*. 55 (2016), 1581-1585.
  12. A. M. El-Naggar and G. M. Ismail, Periodic solutions of the Duffing harmonic oscillator by He's energy balance method, *Journal of Applied and Computational Mechanics*. 2 (2016), 31-40.
  13. G. M. Ismail, An analytical technique for solving nonlinear oscillators of the motion of a rigid rod rocking bock and tapered beams, *Journal of Applied and Computational Mechanics*. 2 (2016), 41-50.
  14. G. M. Ismail, An analytical coupled homotopy-variational approach for solving strongly nonlinear differential equation, *Journal of the Egyptian Mathematical Society*. 25 (2017), 434-437.
  15. G. M. Ismail, M. Abul-Ez, N. M. Farea and N. Saad, Analytical approximations to nonlinear oscillation of nanoelectro-mechanical resonators, *European Physical Journal Plus*. (2019), 134 (1), 47.
  16. L. Cvitanin and G. M. Ismail, Higher order approximate periodic solutions for the oscillator with strong nonlinearity of polynomial type, *European Physical Journal Plus* (2019). 134 (6), 266.
  17. G. M. Ismail, H. R. Abdl-Rahim, A. Abdel-Aty, R. Kharabsheh, W. Alharbi and M. Abdel-Aty, An analytical solution for fractional oscillator in a resisting medium, *Chaos Solitons and Fractals*. 130 (2020) 109395.
  18. Md. Alal Hosen, G. M. Ismail, A. Yildirim and M. A. S. Kamal, A modified energy balance method to obtain higher-order analytical approximations to the oscillators with cubic and harmonic restoring force. *Journal of Applied and Computational Mechanics*. 6(2) (2020), 320-331.
  19. G. M. Ismail, M. Abul-Ez and N. M. Farea, An accurate analytical solution to strongly nonlinear differential equations, *Applied Mathematics and Information Science*. 14(2) (2020), 141-149.
  20. Md. Alal Hosen, G. M. Ismail, M. S. H. Chowdhury and M. Y. Ali, A modified harmonic balance method to obtain higher-order approximations to strongly nonlinear oscillators. *Journal of Interdisciplinary Mathematics*. 23(7) (2020), 1325-1345.
  21. G. M. Ismail, H. R. Abdl-Rahim, H. Ahmad and Yu -Ming Chu, Fractional residual power series method for the analytical and approximate studies of fractional physical phenomena, *Open Physics*. 18 (2020) 799-805.
  22. G. M. Ismail and Md. Alal Hosen, Global residue harmonic balance method for obtaining higher-order accurate solutions to the strongly nonlinear oscillator, *Thai Journal of Mathematics*. 18(4) (2020), 1947-1959.
  23. G. M. Ismail and H. Abu-Zinadah, Analytic Approximations to non-linear third order Jerk equations

- via modified global error minimization method, *Journal of King Saud University-Science*. 33(1) (2021), 101219.
24. H. Ahmad, T. A. Khan, H. Durur, G. M. Ismail and A. Yokus, Analytic approximate solutions of diffusion equations arising in oil pollution, *Journal of Ocean Engineering and Science*, 6 (2021). 62-69.
  25. M. Abdul Halim, A. Paul, M. Mahmoud, B. Alshahrani, A. Y. M. Alazzawi and G. M. Ismail, An overtime production inventory model for deteriorating items with nonlinear price and stock dependent demand, *Alexandria Engineering Journal*, 60 (2021). 2779-2786.
  26. G. M. Ismail and L. Cveticanin, Higher order Hamiltonian approach for solving doubly clamped beam type N/MEMS subjected to the van der Waals attraction, *Chinese Journal of Physics*, 72 (2021) 69-77.
  27. G. M. Ismail, M. Abul-Ez, M. Zayed and N. M. Farea, Analytical accurate solutions of nonlinear oscillator systems via coupled homotopy-variational approach, *Alexandria Engineering Journal*, 61 (2022) 5051-5058
  28. G. M. Ismail, M. Abul-Ez, H. Ahmad and N. M. Farea, Analytical study of the vibrating double-sided quintic nonlinear nano-torsional actuator using higher-order Hamiltonian approach, *Journal of Low Frequency Noise, Vibration & Active Control*, 41 (2022) 269-277.
  29. G. M. Ismail, M. Abul-Ez, M. Zayed, H. Ahmad and M. M. El-Moshneb, Highly accurate analytical solution for free vibrations of strongly nonlinear Duffing oscillator, *Journal of Low Frequency Noise, Vibration & Active Control*, 41 (2022) 223-229.
  30. N. M. Farea, M. Zayed and Gamal M. Ismail, Accurate analytical solution of the circular sector oscillation by the modified harmonic balance method, *Journal of Low Frequency Noise, Vibration & Active Control*, (2022) DOI: 10.1177/14613484221104646.
  31. G. M. Ismail, A.M.S. Mahdy, Y.A. Amer and E.S.M. Youssef, Computational simulations for solving nonlinear composite oscillation fractional, *Journal of Ocean Engineering and Science*, (2022). Doi.org/10.1016/j.joes.2022.06.029.
  32. G. M. Ismail, Kh Lotfy and A. El-Ba.ry, Response of thermo-mechanical waves of an excited microelongated semiconductor layer according to photothermal transport processes, *European Journal of Mechanics / A Solids* 96 (2022) 104714.
  33. G. M. Ismail, K. A. Gepreel, Kh. Lotfy, A. M. S. Mahdy, A. El-Bary and Abdulkafi M. Saeed, Influence of variable thermal conductivity on thermal-plasma-elastic waves of excited microelongated semiconductor, *Alexandria Engineering Journal* 61 (2022) 12271-12282.
  34. H. R. Abdl-Rahim, M. Zayed and G. M. Ismail, Analytical Study of Fractional Epidemic Model via Natural Transform Homotopy Analysis Method, *Symmetry* 14 (2022), 1695.
  35. G. M. Ismail, Md. A. Hosen, M. Mohammadian, M. M. El-Moshneb and M. Bayat, Nonlinear Vibration of Electrostatically Actuated Microbeam, *Mathematics* 10 (2022) 4762.
  36. G. M. Ismail, M. A. Hosen, M. Mohammadian, M. Bayat and M. El-Moshneb, Nonlinear Vibration of Electrostatically Actuated Microbeam, *Mathematics* 2022, 10, 4762.
  37. G. M. Ismail, M. M. El-Moshneb and M. Zayed, A modified global error minimization method for solving nonlinear Duffing-harmonic oscillators, *AIMS Mathematics*, 8 (2023), 484-500.
  38. G. M. Ismail, M. M. El-Moshneb and M. Zayed Analytical technique for solving strongly nonlinear oscillator differential equations, *Alexandria Engineering Journal*, revise (2023).

## Conferences

1. G. M. Abd El-Latif, A. M. El-Naggar and G. M. Ismail, Periodic solutions of strongly non-linear Duffing oscillators, , One Day Conference on Dynamical Systems and their Applications, Assiut, Egypt, 26 April 2007.
2. G. M. Abd El-Latif and G. M. Ismail, Periodic solution of the generalized Van der Pol oscillators by the elliptic homotopy averaging method, 6th International Conference (Science, Development &

Quality Assurance) Faculty of Science, Al-Azhar University Cairo, Egypt, 24-26 March 2008.

3. G. M. Abd El-Latif, A. M. El-Naggar and G. M. Ismail, Application of He's iteration method to strongly non-linear oscillators, 1st International Conference on Mathematics & Information Security, (ICMIS), Sohag University, Egypt, 13-15 November 2009.
4. G. M. Ismail, Study of nonlinear vibration of an electrostatically actuated microbeam by using global residue harmonic balance method, 5th International Conference on Mathematics & Information Sciences (ICMIS), Zewail City of Science and Technology, Egypt, 11-13 Feb. 2016.
5. G. M. Ismail, M. Abulez and N. M. Farea, Higher order harmonic balance method for solving free vibration of systems with linear and nonlinear stiffness, 6th International Conference on Mathematics & Information Sciences (ICMIS), Zewail City of Science and Technology, Egypt, 9-11 Feb. 2017.
6. G. M. Ismail, M. Abulez and N. M. Farea, Analytical approximations to nonlinear oscillation of nanoelectro-mechanical resonators, 7th International Conference on Mathematics & Information Sciences, (ICMIS), Sohag University, Egypt, 15-17 Feb. 2018.
7. G. M. Ismail and H. R. Abd El-Rahim, Analytical exact solution of fractional oscillator in a resisting medium, 7th International Conference on Mathematics & Information Sciences, (ICMIS), Sohag University, Egypt, 15-17 Feb. 2018.

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## Languages

Arabic Native

English Very Good

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## Computer Skills

Expert Mathematica and Matlab