

Professor Niveen Mohamed Badra

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Information :

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Education & Degrees :

- Professor in Engineering Mathematics, Faculty of Engineering, Ain Shams University, 2008.
- Assistant Professor in Engineering Mathematics, Faculty of Engineering, Ain Shams University, 2003.
- Ph.D. in Engineering Mathematics, Faculty of Engineering, Ain Shams University, 1997.

Address: 1 El Sarayat St., ABBASSEYA, Al Waili, Cairo Governorate.

The thesis entitled: "Fuzzy Multicriteria Decision Making Problems and Their Engineering Applications".

- Master of Science (M.Sc.) in Engineering Mathematics, Faculty of Engineering, Ain Shams University, 1994.
- Bachelor of Structural Engineering, Faculty of Engineering, Ain Shams University, 1987.

Address: 1 El Sarayat St., ABBASSEYA, Al Waili, Cairo Governorate.

Member of Professional Societies:

- Refree for Some international Journals
- Refree in Scientific Comete for Professors and Associated Professors qualification.
- Refree for some Theses in Faculty of Engineering Ain Shams University and others.
- Member of Comete for PHD Qalification Exam in Engineering Mathematics from 2015 till now.
- Member of Comete for PHD Qalification Exam in Structural Departement from 2018-2021.
- Member of Comete for PHD Qalification Exam in Electrical Power Depatement in 2018 & 2020.

- Scopus (ID: 6506241007)
- ORCID (ID: <https://orcid.org/0000-0002-8831-0577>)
- h – Index: 15

**Academic
Experience:**

**Head of the Department of Physics and Engineering Mathematics,
Faculty of Engineering, Ain Shams University, from August 2023 till
present.**

**Member of Scientific Committee for Professors and Associated
Professors qualification, from September 2022 till present.**

**January. 2008 till now: Faculty of Engineering – Ain Shams University in
Egypt.**

Title: Professor of Engineering Mathematics

**2011(September) – 2017(July): Faculty of Engineering – Ain Shams
University in Egypt.**

Title: Head of the Department of Physics and Engineering Mathematics.

**1997(September) – 2003(January): Faculty of Engineering – Ain Shams
University in Egypt.**

Title: Assistant Professor of Engineering Mathematics

**1994(December) – 1997(December): Faculty of Engineering – Ain Shams
University in Egypt.**

Title: Lecturer of Engineering Mathematics.

**1993(September) – 1994(December): Faculty of Engineering – Ain Shams
University in Egypt.**

Title: TA of Engineering Mathematics.

**Research Area /
Supervision:**

Total of about 35

Research Area /
Publications: Total of 114

Sample of Recent Publications

Investigating innovative optical solitons for a (3+1)- dimensional nonlinear Schrödinger's equation under the influences of 4th-order dispersive and parabolic law of nonlinearities

Khalifa, A.S., Ahmed, H.M., Badra, N.M., Rabie, W.B., Emadifar, H.
Results in Optics, 2024, 17, 100754

Diverse exact solutions to davey–stewartson model using modified extended mapping method

Ahmed, K.K., Ahmed, H.M., Badra, N.M., ... Rabie, W.B., Eslami, M.
Nonlinear Analysis: Modelling and Control, 2024, 29(5), pp. 983–1002

New analytical wave structures for generalized B-type Kadomtsev-Petviashvili equation by improved modified extended tanh function method

Ghayad, M.S., Ahmed, H.M., Badra, N.M., ... Hosseinzadeh, M.A., Rabie, W.B.
Physica Scripta, 2024, 99(12), 125224

Discovēring nōvēl optical solitons of two CNLSEs with coherent and incoherent nonlinear coupling in birefringent optical fibers

Khalifa, A.S., Rabie, W.B., Badra, N.M., ... Hashemi, M.S., Bayram, M.
Optical and Quantum Electronics, 2024, 56(8), 1340

Extraction of new optical solitons of conformable time fractional generalized RKL equation via quadrupled power-law of self-phase modulation

Ghayad, M.S., Ahmed, H.M., Badra, N.M., ... Hosseinzadeh, M.A., Rabie, W.B.
Optical and Quantum Electronics, 2024, 56(8), 1304

Highly dispersive optical solitons in fiber Bragg gratings with cubic quadratic nonlinearity using improved modified extended tanh-function method

Ghayad, M.S., Badra, N.M., Ahmed, H.M., ... Mirzazadeh, M., Hashemi, M.S.
Optical and Quantum Electronics, 2024, 56(7), 1184

Dispersive perturbations of solitons for conformable fractional complex Ginzburg–Landau equation with polynomial law of nonlinearity using improved modified extended tanh-function method

Soliman, M., Samir, I., Ahmed, H.M., ... Hashemi, M.S., Bayram, M.
Optical and Quantum Electronics, 2024, 56(7), 1084

**Research Area /
Publications:**

Optical solitons retrieval for an extension of novel dual-mode of a dispersive non-linear Schrödinger equation

Ahmed, K.K., Ahmed, H.M., Badra, N.M., Rabie, W.B.
Optik, 2024, 307, 171835

Exploring solitons in optical twin-core couplers with Kerr law of nonlinear refractive index using the modified extended direct algebraic method

Khalifa, A.S., Ahmed, H.M., Badra, N.M., Rabie, W.B.
Optical and Quantum Electronics, 2024, 56(6), 1060

Optical solitons of higher order mathematical model with refractive index using Kudryashov method

Elsherbeny, A.M., Elsonbaty, N.M., Badra, N.M., ... Hashemi, M.S., Bayram, M.
Optical and Quantum Electronics, 2024, 56(6), 935

New solitons and other exact wave solutions for coupled system of perturbed highly dispersive CGLE in birefringent fibers with polynomial nonlinearity law

Rabie, W.B., Ahmed, K.K., Badra, N.M., ... Mirzazadeh, M., Eslami, M.
Optical and Quantum Electronics, 2024, 56(5), 875

Effects of fractional derivative on fiber optical solitons of $(2 + 1)$ perturbed nonlinear Schrödinger equation using improved modified extended tanh-function method

Soliman, M., Ahmed, H.M., Badra, N., Samir, I.
Optical and Quantum Electronics, 2024, 56(5), 777

New visions of optical soliton to a class of generalized nonlinear Schrödinger equation with triple refractive index and non-local nonlinearity

Elsonbaty, N.M., Badra, N.M., Ahmed, H.M., Alkhatib, S., Elsherbeny, A.M.
Ain Shams Engineering Journal, 2024, 15(4), 102641

Soliton Solutions and Other Solutions to the $(4+1)$ -Dimensional Davey–Stewartson–Kadomtsev–Petviashvili Equation using Modified Extended Mapping Method

Rabie, W.B., Khalil, T.A., Badra, N., ... Mirzazadeh, M., Hashemi, M.S.
Qualitative Theory of Dynamical Systems, 2024, 23(2), 87

**Research Area /
Publications:**

Novel optical soliton solutions using improved modified extended tanh function method for fractional beta time derivative (2+1)-dimensional Schrödinger equation

Soliman, M., Ahmed, H.M., Badra, N., Samir, I., Eslami, M.

Modern Physics Letters B, 2024, 2550084

Unveiling of Highly Dispersive Dual-Solitons and Modulation Instability Analysis for Dual-Mode Extension of a Non-Linear Schrödinger Equation

Khalifa, A.S., Ahmed, H.M., Badra, N.M., Rabie, W.B.

Contemporary Mathematics (Singapore), 2024, 5(4), pp. 5358–5381

Derivation of some solitary wave solutions for the (3+1)-dimensional pKP-BKP equation via the IME tanh function method

Khalifa, A.S., Ahmed, H.M., Badra, N.M., ... Nisar, K.S., Rabie, W.B.

AIMS Mathematics, 2024, 9(10), pp. 27704–27720

New soliton wave structure and modulation instability analysis for nonlinear Schrödinger equation with cubic, quintic, septic, and nonic nonlinearities

Khalifa, A.S., Ahmed, H.M., Badra, N.M., ... Al-Askar, F.M., Mohammed, W.W.

AIMS Mathematics, 2024, 9(9), pp. 26166–26181

Highly dispersive gap solitons for conformable fractional model in optical fibers with dispersive reflectivity solutions using the modified extended direct algebraic method

Soliman, M., Ahmed, H.M., Badra, N., Nofal, T.A., Samir, I.

AIMS Mathematics, 2024, 9(9), pp. 25205–25222

Investigation of solitons in magneto-optic waveguides with Kudryashov's law nonlinear refractive index for coupled system of generalized nonlinear Schrödinger's equations using modified extended mapping method

Ahmed, K.K., Badra, N.M., Ahmed, H.M., ... Eslami, M., Hashemi, M.S.

Nonlinear Analysis: Modelling and Control, 2024, 29(2), pp. 205–223

**Research Area /
Publications:**

Unveiling optical solitons and other solutions for fourth-order (2+1)-dimensional nonlinear Schrödinger equation by modified extended direct algebraic method

Ahmed, K.K., Badra, N.M., Ahmed, H.M., Rabie, W.B.

Journal of Optics (India), 2024

Analytic soliton solutions for RKL equation with quadrupled power-law of self-phase modulation using modified extended direct algebraic method

Ghayad, M.S., Badra, N.M., Ahmed, H.M., Rabie, W.B.

Journal of Optics (India), 2024

Solitons behavior of Sasa-Satsuma equation in birefringent fibers with Kerr law nonlinearity using extended F-expansion method

Borg, M., Badra, N.M., Ahmed, H.M., Rabie, W.B.

Ain Shams Engineering Journal, 2024, 15(1), 102290

Diverse new solitons and other exact solutions for concatenation model using modified extended mapping method

Rabie, W.B., Khalil, T.A., Badra, N., ... Ahmed, H.M., Mirzazadeh, M.

Optical and Quantum Electronics, 2023, 55(11), 952

Derivation of optical solitons in magneto-optical waveguides to coupled BMEs having Kudryashov's nonlinearity

Borg, M., Badra, N.M., Ahmed, H.M., Rabie, W.B.

Optical and Quantum Electronics, 2023, 55(8), 672

Soliton solutions of generalized Kundu-Eckhaus equation with an extra-dispersion via improved modified extended tanh-function technique

Ahmed, K.K., Badra, N.M., Ahmed, H.M., Rabie, W.B.

Optical and Quantum Electronics, 2023, 55(4), 299

Derivation of new optical solitons for Biswas-Milovic equation with dual-power law nonlinearity using improved modified extended tanh-function method

Elsonbaty, N.M., Badra, N.M., Ahmed, H.M., Elsherbeny, A.M.

Alexandria Engineering Journal, 2023, 67, pp. 537–546

**Research Area /
Publications:**

Exploring soliton solutions to sixth order dispersive non-linear Schrödinger equation with Kerr law nonlinearity using modified extended direct algebraic method

Samir, I., Badra, N., Ahmed, H.M., Arnous, A.H.
Optical and Quantum Electronics, 2023, 55(2), 184

Derivation of optical solitons and other solutions for nonlinear Schrödinger equation using modified extended direct algebraic method

Ghayad, M.S., Badra, N.M., Ahmed, H.M., Rabie, W.B.
Alexandria Engineering Journal, 2023, 64, pp. 801–811

Constructing new solitary wave solutions to the strain wave model in micro-structured solids

Nofal, T.A., Samir, I., Badra, N., ... Ahmed, H.M., Arnous, A.H.
Alexandria Engineering Journal, 2022, 61(12), pp. 11879–11888

Bright solitons for twin-core couplers and multiple-core couplers having polynomial law of nonlinearity using Jacobi elliptic function expansion method

Khalil, T.A., Badra, N., Ahmed, H.M., Rabie, W.B.
Alexandria Engineering Journal, 2022, 61(12), pp. 11925–11934

Soliton Solutions and Other Solutions for Kundu–Eckhaus Equation with Quintic Nonlinearity and Raman Effect Using the Improved Modified Extended Tanh-Function Method

Ahmed, K.K., Badra, N.M., Ahmed, H.M., Rabie, W.B.
Mathematics, 2022, 10(22), 4203

Construction Cubic–Quartic Optical Solitons and Other Solutions for Coupled System of Fokas–Lenells Equation Using the Improved Modified Extended tanh Function Method

Samir, I., Badra, N., Ahmed, H.M., Arnous, A.H.
International Journal of Applied and Computational Mathematics, 2022, 8(5), 265

**Research Area /
Publications:**

Solitary Wave Solutions for Generalized Boiti–Leon–Manna–Pempinelli Equation by Using Improved Simple Equation Method

Samir, I., Badra, N., Ahmed, H.M., Arnous, A.H.

International Journal of Applied and Computational Mathematics, 2022, 8(3), 102

Computational extracting solutions for the perturbed Gerdjikov-Ivanov equation by using improved modified extended analytical approach

Samir, I., Badra, N., Seadawy, A.R., Ahmed, H.M., Arnous, A.H.

Journal of Geometry and Physics, 2022, 176, 104514

Solitary wave solutions and other solutions for Gilson–Pickering equation by using the modified extended mapping method

Samir, I., Badra, N., Ahmed, H.M., Arnous, A.H., Ghanem, A.S.

Results in Physics, 2022, 36, 105427

Optical soliton perturbation with Kudryashov’s generalized law of refractive index and generalized nonlocal laws by improved modified extended tanh method.

Samir, Islam, Niveen Badra, Hamdy M. Ahmed, and Ahmed H. Arnous
Alexandria Engineering Journal 61, no. 5 (2022): 3365-3374.

Optical solitons and other solutions for coupled system of nonlinear Schrödinger’s equation with parabolic nonlocal law of refractive index by using the improved modified extended tanh function method.

Samir, Islam, Niveen Badra, Hamdy M. Ahmed, and Ahmed H. Arnous
Optik (2022): 168602.

Optical solitons and other solutions for coupled system of nonlinear Biswas-Milovic equation with Kudryashov’s law of refractive index by Jacobi elliptic function expansion method.

Khalil, Tarek A., Niveen Badra, Hamdy M. Ahmed, and Wafaa B. Rabie
Optik (2022): 168540.

Solitons in birefringent fibers for CGL equation with Hamiltonian perturbations and Kerr law nonlinearity using modified extended direct algebraic method.

Samir, Islam, Niveen Badra, Hamdy M. Ahmed, and Ahmed H. Arnous

Communications in Nonlinear Science and Numerical Simulation 102 (2021): 105945.

Solitons dynamics in optical metamaterial with quadratic–cubic nonlinearity using modified extended direct algebraic method.

Samir, Islam, Niveen Badra, Hamdy M. Ahmed, and Ahmed H. Arnous
Optik 243 (2021): 166851.

Exact wave solutions of the fourth order non-linear partial differential equation of optical fiber pulses by using different methods.

Samir, Islam, Niveen Badra, Aly R. Seadawy, Hamdy M. Ahmed, and Ahmed H. Arnous
Optik 230 (2021): 166313.

Optimized Dynamic Operation of Fixed-Speed Wind Farms Using Classical and Advanced Controllers.

Omar, Othman A., Niveen M. Badra, Mahmoud A. Attia, and Ahmed Gad

International Journal of Emerging Electric Power Systems 21, no. 2 (2020).

Research Area /

Publications:

Proper selection of doubly fed induction generator wind turbine using several optimization techniques.

Omar, Othman A., Niveen M. Badra, and Mahmoud A. Attia

In *2019 IEEE Conference on Power Electronics and Renewable Energy (CPERE)*, pp. 43-50. IEEE, 2019.

WiFi antenna design and modeling using artificial neural networks

Badra, N. M., A. M. M. A. Allam, and Ahmed El-Rafei

In *2019 International Conference on Innovative Trends in Computer Engineering (ITCE)*, pp. 270-274. IEEE, 2019.

Enhancement of on-grid pv system under irradiance and temperature variations using new optimized adaptive controller.

Omar, Othman AM, Niveen M. Badra, and Mahmoud A. Attia

International Journal of Electrical and Computer Engineering 8, no. 5 (2018): 2650.

Languages :

English : Good spoken and written

ARABIC : Native language