# Curriculum Vita

Last update: 5 February 2021

## 1- PERSONAL DATA


**Full Name:** Samir Abd El-Hakim Abd El-Hamid Muhammad El-Tantawy

**Citizenship:** Egyptian (Egypt)

**Born:** 28 December 1983 in Mansoura, Egypt.

**Permanent address (EGYPT):** Department of Physics, Faculty of Science, Port Said University, Port Said City, Egypt.

**Mobile:** +966507545314 (KSA),

**Tel:**

**Fax:** [redacted]

**Previous address:** From 9 January 2007 till February 2009 (EGYPT): Department of Physics, Faculty of Science, Assiut University, Egypt.

**Present address:** Department of Physics, Faculty of Science and Arts, Al-Mikhwah, Al-Baha University, Saudi Arabia.

**Email addresses:** samireltantawy@yahoo.com
tantawy@sci.psu.edu.eg (Port Said University)
seltantawy@bu.edu.sa (Baha University)


## 2- EDUCTION

- **Associate Prof. in Theoretical Physics (Plasma Physics),** Awarded in February 2020, Faculty of Science, Port Said University, Egypt.

- **Ph.D. in Theoretical Physics (Plasma Physics),** Registration in 9 July 2012 and Awarded in 22 June 2014, Faculty of Science, Port Said University, Egypt.
  **Thesis title:** "**Generation of Electric Field in Ultracold Neutral Plasmas**".
  **Thesis supervision**: S. K. El-Labany & W. M. Moslem & M. El-Metwally.

- **M.Sc. in Theoretical Physics (Plasma Physics),** Registration in January 2010 and Awarded in February 2012, Faculty of Science, Port Said University, Egypt.
  **Thesis title:** "**Nonlinear Structures in Multicomponent Plasmas**".
  **Thesis supervision**: S. K. El-Labany & W. M. Moslem & Kh. A. Shnishin.

- **Postgraduate studies** (for Theoretical physics) M.Sc., 2008, Faculty of Science, Assiut University, Egypt.

- **B.Sc. in Physics,** Awarded in June 2006, Faculty of Science, Assiut University, Egypt. Distinction: Excellent with honors (Average: 88.10%)

## 3- SKILLS

**Language Skills**

- Arabic: mother language.
- English: good (read/spoken/written).

**Computer Command in Teaching and Research**

- Operating environment: Windows, Linux (all distributions)
- Hardware Maintenance.
- Programming with Mathematica, MatLab, Fortran.
- Latex (Scientific WorkPlace).
- ICDL.

## 4- AWARDS

- Excellence in Scientific Publication Awards (ESCPA) (2012).

- Assiut University Award for Excellence in Scientific (2007).

- Delta Academy of Science Award for Excellence in Scientific (2006).

- Assiut University Award for Excellence in Scientific (2005).

## 5- EMPLOYMENT HISTORY

- February 2020 until now: (*current occupation/permanent position*) Associate Professor, Department of Physics, Faculty of Science and Arts, Al-Mikhwah, Al-Baha University, KSA.

- July 2017 until February 2020: Assistant Professor, Department of Physics, Faculty of Science and Arts, Al-Mikhwah, Al-Baha University, KSA.

- July 2014 until July 2017: Assistant Professor, Department of Physics, Faculty of Science, Port Said University, Egypt.

- June 2012 until June 2014: Assistant Lecturer, Department of Physics, Faculty of Science, Port Said University, Egypt.

- February 2009 until January 2012: Instructor, Department of Physics, Faculty of Science, Port Said University, Egypt.

- January 2007 until February 2009: Instructor, Department of Physics, Faculty of Science, Assiut University, Egypt.

## 6- BRIEF STATEMENT OF RESEARCH INTERESTS

My research interests are located in the fields of Theoretical Plasma Physics, with emphasis on Nonlinear Dynamics, Waves and Instabilities in Classical and quantum Plasmas.
The main focus points are summarized in the following:

***Mathematical Modeling-Nonlinear Dynamics:***

- Modeling of nonlinear wave propagation in dispersive media: nonlinearity & dispersion laws, forcing & dissipative effects.

- Soliton Theory: stability, effect of perturbations, the family of Korteweg de Vries (KdV) planar and nonplanar equations, Sagdeev potential in planar and nonplanar cases, Kadomtsev-Petviashvili (KP) equation, Zakharov-Kuznetsov (ZK) equation, and nonlinear Schrödinger (NLS) equation.

***Linear and Nonlinear Waves Propagating in Plasmas:***

- **Nonlinear excitations:** solitons, double layers (shocks), Rogue waves, Peakons, Cuspons, and Compactons.

- **Electrostatic excitations in:** electron-positron-ion plasmas, dusty plasma, non-Maxwellian plasma, and Ultracold neutral plasmas.

- **Rotating magnetized plasma:** linear and nonlinear excitations in astrophysical objects.

***Dusty Plasmas (Complex plasmas):***

- **Basic properties:** charging effect and dispersion properties.

- **Electrostatic excitations:** dust-acoustic solitary waves, shocks, and freak waves.

***Applied Mathematics and Numerical Methods:***

- **Finite difference method.**
- **Local discontinuous Galerkin method.**
- **Homotopy perturbation method.**
- **Adomian decomposition method.**

## 7- KEYWORDS

- **Mathematical Physics**: Dynamical systems, nonlinear partial differential equations, reductive perturbation technique, renormalization method, KdV, KP, ZK, and NLS equations.

- **Nonlinear Dynamics:** Coherent structures (solitons), shocks (double layers), Rogue waves, Peakons, Cuspons, and Compactons.

- **Numerical Analysis:** Finite difference method, Local discontinuous Galerkin method, Homotopy perturbation method, Adomian decomposition method.
- **Plasma Physics:** Linear and nonlinear waves and electrostatic in plasma.
- **Dusty Plasmas** *(Complex Plasmas)*: Basic properties, waves, solitons, and shocks.
- **Astrophysics:** Electron-positron-ion classical plasma, Active Galactic Nuclei (AGN), white dwarfs, neutron stars, and interstellar clouds.

## 8- ACADEMIC REFERENCES – COLLABORATIONS

**1. Prof. Dr. Abdul-Majid Wazwaz,**
Department of Mathematics Saint Xavier University Chicago, IL 60655, USA.
Email: wazwaz@sxu.edu

**2. Salah Kamel EL-LABANY, Professor;**
Relation: Supervisor of my MSc and PhD and Research collaborator.
Department of Physics, Faculty of Science – Damietta University, Egypt.
Email: skellabany@hotmail.com

## 9- CITATIONS OF THE PUBLISHED WORK

**Citations:** 1212,
**H-index**: 18,
**i10-index**: 33,
**ISI Web of Knowledge or Scopus**
**Search key**: El-Tantawy SA*.

1. **Researchgate:** https://www.researchgate.net/profile/S_El-Tantawy
2. **Google Scholar:** https://scholar.google.com.eg/citations?user=gEExLpMAAAAJ&hl=en
3. https://sciprofiles.com/publications
4. **Web of Science (ISI):** https://app-webofknowledge-com.sdl.idm.oclc.org/author/record/1249196?lang=en_US
5. **ORCID:** 0000-0002-6724-7361

## 10- REFEREE WORK FOR INTERNATIONAL JOURNALS

1. Physics of plasma.
2. Applied Mathematics and Computation.
3. Communications in Theoretical Physics.
4. Report Physics.
5. New Journal of Physics.
6. Nonlinear Dynamics.
7. Advances in space researches.

8. Astrophysics and Space Science.
9. Physics Letters A.
10. Physica A.
11. Contributions to Plasma Physics.
12. Applied Mathematics and Computation.
13. Journal of Physics A: Mathematical and Theoretical.
14. Journal of Plasma Physics.
15. Chinese Physics B.
16. Physica scripta.
17. IEEE Transactions on Plasma Science.
18. Applied Mathematics and Computation.
19. Physical Review & Research International.
20. Ain Shams Engineering Journal.
21. Journal of King Saud University (Science).
22. Plasma Physics and Controlled Fusion.
23. Journal of Physics B: Atomic, Molecular and Optical Physics.
24. Canadian journal of physics.
25. Acta Mathematica Scientia.
26. Zeitschrift für Naturforschung A - A Journal of Physical Sciences.
27. Waves in Random and Complex Media.
28. Chaos, Solitons & Fractals.
29. Journal of Ocean Engineering and Science.
30. Plasma Science and Technology.
31. Brazilian Journal of Physics.
32. Complexity.
33. Waves in Random and Complex Media.
34. Mathematical Problems in Engineering.
35. Plasma Research Express.
36. Plasma Science and Technology.

37.Journal of Taibah University for Science.

38.IEEE Transactions on Plasma Science.

## 11- REFEREE FOR INTEL COMPANY PROJECTS

Arbitration of projects submitted to Intel International for patent for creators.

## 12- CONFERENCES and WORKSHOPS

1. "The first Workshop in Plasma Physics: Theory and Application"

   23-26 June 2013, Port Said, EGYPT

   **Under the auspices of**

   Port Said University (Egypt) and Alexander von Humboldt Foundation (Germany).

2. "The second Workshop in Plasma Physics: Theory and Application"

   11-14 October 2014, Port Said, EGYPT

   **Under the auspices of**

   Port Said University (Egypt) and Alexander von Humboldt Foundation (Germany).

3. "International Conference for Mathematics, and Applications"

   27 – 29 December 2015, Cairo, Egypt.

4. "International Conference on Mathematics & Statistics & Information Technology"

   20 – 22 December. 2016, Tanta University, Egypt.

5. "Data Visualization with the Wolfram Language"

   21– 23 September 2020, Course Training, WOLFRAME

6. "COVID-19: Reality and Misinformation by John McConnell"

   21 October 2020, Webinar, ELSEVER

7. المؤتمر العلمي الأول لرؤساء ومشرفات الأقسام العلمية

10-12 November 2020, King ABDULAZIZ, KSA

8. "Nature of Time and Time Travel لغز طبيعة الزمن والسفر عبر الزمن"

7 November 2020, University of Diyala, Iraq

## 13- TRAINING COURSES in BAHA UNIVERSITY

| Period | Training course name |
|---|---|
| 2017-10-31 | IGI Global Research and Platform Overview for SDL |
| 2017-11-5 | An Introduction to ProQuest Databases |
| 2017-11-12 | eScienta - Tips to avoid common mistakes researchers make when writing a research article |
| 2017-11-13 | Introduction to ProQuest Ebook Central |
| 2017-11-21 | البحث في مصادر المعلومات العامة- Scopus |
| 2017-11-28 | IGI Global Research and Platform Overview for SDL |
| 2017-12-12 | البحث في مصادر المعلومات العامة- Sage |
| 2018-04-04 | How to publish in CAB Review CABI |
| 2018-04-04 | تحليل البيانات الكمية |
| 2018-04-08 | تطبيقات عملية للتحليل الإحصائي باستخدام Excel |
| 2018-04-09 | المعايير العالمية في تحكيم البحوث العلمية |
| 2018-04-09 | أخلاقيات البحث العلمي |
| 2018-04-09 | آلية البحث في موسوعة Britannica |
| 2018-04-09 | مهارات الأجهزة الذكية والتطبيقات في البحث |
| 2018-04-10 | مهارات استخدام برنامج الوورد في كتابة البحث |
| 2018-04-11 | مهارات استخدام محركات أوعية البيانات |
| 2018-04-16 | مهارات النشر في المجلات العربية والأجنبية |
| 2018-04-17 | الاستعداد للاختبار الشامل |

| | |
|---|---|
| | |
| الاستعداد لمناقشة الرسالة | 2018-04-18 |
| كيفية استخدام الطرق الإحصائية لاستخلاص النتائج من بين الأرقام | 2018-05-01 |
| أساسيات إعداد خطة البحث | 2019-01-26 |
| بناء الأفكار البحثية | 2019-01-27 |
| سمات الفكرة البحثية الجيدة | 2019-01-31 |
| الكتابة الأكاديمية والنشر العلمي | 2019-01-31 |
| سلالم التقدير كأداة لجمع البيانات في الأبحاث العلمية | 2019-02-03 |
| استخدام الورد في كتابة البحث | 2019-02-12 |
| المهارات الاحصائية للباحث | 2019-02-18 |
| معايير قبول الأبحاث للنشر العلمي | 2019-02-19 |
| تصاميم الأدوات المختلطة في بحوث الدراسات العليا | 2019-03-06 |
| التدريب على استخدام قواعد "معرفة" الرقمية | 2020-10-28 |

## 14- INVITATIONS

# Scientific invitations to Germany

1- *2014: Invited PhD student (visit research) funded by Alexander von Humboldt Foundation, Bonn-Germany.***1-31 June 2014**

2- *2014: Invited assistant professor (visit research) funded by Alexander von Humboldt Foundation, Bonn-Germany.***1-30 November 2014**

3- *2015: Invited assistant professor (visit research) funded by Alexander von Humboldt Foundation, Bonn-Germany.***30 January-8 February 2015**

## 15- ELSEVIER CERTIFICATES of PUBLICATION

1. *Certificate of publication for the article titled:* **"Electron–positron–ion plasma with kappa distribution: Ion acoustic soliton propagation"**
2. *Certificate of publication for the article titled:* **"Ion-acoustic waves in ultracold neutral plasmas: modulational instability and dissipative rogue waves"**
3. *Certificate of publication for the article titled*: **" Cylindrical freak waves in a non-Maxwellian dusty bulk-sheath plasma: An approximate solution for the cylindrical nonlinear Schrödinger equation "**
4. *Certificate of publication for the article titled*: **" Impact of electron trapping in degenerate quantum plasma on the ion-acoustic breathers and super freak waves"**
5. *Certificate of publication for the article titled*: **" Nonlinear Dynamics of solitons collisions in electronegative plasmas: The Phase shifts of the planar KdV- and mKdV-solitons collisions"**
6. *Certificate of publication for the article titled*: **"On the numerical solution of nonplanar dust-acoustic super rogue waves in a strongly coupled dusty plasma"**
7. *Certificate of publication for the article titled*: **"Optical Gaussons for nonlinear logarithmic Schrödinger equations via the variational iteration method"**
8. *Certificate of publication for the article titled*: **"Nonplanar ion-acoustic solitons collision in $Xe^{+}$-$F^{-}$-$SF_6^{-}$ and $Ar^{+}$-$F^{-}$-$SF_6^{-}$ plasmas"**

## 16- PUBLICATIONS IN INTERNATIONAL JOURNALS

(*in reverse chronological order*)

**Year 2010**

1. E. I. El-Awady, **S. A. El-Tantawy**, W. M. Moslem, P. K. Shukla, *Electron–positron–ion plasma with kappa distribution: Ion acoustic soliton propagation*, **Physics Letters A**, 374, 3216, 2010, Elsevier Publisher, Holland, English.

**Year 2011**

2. S. K. El-Labany, W.M. Moslem, Kh. A. Shnishin, and **S. A. El-Tantawy**, *Plasma with two negative ions and immobile dust particles: planar and non-planar ion-acoustic wave propagation*, **The European Physical Journal D**, 61, 409, 2011, Springer Publisher, Germany, English.

3. S. K. El-Labany, W. M. Moslem, Kh. A. Shnishin, **S. A. El-Tantawy**, and P. K. Shukla, *Fully nonlinear solitary waves in a dusty electronegative multispecies plasmas*, **Physics of Plasmas**, 18, 042306, 2011, American Institute of Physics, USA, English.

4. **S. A. El-Tantawy**, N. A. El-Bedwehy, and W. M. Moslem, *Nonlinear ion-acoustic structures in dusty plasma with superthermal electrons and positrons*, **Physics of Plasmas**, 18, 052113, 2011, American Institute of Physics, USA, English.

5. **S. A. El-Tantawy** and W. M. Moslem, *Arbitrary amplitude ion-acoustic waves in a multicomponent plasma with superthermal species*, **Physics of Plasmas**, 18, 112105, 2011, American Institute of Physics, USA, English.

**Year 2012**

6. **S. A. El-Tantawy** and W. M. Moslem, *Nonlinear electrostatic excitations in electron-depleted electronegative dusty plasma with two-negative ion species*, **Astrophysics and Space Science**, 337, 209, 2012, Springer Publisher, Germany, English.
7. **S. A. El-Tantawy**, M. Tribeche, and W. M. Moslem, *Nonlinear structures in a nonextensive electron-positron-ion magnetoplasma*, **Physics of Plasmas**, 19, 032104, 2012, American Institute of Physics, USA, English.

8. **S. A. El-Tantawy,** N. A. El-Bedwehy, S. Khan, S. Ali, and W. M. Moslem, *Arbitrary amplitude ion-acoustic solitary waves in superthermal electron-positron-ion magnetoplasma*, **Astrophysics and Space Science**, 342, 425, 2012, Springer Publisher, Germany, English.

**Year 2013**

9. **S. A. El-Tantawy**, N. A. El-Bedwehy, H. N. Abd El-Razek, and S. Mahmood, *Large amplitude solitary waves in a warm magnetoplasma with kappa distributed electrons*, **Physics of Plasmas**, 20, 022115, 2013, American Institute of Physics, USA, English.

10. **S. A. El-Tantawy**, N. A. El-Bedwehy, and S. K. El-Labany, *Ion-acoustic super rogue waves in ultracold neutral plasmas with nonthermal electrons*, **Physics of Plasmas**, 20, 072102 , 2013, American Institute of Physics, USA, English.

11. S. Ali Shan, **S. A. El-Tantawy**, and W. M. Moslem, *On the fully nonlinear acoustic waves in a plasma with positrons beam impact and superthermal electrons*, **Physics of Plasmas**, 20, 082104, 2013, American Institute of Physics, USA, English.

12. **S. A. El-Tantawy**, W. M. Moslem, R. Sabry, S. K. El-Labany, and M. El-Metwally, *Nonplanar solitons collision in ultracold neutral plasmas*, **Physics of Plasmas**, 20, 092126, 2013, American Institute of Physics, USA, English.

13. F. Bencheriet, **S. A. El-Tantawy**, W. M. Moslem, and M. Djebli, *Electrostatic rogue waves in a plasma with a relativistic electron beam*, **Journal of Plasma Physics**, 79, 847, 2013, Cambridge University Press, UK, English.

14. **S. A. El-Tantawy**, N. A. El-Bedwehy, and W. M. Moslem, *Super rogue waves in ultracold neutral nonextensive plasmas*, **Journal of Plasma Physics**, 79, 1049, 2013, Cambridge University Press, UK, English.

**Year 2014**

15. **S. A. El-Tantawy**, W. M. Moslem, R. Sabry, S. K. El-Labany, M. El-Metwally, and R. Schlickeiser, *Head-on collision of ion-acoustic solitons in an ultracold neutral plasma*, **Astrophysics and Space Science**, 350, 175, 2014, Institute of Physics Publisher, UK, English.

16. **S. A. El-Tantawy** and W. M. Moslem, *Nonlinear structures of the Korteweg-de Vries and modified Korteweg-de Vries equations in non-Maxwellian electron-positron-ion plasma: Solitons collision and rogue waves*, **Physics of Plasmas**, 21, 052112, 2014, American Institute of Physics, USA, English.

**Year 2015**

17. **S. A. El-Tantawy**, W. M. Moslem, and R. Schlickeiser, *Ion-acoustic dark solitons collision in an ultracold neutral plasma*, **Physica Scripta**, 90, 085606, 2015, Institute of Physics Publisher, UK, English.

18. **S. A. El-Tantawy**, A. M. Wazwaz, and R. Schlickeiser, *Solitons collision and freak waves in a plasma with Cairns-Tsallis particle distributions*, **Plasma Physics and Controlled Fusion**, 57, 125012, 2015, Institute of Physics Publisher, UK, English.

19. **S. A. El-Tantawy**, E. I. El-Awady, M. Tribeche, *On the rogue waves propagation in non-Maxwellian complex space plasmas*, **Physics of Plasmas**, 22, 113705, 2015, American Institute of Physics, USA, English.

20. **S. A. El-Tantawy**, E. I. El-Awady, R. Schlickeiser, *Freak waves in a plasma having Cairns particles*, **Astrophysics and Space Science**, 360, 49, 2015, Institute of Physics Publisher, UK, English.

**Year 2016**

21. A. M. Wazwaz and **S. A. El-Tantawy**, *A new integrable (3+1)-dimensional KdV-like model with its multiple soliton solutions*, **Nonlinear Dynamics**, 83 (3), 1529, 2016, Kluwer Academic Publishers, Netherlands, English.

22. A. M. Wazwaz and **S. A. El-Tantawy**, *A new (3+1)-dimensional generalized Kadomtsev-Petviashvili equation*, **Nonlinear Dynamics**, 84 (2), 1107, 2016, Kluwer Academic Publishers, Netherlands, English.

23. **S. A. El-Tantawy** and P. Carbonaro, *Nonplanar ion-acoustic solitons collision in $Xe^{+}$-$F^{-}$-$SF_6^{-}$ and $Ar^{+}$-$F^{-}$-$SF_6^{-}$ plasmas*, **Physics Letters A**, 380, 1627, 2016, Elsevier Publisher, Holland, English.

24. **S. A. El-Tantawy**, *Rogue waves in electronegative space plasmas: The link between the family of KdV equations and the nonlinear Schrödinger equation*, **Astrophysics and Space Science**, 361, 164, 2016, Institute of Physics Publisher, UK, English.

25. S. Ali Shan and **S. A. El-Tantawy**, *The impact of positrons beam on the propagation of super freak waves in electron-positron-ion plasmas*, **Physics of Plasmas**, 23, 072112, 2016, American Institute of Physics, USA, English.

26. **S. A. El-Tantawy**, *Effect of ion viscosity on dust ion-acoustic shock waves in a nonextensive magnetoplasma*, **Astrophysics and Space Science**, 361, 249, 2016, Institute of Physics Publisher, UK, English.

27. A. M. Wazwaz and **S. A. El-Tantawy**, *Gaussian soliton solutions to a variety of nonlinear logarithmic Schrödinger equation*, **Journal of Electromagnetic Waves and Applications**, 30, 1909, 2016, Taylor and Francis Ltd logo.

28. **S. A. El-Tantawy**, *Nonlinear dynamics of soliton collisions in electronegative plasmas: The phase shifts of the planar KdV- and mkdV-soliton collisions*, **Chaos, Solitons and Fractals**, 93, 162, 2016, Elsevier Publisher, UK, English.

**Year 2017**

29. **S. A. El-Tantawy**, S. Ali, R. Maroof, A. M. Wazwaz, and S. K. El-Labany, *On the super freak waves in multicomponent plasmas having two-negative ions: $Xe^{+}$-$F^{-}$-$SF_6^{-}$ and $Ar^{+}$-$F^{-}$-$SF_6^{-}$ plasmas*, **Indian Journal of Physics**, 91 (8), 939, 2017, Springer, India.

30. **S. A. El-Tantawy**, A. M. Wazwaz, S. Ali Shan, *On the nonlinear dynamics of breather waves in electronegative plasmas with Maxwellian negative ions*, **Physics of Plasmas**, 24, 022105, 2017, American Institute of Physics, USA, English.

31. **S. A. El-Tantawy**, *Ion-acoustic waves in ultracold neutral plasmas: modulational instability and dissipative rogue waves*, **Physics Letters A**, 381, 787, 2017, Elsevier Publisher, Netherlands, English.

32. **S. A. El-Tantawy**, A. M. Wazwaz, Ata-ur-Rahman, *Three-dimensional modulational instability of the electrostatic waves in e-p-i magnetoplasmas having superthermal particles*, **Physics of Plasmas**, 24, 022126, 2017, American Institute of Physics, USA, English

33. A. M. Wazwaz, **S. A. El-Tantawy**, *New (3+1)-dimensional equations of Burgers type and Sharma–Tasso–Olver type: multiple-soliton solutions*, **Nonlinear Dynamics**, 87, 2457, 2017, Kluwer Academic Publishers, Netherlands, English.

34. **S. A. El-Tantawy**, Tarek Aboelenen, *Simulation study of planar and nonplanar super rogue waves in an electronegative plasma: Local discontinuous Galerkin method*, **Physics of Plasmas**, 24, 052118, 2017, American Institute of Physics, USA, English.

35. A. M. Wazwaz, **S. A. El-Tantawy**, *Solving the (3+1)-dimensional KP--Boussinesq equation and BKP--Boussinesq equation by the simplified Hirota's method*, **Nonlinear Dynamics**, 88 (4), 3017, 2017, Kluwer Academic Publishers, Netherlands, English.

36. **S. A. El-Tantawy**, A. El-Gendy, S. Ismail, *Cylindrical freak waves in a non-Maxwellian dusty bulk-sheath plasma: An approximate solution for the cylindrical nonlinear Schrödinger equation*, **Physics Letters A**, 381, 3465, 2017, Elsevier Publisher, Holland, English.

**Year 2018**

37. **S. A. El-Tantawy**, E. I. El-Awady, *Cylindrical and spherical Akhmediev breather and freak waves in ultracold neutral plasmas*, **Physics of Plasmas**, 25, 012121, 2018, American Institute of Physics, USA, English.

38. **S. A. El-Tantawy**, S. Ali Shan, N. Akhtar, A.T. Elgendy, *Impact of electron trapping in degenerate quantum plasma on the ion-acoustic breathers and super freak waves*, **Chaos, Solitons and Fractals**, 113, 356, 2018, Elsevier Publisher, UK, English.

39. **S. A. El-Tantawy,** A. M. Wazwaz, *Anatomy of modified Korteweg--de Vries equation for studying the modulated envelope structures in non-Maxwellian dusty plasmas: Freak waves and dark soliton collisions*, **Physics of Plasmas**, 25, 092105, 2018, American Institute of Physics, USA, English.

40. **S. A. El-Tantawy,** A. M. Wazwaz, *Comment on "Soliton solutions and chaotic motion of the extended Zakharov-Kuznetsov equations in a magnetized two-ion-temperature dusty plasma" [Phys. Plasmas 21, 073709 (2014)]*, **Physics of Plasmas**, 25, 104701, 2018, American Institute of Physics, USA, English.

## Year 2019

41. N. Akhtar, **S. A. El-Tantawy**, S. Mahmood, A. M. Wazwaz, Hafeez Ur-Rehman, Aman-ur-Rahman, *On the dynamics of dust-acoustic and dust-cyclotron freak waves in a magnetized dusty plasma*, **Romanian Reports in Physics**, 71, 403, 2019, Editura Academiei Romane, Romania, English.

42. E. I. El-Awady, **S. A. El-Tantawy**, A. Abdikian, *Dissipative Cylindrical Magnetosonic Solitary Waves in a Magnetized Quantum Dusty Plasma*, **Romanian Reports in Physics**, 71, 105, 2019, Editura Academiei Romane, Romania, English.

43. A. M. Wazwaz,, **S. A. El-Tantawy,** *Optical Gaussons for nonlinear logarithmic Schrödinger equations via the variational iteration method*, **Optik**, 180, 414, 2019, Elsevier, Netherlands.

44. **S. A. El-Tantawy**, Tarek Aboelenen, Sherif M. E. Ismaeel, *Local discontinuous Galerkin method for modeling the nonplanar structures (solitons and shocks) in an electronegative plasma*, **Physics of Plasmas**, 26, 022115, 2019, American Institute of Physics, USA, English.

45. Salemah A. Almutalk, **S. A. El-Tantawy**, E. I. El-Awady, S. K. El-Labany, *On the numerical solution of nonplanar dust-acoustic super rogue waves in a strongly coupled dusty plasma*, **Physics Letters A**, 383, 1937 2019, Elsevier Publisher, Holland, English.

46. Salemah A. Almutalk, **S. A. El-Tantawy**, Shaukat Ali Shan, Sherif M. E. Ismaeel, *Multidimensional freak waves in electron depleted dusty magnetoplasmas having superthermal ion with two temperatures*, **The European Physical Journal Plus,** 134, 513, 2019, Springer Publisher, USA, English.

47. M. Irfan, S. Ali, **S. A. El-Tantawy**, and Sherif M. E. Ismaeel, *Three dimensional ion-acoustic rogons in quantized anisotropic magnetoplasmas with trapped/untrapped electrons*, **Chaos: An Interdisciplinary Journal of**

**Nonlinear Science** 29, 103133, 2019, AIP, USA.

48. **S. A. El-Tantawy**, Alvaro H. Salas, Ma'mon Abu Hammad, Shreif M. E. Ismaeel, D. M. Moustafa, E. I. El-Awady, *Impact of dust kinematic viscosity on the breathers and rogue waves in a complex plasma having kappa distributed particles,* **Waves in Random and Complex Media,** DOI: 10.1080/17455030.2019.1698790, 2019, UK Limited, trading as Taylor & Francis Group.

**Year 2020**

49. Ata ur- Rahman, Muhammad Khalid, S. N. Naeem, E. A. Elghmaz, **S. A. El-Tantawy,** L. S. El-Sherif, *Periodic and localized structures in a degenerate Thomas-Fermi plasma,* **Physics Letters A,** 384, 126257, 2020, Elsevier, Netherlands.

50. Bothayna S. Kashkari, **S. A. El-Tantawy**, Alvaro H. Salas, and L. S. El-Sherif, *Homotopy perturbation method for studying dissipative nonplanar solitons in an electronegative complex plasma,* **Chaos, Solitons and Fractals**, 130, 109457, 2020, Elsevier, UK.

51. Muhammad Khalid and **S. A. El-Tantawy,** *Oblique ion acoustic excitations in a magnetoplasma having κ -deformed Kaniadakis distributed electrons*, **Astrophysics and Space** Science, 365 (4), 1, 2020, Springer.

52. N. H. Aljahdaly and **S. A. El-Tantawy,** *Simulation study on nonlinear structures in nonlinear dispersive media*, **Chaos: An Interdisciplinary Journal of Nonlinear Science** 30 (5), 053117, 2020, AIP, USA.

53. M. A. Hammad, A. H Salas, and **S. A El-Tantawy**, *New method for solving strong conservative odd parity nonlinear oscillators: Applications to plasma physics and rigid rotator*, **AIP Advances** 10 (8), 085001, AIP, USA.

54. A. H Salas, **S. A El-Tantawy**, and AAAR Youssef, *New solutions for chirped optical solitons related to Kaup-Newell equation: Application to plasma physics*, **Optik** 218, 165203, 2020 Elsevier Publisher, Holland, English.

55. A. H Salas, **S. A El-Tantawy,** J. E. Castillo H, *The Hybrid Finite Difference and Moving Boundary Methods for Solving a Linear Damped Nonlinear Schrödinger Equation to Model Rogue Waves and Breathers in Plasma Physics*, **Mathematical Problems in Engineering,** Volume 2020 |Article ID 6874870 | https://doi.org/10.1155/2020/6874870, Hindawi.

56. A. H Salas and **S. A El-Tantawy,** *Semi-analytical solution and moving boundary method to a damped harmonic oscillator with higher-order nonlinearities and its application to plasma physics*, **The European Physical Journal Plus** 135 (10), 1-17, 2020, Springer.

57. **S. A El-Tantawy**, M. H. Alshehri, F. Z. Duraihem, L. S. El-Sherif, *Dark soliton collisions and method of lines approach for modelling freak waves in a positron beam plasma having superthermal electrons*, **Results in Physics,** 19, 103452, 2020, Elsevier, UK.

**Year 2021**

58. Alvaro H. Salas, **S. A. El-Tantawy,** and Noufe H. Aljahdaly, *An exact solution to the quadratic damping strong nonlinearity Duffng oscillator*, **Mathematical Problems in Engineering,** 2021, Article ID 8875589, 2021.

59. Bothayna S Kashkari and **S. A. El-Tantawy,** *Homotopy perturbation method for modeling electrostatic structures in collisional plasmas*, **The European Physical Journal Plus**, 136, 1, 2021.

60. **S. A. El-Tantawy** and Alvaro H. Salas, *On the analytical and numerical solutions to the linear damped NLSE for modeling dissipative freak waves and breathers in nonlinear and dispersive mediums: An application to a pair-ion plasma*, **Frontiers in Physics**, doi: 10.3389/fphy.2021.580224

61. **S. A. El-Tantawy,** Alvaro H. Salas, and M. R. Alharthi, *A new approach for modelling the damped Helmholtz oscillator: Applications to plasma physics and electronic circuits*, **communications in theoretical physics,** 73 (3), 035501, 2021.

62. **S. A. El-Tantawy,** Alvaro H. Salas, and M. R. Alharthi, *On the analytical solutions of the constant forced damping Duffing equation and its applications*, **Mathematical Problems in Engineering,** 2021, 6678102, 2021.

63. Noufe H. Aljahdaly and **S. A. El-Tantawy,** *On the Multistage Differential Transformation Method for Analyzing Damping Duffing Oscillator and Its Applications to Plasma Physics* **Mathematics** 9, 432, 2021.

64. Salemah A. Almutalk and **S. A. El-Tantawy**, *On the approximate solutions of a damped nonplanar modified Korteweg–de Vries equation for studying dissipative cylindrical and spherical solitons in plasmas*, **Results in Physics**, 23, 104034, 2021.

65. **S. A. El-Tantawy,** Alvaro H. Salas, and M. R. Alharthi, *On the analytical and numerical solutions of the damped nonplanar Shamel Korteweg-de-Vries Burgers equation for modelling nonlinear structures in strongly coupled dusty plasmas: Multistage homotopy perturbation method*, **Physics of fluid,** 33, 043106, 2021.

66. **S. A. El-Tantawy,** Alvaro H. Salas, and M. R. Alharthi, *Novel analytical cnoidal and solitary wave solutions of the Extended Kawahara equation*, **Chaos, Solitons and Fractals**, Accepted, 2021, Elsevier, UK.

67. **S. A. El-Tantawy et al**, *Effect of higher-order contributions on the propagation of ion-acoustic solitons in multi-ions plasmas having two-positive ion and two-negative ion: ($Ar^{+}$-$SF_5^{+}$-$F^{-}$-$SF_5^{-}$)*, work in progress.

68. **S. A. El-Tantawy,** Ali Shan, Aman-ur-Rehman, Touqeer, *Modulational instability of ion-acoustic waves and breathers in a plasma with warm ions and Cairns-Tsallis distributed electrons*, work in progress.

69. **S. A. El-Tantawy** et al, *Electrostatic soliton interaction in a non-Maxwellian dusty plasma: Korteweg-de Vries and modified Korteweg-de Vries soliton collisions*, work in progress.

- **My page on Google scholar**

https://scholar.google.com.eg/citations?user=gEExLpMAAAAJ&hl=en