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Curriculum Vitae

and

Research Statement

Last update: 5 Jan 2021

Curriculum Vitae

MOHAMED A. ELATTAFI,
Dr. at Physics Department - Faculty OF Science-Mansoura University- Egypt.

1. PERSONAL DATA

Full Name: Mohamed Awad Youssef Elattafi
Citizenship: Egyptian (Egypt).
Born: 10st of November 1966 in Gogar-Talkha, El-Dakahlia, Egypt.
Permanent address (Permanent Position – Egypt):
Physics Department,
Faculty of Science,
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Mansoura 35516, Egypt.
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Scopus ID: 55455725400
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Mendeley Profile (Based on Scopus): https://www.scopus.com/authid/detail.uri?authorId=55455725400
Google Scholar Profile: https://scholar.google.com/citations?user=SWmTPCQAAAAJ&hl=ar
Researchgate profile: https://www.researchgate.net/profile/Mohamed_Elattafi2

2. STUDIES

(In reverse chronological order)

– PhD in Theoretical Physics.
Awarded in 21 June, 2017, Faculty of Science, Damietta University, New Damietta, Damietta, Egypt.

Field: Theoretical Plasma Physics.
Thesis: "Study of Linear and Nonlinear Dust Acoustic Waves in Saturn F-rings".

Thesis supervision: S. K. El-Labany & M. Sleim & N. Elbedwehy.& H. Gomaa Abdelwahed

– M.Sc. in Theoretical Physics.

Awarded in September 2013, Faculty of Science, Mansoura University, Egypt.
Field: Theoretical Plasma Physics.
Thesis: "On the Solutions of Nonlinear Equations in Two Types Dusty Plasma".
Thesis supervision: S.A. Elwakil & A. Elgarayhi & A. A. Mahmoud

– B.Sc. in Physics

Awarded in May 1991, Faculty of Science, Mansoura University, Mansoura, Egypt.

3. SKILLS

§3.1. Language Skills

– Arabic: Mother Language
– English: Very Good (read/spoken/written)
– Italian: Basic knowledge (Level 2)

§3.2. Computer Skills

- Operating environment: Windows & Linux.
- Symbolic and numerical computation: Mathematica.
- Word/text processing software, e.g. MS Word.
- MS Office Tools.
- ICDL V5 from 1-3-2013 to 1-5-2013.
- EXECL from 4-7-2010 to 21-7-2010.
- Training course in computer in (windows 2000- Microsoft office 2000- Front Page2000- Photo Impact) from 1-4 -2001 to 31-5-2001.
- A training course in computer maintenance and network design at the Scientific Research Center at Mansoura University from 1-1-1997 to 1-5-1997.

§4. PROFESSIONAL EXPERIENCE / EMPLOYMENT

(In reverse chronological order)

§4.1. The course of preparation of the university teacher at Mansoura University (172) in the period from 17/12/2017 to 20/12/2017. The following courses include: credit hours and the importance of academic guidance - skills of explanation and diversification of stimuli and reinforcement and the skill of formulating and asking questions and reinforcement and its role in managing attitudes Education, interaction and communication) - the use of technology in teaching - different methods of evaluation - presentation of scientific research - the rights and duties of faculty members and intellectual property rights - Google services for researchers - acquiring skills to establish a true relationship between the faculty member and students.

§4.2. Intensive Training Course on the Nuclear Magnetic Resonance System(NMR) by the Japanese Expert Kosaka for JEOL, the supplier of the device, from 12-16 June 2017 Spectrometer Brand: JEOL, Spectrometer Type: ECA, Spectrometer Field: 500, Workstation: Intel PC, Operating system: Windows, Operating system version: 7 64 bit,

Delta Type: Full Machine Control, Spectrometer S/N: NM1039009130013.

§4.3. Use of radiation sources / Materials and radiation protection against ionizing g radiation (Graduate) – Organized by the Egyptian Atomic Energy Authority –Cairo Egypt. For 120 Training Hours Starting from 4/2/2017.

§4.4. Training course in human development (CARRER PASS) from 15-6-2009 to 15-4-2010.

§4.5. Training course in Occupational Health and Safety at the General Administration for Community Service and Environmental Development Affairs, Mansoura University from 5 to 9-12-2009.

§4.6. A training course in the field of fiberglass, held in the Department of Chemistry, Faculty of Science, Mansoura University from 12-11-1994 to 17-11-1994.

§4.7. Teaching mathematical physics as well as computational physics for undergraduate students in Physics department during summer training from 4/7/2017 until the end of summer training.

§4.8. Supervising the summer training for students of the physics department using mathematical mathematics and mathematics programs (Mathematica - Maple- latex) for undergraduate students during the summer training from 4/7/2017 until the end of summer semester.

§4.9. Perform the analysis of solid and liquid samples on the NMR device.

§4.10. Training and teaching computer technology and internet for students, staff and faculty members.

§4.11. Maintenance and operation of laboratory equipment students in Physics Department – Faculty of Science - Mansoura University.

§4.12. Maintenance of computers in the department related to the international network of information.

§4.13. Management of the conference hall and classrooms in the College of maintenance of computers for the classrooms and the operation of projectors.

§4.14. Effective participation in the implementation of the project of continuous development and qualification for accreditation (CIQAP) in the period from March 2008 to December 2010 at the Faculty of Science Mansoura University where I was:

b) A member of the implementation team for the activities of the resource standard.
c) Member of the team to implement the standard activities of teaching and Learning and Physical facilities.

§4.15. Attendance of Seminars:

1- Total quality.
2 - How to manage crises.
3. The evacuation scenario.
4- Self-assessment and qualification for accreditation.

§4.16. November 2016 till now: (current occupation/permanent position) Responsible for solid State Nuclear Magnetic Resonance (NMR) analysis at Mansoura University.

§4.17. July 2012 till November 2016: (current occupation/permanent position) First Specialist,

Department of Physics, Faculty of Science, Mansoura University, Egypt.

§4.18. June 2005 till June 2012: (current occupation/permanent position) Second Specialist, Department of Physics, Faculty of Science, Mansoura University, Egypt.

§4.19. February 1996 till January 2005: (current occupation/permanent position) Third Specialist, Department of Physics, Faculty of Science, Mansoura University, Egypt.

5. CONFERENCES / WORKSHOPS / SCHOOLS / COURSES

(In reverse chronological order)

2020: 4th Online International Summer School on the Physics of Plasma-Surface Interactions, July 13–16, 2020, Moscow].

-*2019:* 25- 14**th** International Conference on Chemistry and its Role in Development ICCRD'14 Mansoura-Hurghada 25-29 March 2019].

–2019: Co-organizer of the *4th* Spring Plasma School at Port Said (10-13 March), Port Said, Egypt.

–2018: Co-organizer of the *3rd* Spring Plasma School at Port Said (11-14 March), Port Said, Egypt.

–2017: Co-organizer of the *2nd* Spring Plasma School at Port Said (3-6 April), Port Said, Egypt.

–2017: Participated in the *3rd* Student Conference in Physics (20 April), Port Said, Egypt.

–2016: Participated in the *2nd Student Conference in Physics* (31 July), Port Said, Egypt.

–2016: Participated in the *1st* Spring Plasma School at Port Said (27-29 April), Port Said, and Egypt.
–2016: Co-organizer of the *Scientific Forum of Challenging in Physics and Energy* (13-15 April), Mansoura University, Egypt.
–2014: Participated in the *2nd Workshop in Plasma Physics: Theory and Application* (11-14 October), Port Said, Egypt.
–2013: Participated in the *1st Workshop in Plasma Physics: Theory and Application* (23-26 June), Port Said, Egypt.
-2003: Summer School on Particle Physics | (SMR 1508) in collaboration with the International School for Advanced Studies (SISSA) and the Italian Institute for Nuclear Physics (INFN). Starts 16 Jun 2003 Ends 4 Jul 2003 Europe/Rome Trieste – Italy.

6. RESEARCH ACTIVITY SUPERVISION, COLLABORATIONS, FUNDING PROJECTS

§6.1 Team leadership & supervision

– Scientific collaborations with different teams at Egypt like the Damietta University, Mansoura University. And Port Said University

7. 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 Plasmas.
The main focus points are summarized in the following:

§7.1 ***Mathematical Modeling & Nonlinear Dynamics:***
– Modeling of nonlinear wave propagation in dispersive media: nonlinearity & dispersion laws, forcing & dissipative effects.

– Soliton Theory: stability, effect of perturbations, Korteweg de Vries (KdV) equation, Kadomtsev-Petviashvili (KP) equation, Zakharov-Kuznetsov (ZK) equation, nonlinear Schrödinger (NLS) equation, and associated partial differential equations.
– Higher order perturbations: Higher-order KdV and ZK equations.
– Renormalization method: removing secular term from the higher-order KdV and ZK equations.
– Direct *k*-expansion method: instability of ZK equation. Head-on collision of ion-acoustic solitary waves.
– Different geometries: Cartesian, Spherical and Cylindrical geometries.

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

– Nonlinear excitations: solitons, double layers (shock like soliton), shocks, blowup/explosive, vortices, modulated envelope wave packets, instabilities, ponderomotive coupling effects.

– Plasma waves: ion-acoustic waves, dust-ion-acoustic waves, dust-acoustic waves, Alfven waves, whistler waves, drift waves.

– Rogue or Freak waves in astrophysics, surface plasma waves.

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

– Basic properties: charging effect, dispersion properties, external magnetic field, two-ion temperature, ion beam, ion streaming, and dust-size distribution.

– Electrostatic excitations: dust-acoustic solitary waves, dust-ion-acoustic solitary waves and shocks, Instabilities.

§7.4 ***Computational Physics:***

– Basic properties: is the study and implementation of numerical analysis to solve problems in physics for which a quantitative theory already exists., computational physics was the first application of modern computers in science, and is now a subset of computational science.

§7.5: Keywords
–*Mathematical Physics*: Dynamical systems, nonlinear partial differential equations, reductive perturbation technique, renormalization method, direct *k*-expansion method, KdV, KP, ZK, and NLS equations.
– *Nonlinear Dynamics*: Coherent structures (solitons), shocks (double layers), vortices, explosive (blowup), envelope solitons, surface waves, and rogue waves, Computational Physics.
– *Dusty Plasmas (Complex Plasmas)*: Basic properties, waves, solitons, shocks, stability, dust size distribution, charging of dust grains, strongly coupled effect, and polarization effect.

8. ACADEMIC REFERENCES

§8.1 Department of Physics, Faculty of Science Mansoura University Mansoura, Egypt.

S.A. Elwakil, Professor**;**

- Relation: Supervisor of my MSc and Research collaborator.
- Department of Physics, Faculty of Science – Mansoura University, Mansoura, Egypt.
- Email: elwakil@mans.edu.eg
- https://scholar.google.com/citations?user=f0JYghgAAAAJ&hl=ar

§8.2 Department of Physics, Faculty of Science –Damietta University, Damietta, Egypt.

- Relation: Supervisor of my PhD and Research collaborator.
- Department of Physics, Faculty of Science –Damietta University, Damietta, Egypt.
- Tel. +20 50 223 1658 (home); +20 1007340911 (mobile) Fax. +20 57 240 3866
- Email: skellabany@hotmail.com
- https://scholar.google.com/citations?user=jVPjVrIAAAAJ&hl=ar https://www.researchgate.net/profile/Salah_El-Labany?_sg=wdbp5i3mrWgF62oak8Q4TU8NaojFITuslUD0yD4zZ9PkvGA2YrF2YOQTSrQtZpvv8eyME7LEvWItX1YySdCly6lgFcPC1ZN_

§8.3 Department of Physics, Faculty of Science Mansoura University Mansoura, Egypt.

Hesham Gomaa Mohammed Abdelwahed. Associated Prof.: (Head of Physics Department Prince Sattam bin abdul Aziz University).

- Relation: Supervisor of my PhD and Research collaborator.
- Tel:00966542096505 -00966599047212
- E-mail : h.abdelwahed@psau.edu.sa hgomaa_eg@yahoo.com hgomaa_eg@mans.edu.eg
- https://scholar.google.com.eg/citations?hl=en&user=eYfUgWsAAAAJ&view_op=list_works&sortby=pubdate
- https://www.researchgate.net/profile/Hesham_Abdelwahed

§8.4 Department of Physics, Faculty of Science, Port Said University (Egypt), Port Said, EGYPT.

Waleed M. MOSLEM, Professor;

- Relation: Research collaborator.
- Department of Physics, Faculty of Science, Port Said University (Egypt), Port Said, EGYPT.

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Scopus ID: 6602434321
ORCID: 0000-0002-5540-5756
Mendeley Profile (Based on Scopus): https://www.mendeley.com/profiles/waleed-m-moslem
Google Scholar Profile: https://scholar.google.com.eg/citations?user=3nYp_3QAAAAJ&hl=en
Researchgate profile: https://www.researchgate.net/profile/Waleed_Moslem

9. CITATIONS OF THE PUBLISHED WORK

§9.1 Citations & H-index

Search key: M. A. El-Attafi

Database	Clarivate Analysis (Thomson Reut.)	Scopus	Google Scholar
Total Citation	22	22	36
H-index	3	3	3
i10-index	---	---	1

§9.2 Statistics

No	Journal Title	No. of Papers Published in Journal	Impact Factor for Journal	Sum of Impact Factor
1	Astrophysics and Space Science	3	2.401	

10. PUBLICATIONS IN JOURNALS

§10.1 REFEREED INTERNATIONAL JOURNALS

Year 2013

1- S.A. Elwakil, A. Elgarayhi, E.K. El-Shewy, A.A. Mahmoud, M.A. El-Attafi, Effect of nonthermality of ions on the nature of dust acoustic waves in two temperatures charged dusty grains. Astrophysics and Space Science.(2013) 343 (2), 661-666. DOI 10.1007/s10509-012-1288-y

Year 2015

2- M.M. Selim, H.G. Abdelwahed, M.A. El-Attafi. Nonlinear dust acoustic rogue waves in a two temperature charged dusty grains plasma. Astrophysics and Space Science. (2015) 359:25 DOI 10.1007/s10509-015-2475-4

Year 2016

3- N.A. El-Bedwehy1 · M.A. El-Attafi2 · S.K. El-Labany2. Three dimensional cylindrical Kadomtsev Petviashvili equation in two temperature charged dusty plasma. Astrophysics and Space Science. (2016) 361:299 DOI 10.1007/s10509-016-2887-9.

Year 2019

4-· M.A. El-Attafi. Specific charges effects on the fluid energy. International Journal of New Horizons in

Physics. (2019) Ref: IJNHP042619H

§10.2 as Papers in Conference,

Year 2019

5- Paper Number: 43

Paper Title: Effect of vortex electron distribution on the nature of dust acoustic waves in two temperatures charged dusty grains.

Authors: M. A. El-Attafi

Corresponding Author: M. A. El-Attafi

Affiliation: Theoretical Physics Group, (NMR Unit), Faculty of Science, Mansoura University, Mansoura, Egypt

Date: 2 December 2018. [1st International Conference on Mathematics, Computer Science, Biotechnology, and their Applications Port Said, Egypt (24-25 February)

6- Paper Number: 11A

Paper Title: Modulational Instability of Two-Temperature Dusty Plasmas with Nonthermal Ions

Authors: M. A. El-Attafi, H. G. Abdelwahed, and M. M. Selim

Corresponding Author: M. A. El-Attafi

Affiliation: Theoretical Physics Group, Faculty of Science, Mansoura University, Mansoura, Egypt

Date: 23 November 2018 [1st One Day Conference (ODC-DRPP-2019) "Downstream Researches in Plasma Physics" Port Said, Egypt – 13 March 2019].

7- Paper Number: AP-PO-17

.Paper Title: Nonlinear waves propagation in (Ar^{+} ,F^{-}) plasma

Authors: E.K. El-Shewy [a,b], Ali A. El-Rahman [c] and M. A. El-Attafi [b]

Corresponding Author: Ali A. El-Rahman [c] and M. A. El-Attafi [b]

Affiliation: a, Physics Department, Faculty of Science, Taibah University, Kingdom of Saudi Arabia. b, Theoretical Physics Group, Faculty of Science, Mansoura University, Mansoura, Egypt.
C, physics Department, Faculty of science, The New Vally University, El-Kharja-72714,Egypt.

Date: 25- 14th International Conference on Chemistry and its Role in Development ICCRD'14 Mansoura-Hurghada 25-29 March 2019].