Professor Dr./ Abdallah Mohamed Hamed

Contact:
e- mail: amhamed73@hotmail.com
Mobile: 002 02 01014043780
Official e- mail: abdallahamed@sci.asu.edu.eg

## Academic certificates

1- B.Sc. (special Phys.) Excellent honors degree in June 1973
2- M.Sc. (Laser Optics) in 27/12/1976
3- Doctor of Science from Paris XI University- Orsay, FRANCE in 12/07/1985 honors degree.

## Employment history

1- Instructor (1973-1976) Fac. Sci., Ain Shams University, Cairo
2-Lecturer (1976-1978) Fac. Sci., Ain Shams University, Cairo, Egypt.
3- Mission for a Doctoral scholarship from the French Government from (1978-1985)- Paris XI (Orsay) University.
4- Assistant Professor of Physics (1985-1989) at Ain Shams University.
5- Training College of Instructors at Saudi Arabia (1989-1993).
5-Associate Professor of Physics (1993-1998) at Ain Shams University.
6- Professor of theoretical optics and laser (1998-2011) at Ain Shams University.
7- Professor theoretical optics and laser (2004- 2008) at Faculty of Applied Science (Sur- Saltant of Oman).
7- Professor Emeritus from 2011 till now at Ain Shams University.

**Level of Computer Teaching**

Introduction to computer (Architecture of the computer, binary systems and transformations into octal and other systems, some basic programs around the mean value, standard deviation, matrices, etc.)

In research, using Fortran programs, Grapher, Pctools, MATLAB under windows. Now I use Mat- lab codes to process images using interferometric, speckle, and holographic techniques.

**Phys. Dept., Fac. Sci. , Ain Shams University, Cairo ,Egypt**
**Undergraduate courses from 1985 -2021**

1- Physical Optics from (1985- 2003) for the 2nd year students.
2- Advanced Optics from (1985- 2003) for the 3rd year students.
3- Matrix Optics Phys. 304 (2009- 2017) 3rd year students.
4- Laser Physics Phys. 415, 451 4th year students.
5- Atomic Spectra Phys. 405 for 4th level (credit hours).
6- Fourier Optics Phys. 336 for 3rd level (credit hours).

**Graduate courses 1985-2003**

1- Laser Spectra and Non -Linear Optics. M. SC. course.
2- Speckle Interferometry. DIPLOME course.
3- Spectroscopy. M. Sc. Course from 2013- 2015.

**Phys. Dept., Fac. Sci., Minya University, Minya, Egypt**
**Undergraduate courses FROM 1995-2001**

1- QUANTUM OPTICS

2- LASER PHYSICS
3- OPTICAL COMMUNICATIONS AND FIBER OPTICS

**Higher Institute of Technology (BANHA), Cairo, Egypt from 2002- 2004**

GENERAL PHYSICS and SECTIONS FOR PROBLEMS.

Saltant Oman Faculty at Sur, I have taught nearly all undergraduate courses of physics from 2004- 2008. (Head of the Physics Unit – Science Depart.).

## Publications


1- A. M. Hamed, Master of Science (M.Sc.) Thesis, A.R.E. (1976), Some applications of scattered light and multiple beam interference using coherent light.
2- A. M. Hamed, J. Fleuret, and E. Umdenstock, Int. Conf. on image analysis and processing, Pavia, Italy (1980), Pattern analysis in polychromatic light.
3- J. Fleuret et A. M. Hamed, Opto-electronique no.11(1982)27-29, Analyse d'objets colores au moyen d'un systeme hybride .
4- J. Fleuret and A. M. Hamed, Optik 64(1983)201-206, Analysis of colored patterns by a hybrid system.
5- A. M. Hamed, Opt. Applicata XIII (1983)205-213, Recognition of colored objects using thick holographic multiplexed filter (THMF).
6- A. M. Hamed and M. El Shabshiry, Opt. Applicata XIII (1983) 317-320, Theoretical study of image patterns.
7- J. J. Clair and A. M. Hamed, Opt. Applicata XIII (1983)141-148, Theoretical remarks on optical coherent microscope.
8- J. J. Clair and A. M. Hamed, Optik 64(1983)133-141, Theoretical studies on optical coherent microscope.
9- A. M. Hamed and J. J. Clair, Optik 64(1983)277-284, Image and super-resolution in optical coherent microscopes.

10- A. M. Hamed and J. J. Clair, Optik 65(1983)209-218, Studies on optical properties of confocal scanning optical microscope using pupils with radially transmission distribution.
11- A. M. Hamed Optik 67 (1984) 279-290, Aberration studies utilizing an opto-electronic coherent microscope.
12- A. M. Hamed, Opt. and laser technology 16(1984)93-96, Resolution, and contrast in confocal optical scanning microscope.
13- N. Barakat, A. M. Hamed and H. El Ghandoor, Optik 76(1987)102-104, Study of fluid flow using speckle interferometry.
14- H. El-Ghandoor and A. M. Hamed, Int. Symp. Tech. Opto-electronics, 19 Nov. (1987) Palais des Festivals et des Congres- Cannes,France Proc.863(Fagan) . Strain analysis using TV speckle interferometer [Presented by A. M. Hamed].
15- A. M. Hamed, Optik 82(1989) 1-4, Exenteration errors combined with wave-front aberration in a coherent scanning microscope.
16- N. Barakat, H. El Ghandoor, and A. M. Hamed Opt. and laser tech. 21(1989)328-330, Single exposure speckle photography applied to a slow field. https://doi.org/10.1016/0030-3992(89)90066-2
17-A.M. Hamed, Opt. and laser Tech. 22(1990)137-139, Optimization of spatial coherence in confocal optical systems. https://doi.org/10.1016/0030-3992(90)90024-X
18- N. Barakat, A. M. Hamed, and H. El Ghandoor et.al. J. Modern Opt. 38(1991) 203-208, A photographic encoder applied to an optical processor using speckle techniques. doi:10.1080/09500349114550221
19- N. Barakat, A. M. Hamed, and F. Sharaf, Opt. and laser tech. 24(1992) 23-26, Study of a thermal source using two beam interferences.
https://doi.org/10.1016/0030-3992(92)90005-M
20- A. M. Hamed, F. Sharaf, and H.El Ghandoor, Opt. and laser tech.25 (1993)113-116, Study of the refractive index distribution of air around a candle flame.

21-N. Barakat, A. M. Hamed, H.El Ghandoor, and S. Diab , Opt. and laser tech.25(1993)251-254 ,Refractive index profiling across a candle flame using speckle techniques . https://doi.org/10.1016/0030-3992(93)90119-Z

22- N. Barakat, H. El Ghandoor, A. M. Hamed, and S. Diab, Experiments in Fluids, 16 (1993) 42-45, Refractive index profiling across a candle flame using speckle techniques. doi:10.1007/BF00188504 ...

23- H.El Ghandoor, A. M. Hamed, Opt. and laser tech. 28(1996) 163-165, A study on spatially extended phase objects using speckle photography.
https://doi.org/10.1016/0030-3992(95)00050-X

24- A. M. Hamed, Opt. and laser tech. 29(1997)93-95, A study on spatial coherence using quadratic radially distributed apertures (Application to confocal imaging).
https://doi.org/10.1016/S0030-3992(96)00003-5

25- A. M. Hamed, Opt. Applicata XXVII (1997)173-183, Study of speckle statistics using modulated apertures.

26- A. M. Hamed, Optik 107(1998) 89-92, Theoretical study on a Coherent Non-Scanned Microscope (CNSM).

27- A. M. Hamed, Optik 107(1998)161-164, A study on amplitude modulation and an application on confocal imaging.

28- A. M. Hamed, Opt. Applicata XXVII (1997)229-240, Fourier imaging of un-cladded fibers using a liquid wedge interferometer.

29- A. M. Hamed, H. El Ghandoor, Opt. Applicata XXVII (1997)241-250, Studies of homogeneous fibres using speckle photography.

30 - A. M. Hamed, H. El Ghandoor and S.Y. El. Zaiat, Opt. Applicat. XXVIII (1998)31- 40, Study of the Modulation Transfer Function (MTF)using speckle photography.

31 - A. M. Hamed, Opt. Applicat. XXVIII (1998)41-50, Incoherent imaging of a periodic point object using an aperture of B/W concentric annuli.

32- A. M. Hamed, Opt. Applicat. XXXII (2002) 833-841, Diffraction using an amplitude grating object of truncated inverted parabolic shape.

33- A. M. Hamed, Opt. Applicat. XXXIV (2004) 51-61. Computer simulation of modulated two- beam interference using monochromatic light.
34- A. M. Hamed, H. El- Ghandoor, F. El-Diasty, and M. A. Saudy, Opt. and laser tech.36 (2004) 249-253, Analysis of speckle images to assess surface roughness.
35- A. M. Hamed, Journal of phys. 66 (2006) 1037-1048, computation of the lateral and axial point spread function in confocal imaging systems using binary amplitude mask.
36- A. M. Hamed and M. A. Saudy, Journal of phys. 68 (2007) 831-842, Computation of surface roughness using optical correlation.
37- A. M. Hamed, Journal of phys. 70 (2008) 643-648, Modeling of the fringe shift in multiple beam interference for glass fibers. *doi*:10.1007/s12043-008-002
38- A. M. Hamed, Journal of Modern Opt. 56 (2009) 1174-1181, Numerical speckle images formed by diffusers using modulated conical and linear apertures. http://dx.doi.org/10.1080/09500340902985379
39 – A. M. Hamed, Journal of Modern Opt. 56 (2009) 1633-1642, Formation of speckle images formed for diffusers illuminated by modulated apertures (circular obstruction). http://dx.doi.org/10.1080/09500340903277792
40 - A. M. Hamed, Journal of Optical Engineering 50 (2011) 1-7, Discrimination between speckle images using diffusers modulated by some deformed apertures: Simulations. http://dx.doi.org/10.1117/1.3530085
41- A. M. Hamed, Optics and Laser Tech. (accepted), Computer generated quadratic and higher order apertures and its application on numerical speckle images.
42- A.M. Hamed, Optics and photonics Journal 1(2011) 43-51, Computer generated quadratic and higher order apertures and its application on numerical speckle images. http://dx.doi.org/ 10.4236/opj.2011.12007
43- A.M. Hamed, Optics and photonics Journal 1(2011) 52-58, Scanning holography using a modulated linear pupil: simulations.
44- A. M. Hamed, Optics and photonics Journal 3 (2013) 250-258, Recognition of direction of new apertures from the elongated speckle images: simulation.

http://dx.doi.org/10.4236/opj.2013.33040

45- A. M. Hamed, Journal of phys. Pramana 82 (2014) 529-536, Study of step index fiber using laser interferometer. DOI: 10.1007/s12043-014-0706-9

46- A. M. Hamed, Precision Instrument and Mech. PIM 3(2014) 144-152, Study of graded index and truncated apertures using speckle images.

47- A. M. Hamed and Tarek. M. Al-Saeed, International Journal of Computational Engineering IJCER, 4 (2014) 56-62, Processing of mammographic images using speckle technique.

48- A.M. Hamed and M. A. Saudy, Optics, and photonics journal 4 (2014) 136 - 142, Holographic imaging of argon plasma images.

49- A.M. Hamed and T.A. Al-Saeed, J. Modern Opt. 62(2015) 801-810, Image analysis of modified Hamming aperture: application on confocal microscopy and holography. http://dx.doi.org/10.1080/09500340.2015.1007102

50- A.M. Hamed and M.A. Saudy, J. Plasma Phys. 81 (2015)1-14, Image processing of glow discharge plasma using interferometry. http://dx.doi.org/10.1017/S0022377815000550

51- A.M. Hamed, Int. J. Innovative Res. in Eng. and Management (IJIREM) .3 (2016) 125- 133, Discrimination between normal and diseased stomach using speckle imaging. https://doi.org/10.21276/ijirem

52- A.M. Hamed, Int. J. Innovative Res. in Computer Science and Tech (IJIRCST), 4 (2016)38- 45, Investigation of SIDA Virus (HIV) images using interferometry and speckle techniques. https://doi.org/10.21276/ijircst

53- A.M. Hamed, Opt. and Photonics J. 6 (2016)75- 86, Image processing of coronavirus using interferometry. http://dx.doi.org/10.4236/opj.2016.65011

54- A.M. Hamed, International Journal of Photonics and Optical Technology (IJPOT) 2 (2016) 18- 23, Compromising of resolution and contrast using quadratic aperture in scanning holographic imaging.

55- A.M. Hamed and T. A. Al-Saeed, IJPOT 2 (2016) 6- 12, Reconstruction of the corneal layers affected by a periodic noise Application on microscopic interferometry

56- A.M. Hamed, S.Y. Elzaiat, T.A. Al-Saeed, and L.K. Hammad, IJPOT 3(2017)1- 9, The point spread function using longitudinal black and white strips inside a circular aperture.

57- A.M. Hamed, Optik, 131 (2017) 838- 849, Improvement of point spread function (PSF) using linear- quadratic aperture. https://doi.org/10.1016/j.ijleo.2016.11.201

58- A.M. Hamed, IJPOT 3(2017), A modified Michelson interferometer and an application on microscopic imaging.

59- A.M. Hamed, IJPOT 3 (2017), Processing of the retinal artery image using higher orders of two beam interference.

60- A. M. Hamed, IJPOT 4(2018) 13- 19, Design of some heterogeneous apertures and computation of resolution.

61- A.M. Hamed, Int. J. Innovative Res. in Eng. and Management (IJIREM), 5 (2018) 189- 195, Sharp fringes using cascaded Multiple beam interferometers. Application on Kidney images. https://doi.org/10.21276/ijirem

62- A.M. Hamed, Int. J. Innovative Res. in Eng. and Management (IJIREM), 5 (2018) 173- 181, Recognition of some modulated apertures using the Cascaded Fabry- Perot Interferometer (CFPI). https://doi.org/10.21276/ijirem

63- A.M. Hamed, International Journal of Emerging Engineering Research and Technology (IJEERT) 7 (2019) 1-12, Image Processing of Mammographic Images using Holography and Interferometry.

64- AM. Hamed, Am. J. Optics & Photonics 3 (2019), Design of a Cascaded Black – Linear Distribution (CBLD) in Circular Aperture and Its Application on Confocal Laser Scanning Microscope (CSLM).

65- AM. Hamed, Am. J. Optics & Photonics 3 (2019), Comparative Study Between Erythrocytes Blood Cells and Modulated Circular Aperture Using Speckle Photography.

66- A.M. Hamed, “A study on misaligned modulated apertures in Confocal Scanning Laser Microscope”, accepted for oral presentation with good review comments after the review process, Int. Conference in Physics, Houston USA, 28-29 September 2019.
https://helicsgroup.net/conferences/addons/PhysicsUSA2019/29

67- A.M. Hamed, Design of a cascaded black and linear distribution (CBLD) in circular aperture (application on confocal scanning laser microscope (CSLM)” accepted for oral presentation with good review comments after the review process, Int. Conference in Physics, Houston USA, 28-29 September 2019.
https://helicsgroup.net/conferences/addons/PhysicsUSA2019/29

68- A.M. Hamed, International Journal of Emerging Engineering Research and Technology (IJEERT) vol.8, issue 2 (2020) 17-22, The Point Spread Function of an Aperture in the Form of Corona Virus (COVID 19) Images.

69- A.M. Hamed, J. Phys. (PRAMANA) 94:126 (2020), Image processing of Ramses II statue using speckle photography modulated by a new Hamming-Linear aperture.

70- A.M. Hamed, International Journal of Emerging Engineering Research and Technology (IJEERT) vol.8, issue 6 (2020) 1-12, Investigation of Colon using Speckle and Cascaded Interferometric Techniques.

71- A.M. Hamed, J. Phys. (PRAMANA) 95:122 (2021), contrast of laser speckle images using some modulated apertures.
https://doi.org/10.1007/s12043-021-02151- 8.

72- A.M. Hamed, J. Phys. (PRAMANA) 95 (4), Speckle imaging of annular Hermite Gaussian laser beam.
https://doi.org/10.1007/s12043-021-02231- 9.

73- A.M. Hamed and T. A. Al-Saeed, Beni-Suef Univ J Basic Appl Sci (2021)10:67, Reconstruction of images in non-scanned confocal microscope (NSCM) using speckle imaging.
https://doi.org/10.1186/s43088-021-00157-0.

# الرسائل العلمية والمؤلفات العلمية

## Theses

Supervision of 4 M. Sc. Theses and 1 Ph. D. thesis.

1- Omnia Ahmed Abd El Ghaffar, M. Sc. Thesis (1989)," Studies on the formation of speckles and their characteristics ".

2- Safa Diab, M. Sc. Thesis (1989).

3- Mohamed A. SAUDY, M. Sc. Thesis (2002), "Studies on laser speckle photography of some rough surfaces".

4- Lena Khaled, M. Sc. in 22/09/2018. Title: Image processing of some microscopic images using Confocal Scanning Laser Microscope.

5- Wafaa Ezzat Aly, Registration date: 19/04/2021 for PH. D. thesis. Title: Detection of fluid flow preferences using laser sheet speckle technique.

## Books

1- A. M. Hamed, Polychromatic image processing (Laser Applications) (1998)1-86, I.S.B.N. 977-19-6202-7, 1st edition, Cairo, A. R. Egypt.

2- A.M. Hamed, Topics on Optical and Digital Image Processing Using Holography and Speckle Techniques in (July 6, 2015), ISBN: 9781329328464- 1st edition. Publisher: www.lulu.com.

3- www.lap.com/(Lambert Academic Publishing), (Author): Abdallah Mohamed Hamed, in (14- 11- 2017), ISBN: 9786202070706, Title:

The PSF of Some Modulated Apertures (Application on Speckle and Interferometry Images).

4- www.lap.com/ (Lambert Academic Publishing), (Author): Abdallah Mohamed Hamed, in (21 February 2019), ISBN: 978-613-7-31982-6, Title: Holographic Imaging and Operator Algebra using Gaussian Laser Beam.

5- www.lap.com/ (Lambert Academic Publishing), (Author): Abdallah Mohamed Hamed, in (24 July 2019), ISBN: 978-620-0-24595-3, Title: Topics on Confocal Scanning Laser Microscope (CSLM).

6- www.lap.com/ (Lambert Academic Publishing), (Author): Abdallah Mohamed Hamed, in (29 September 2020), ISBN: 978-620-2-79470-1, Title: Fourier Optics, Laser Speckle Imaging, and Cascaded Interferometers.

## الجمعيات العلمية وهيئات النشر الدولية والجوائز والتحكيم لمجلات علمية دولية

## Membership in international scientific committees and reviewer in international journals.

1- Member of New York Academy of Science (N.Y.A.S.) in the period 1997-1998 (certificate is provided).

2- Member of American Association for the Advancement of Science (A.A.A.S.) in the period 1997-1998.

3- Member of the Permanent Scientific Committees of Physics as an arbitrator f 2008 till now. This is available in the site: www.eupc.edu.eg.

4- Member of the commission Regional d' Experts (CRE) held at France Embassy at Lebanon. The membership in CRE start at 22/03/2009 for six years until 2014(Confirmation from the Chairman of the Ain shams University).

5- I have reviewed the work of Professors and Associate Professors at the National Universities listed in the following table:

| Name of Candidate | Place of Work | Degree awarded | Reviewer report date | |
|---|---|---|---|---|
| 1- Dr. / H. El Kashif | Fac. Science Tanta University | Professor of Exp. Optics & Laser | Feb. 2009 | |
| 2- Dr./Mohamed Aly Ahmed | | Professor of theoretical laser physics | July 2014 | |
| 3- Colonel / Ashraf F. El-Sheri | Technical Military College | Professor | 29 Nov.2014 | |
| 4- Dr./Mamdouh Ahmed Abd- El-Hady Shams El-Din | Fac. Science Damietta Univ. | Professor in Experimental physics | July 2017 | |
| 5- Dr./Tamer Ashour Elsayed Ali | Faculty of Engineering, Cairo University | Professor Assistant in Eng. physics | Feb.2019 | |
| 6- Dr./Tamer Mohamed Mostafa El-Faham | Faculty of Engineering, Benha University | Professor Assistant in physics | 24 June 2019 | |

| | | | |
|---|---|---|---|
| 7- Dr./Naglaa Abo-Elela Mahmoud | Institute of Metrology and Calibration, Cairo | Professor Assistant In Phys. Metrology | Jan. 2019 check |
| 8- Dr./ Nevin Farid Abd-El Mabood | Institute of Metrology and Calibration, Cairo | Professor Researcher | Oct. 2019 check |
| 9- Dr./Gad Mansour Ahmad Gad | Fac. Science, Helwan Univ. | Professor Assistant | 23 Nov. 2019 |

6- Also, I have reviewed nearly five papers in the Journal of Solids, Editor: Prof. Dr. / Hassan Talaat.

7- I have reviewed many publications in International Scientific Journals, in:

i) Optics and Laser Technology

ii) Int. J. for light and electron optics (Optik),

iii) Optics Communication (Certificate is provided),

iv) Optics and Laser in Engineering,

v) Opt. Engineering Journals (Certificates are provided).

vi) Computer in biology and medicine (Certificate is provided).

8- I'm an Editor in Scientific Research Association (SCIREA) in Physics since 2019. (Certificate is provided).

9- Obtaining the Int. Publication awards from Ain Shams University since 2013 for several Int. Published Research.

10- Certificates of appreciation as a reviewer from Optical Engineering Journal. (Certificates are provided) and a small take is given below.

11- Translation of two international published books for the author into 8 languages published by Lambert academic Publishing (Germany) and two letters are provided.