

# Mohamed Ibrahim Waly

Mobile No.: 0966582299092 / 01006053528

Personal e-mail: bmewaly@gmail.com

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## Personal Data:

- Marital Status: Married.
- Children: Two
- Military Status: Exempted.
- Nationality: Egyptian.
- Date of Birth: 30-Jan-1983.
- Place of Birth: Cairo.
- Gender: Male.
- Address: 36 behind al Ahly club Nasr city- Cairo

## Education:

- B.Sc in System and Biomedical Engineering “The Higher Institute of Engineering - Shorouk Academy, Cairo, Egypt, 2004.
- Overall Grade: Excellent (with honor).
- Introductory master's degree in system and Biomedical Engineering” System and Biomedical Engineering Department- Faculty of Engineering-Cairo University” 2005
- Introductory Grade: Very Good
- Master's degree in system and Biomedical Engineering” System and Biomedical Engineering Department- Faculty of Engineering-Cairo University” 2009
- Introductory Grade for PHD degree: Very Good
- Comprehensive Exam for PDH degree done.
- PHD Degree in System and Biomedical Engineering” System and Biomedical Engineering Department- Faculty of Engineering-Cairo University” 2013.
- Associate professor from 27/12/2020 until now.

## Graduation Project:

- **Project:** Chemical blood analyzer.
- **Project Grade:** Excellent.
- **Master point:** Computer aided surgery for liver Transplantation.
- **PHD point:** Prediction Model for the Development of Primary Open Angle Glaucoma in Individuals with Ocular Hypertension.

## Supervised graduation Projects:

- Mouse eye movement.
- Khames Hospital design
- Autoclave.
- Hospital Information System.
- Blood banking software Control
- Dental chair
- Vision Field.
- Infant Incubator.
- Syringe Pump
- LASER Scanner treatment equipment.
- Portable dental unit
- Wheelchair

- Dental X-ray
- Ultrasound pachymeter
- Segmentation of Breast Cancer from digital microscopic images.
- Evaluation of Health care system in Shorouk city

### Supervised master thesis:

- Numerical simulation and estimation of wall shear stress of a compliant thoracic aorta with aneurysm, 2020.
- Utilization of capital medical equipment in radiology department.
- New design for Flexible Radio-Frequency Identification (RFID) Antenna for Biomedical Sensor Applications
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### Teaching Experiences:

#### Undergraduate Level:

- 2004-2012 I had an experience in Teaching **Electronic** sources as Electrical circuit for 1st year of biomedical, Basic Electronic for 2<sup>nd</sup> year, Bioelectronics for 3<sup>rd</sup> year and Electronic system for 4<sup>th</sup> year.
- 2004-2012 I had an experience in Teaching **Hospital management** for 4<sup>th</sup> year.
- 2004-2012 I had an experience in Teaching **Mechanical** sources as Machine design for 1st year of biomedical, Thermodynamic for 2<sup>nd</sup> year, and Biomechanics for 4<sup>th</sup> year
- 2004-2012 I had an experience in Teaching **Medical Equipment** sources as Biomedical Testing Devices for 3<sup>rd</sup> year and Medical Equipment (1 & 2) for 4<sup>th</sup> year
- 2013-2016 I had an experience in Teaching Dynamic and control system for 3<sup>rd</sup> year and System Engineering for 4<sup>th</sup> year
- 2015 – till now I had an experience in Teaching Medical Electronic equipment and Optical and Medical Laboratory equipment

#### Graduate Level (Biomedical engineering Master program):

- Research Methodology
- Physiological modeling
- Hospital Planning, Organization and Management.
- Biosignal processing
- Medical image processing

### Academic experiences:

Institution	Title	Period	FT/PT
High institute of engineering	Assistant Lecturer	2004-2009	FT
High institute of engineering	Lecturer	2009-2013	FT
High institute of engineering	Assistant Professor	2013-2015	FT
High institute of technology and engineering	Assistant Professor	2014-2015	PT
Collage of applied medical science	Assistant Professor	2015 – 2020	FT
Collage of applied medical science	Associate Professor	2020 – till now	FT

## Other Responsibilities:

- Responsible for supporting all the new staff of assistant in our department.
- Support all non-academic staff in dealing with all office work.
- Regulate all the department office work.
- Construct the timetable to for the academic year.

## Conferences:

- Attend and Organize in the 1st International Biomedical Engineering Conference 2002 workshop About Safety & Hazards in Hospital and Clinical Engineering Role.
- Attend CIBEC 2012, the 6th Cairo International Conference on Biomedical Engineering, sponsored by the IEEE Engineering in Medicine and Biology Society (EMBS).
- Organize IEEE EMBS International Students Conference 2013.
- Injury's symposium- Prevention and Methods of Treatment & Rehabilitation 2015

## Publications:

- M. Waly, A.Sharawy, K.Wahba ‘‘ System dynamic model for Normal Intraocular pressure ‘‘ GJCAT, Vol 1(4), 2011, 502-511.
- M. Waly, A.Sharawy, K.Wahba ‘‘ A Comparison of Different Prediction Models in the Progression of Ocular hypertension to Primary Open Angle Glaucoma’’ International Journal of Applied Information Systems (IIAIS) Foundation of Computer Science FCS, New York, USA , Volume 5– No.3, February 2013
- M. Waly, A.Sharawy, K.Wahba, Ayman Salah and Islam ibrahem ‘‘Sensitivity of the Risk Factors for the Progression of Ocular Hypertension to Primary Open Angle Glaucoma’’ International Journal of Computer Applications Volume 70– No.22, May 2013
- Hanaa Ismail Elshazly, Mohamed Waly, Abeer Mohamed Elkorany, Aboul Ella Hassanien " Chronic eye disease diagnosis using an ensemble-based classifier" ICET 2014.
- Mohamed Abd Elfattah, M. I. Waly, Mohamed Abu ElSoud, Aboul Ella Hassanien, Mohamed F. Tolba, Jan Platos, Gerald Schaefer: An Improved Prediction Approach for Progression of Ocular Hypertension to Primary Open Angle Glaucoma. IBICA 2014 Volume 303, 2014, pp 405-412
- M.I.waly and A. El Hossey " Detection of Retinal Blood Vessels in Digital Fundus Images by using Gabor filter with Entropic threshold " Majmaah Journal of Health Sciences. 2016.Volume 5.
- Omar Sayed Amer, Mohamed Ibrahim Waly and Saeed Ahmed Al-Zahrani "Intestinal parasitic infections among patients of Prince Sultan Military Medical City in Riyadh region, Saudi Arabia: a 5-year retrospective study". Pakistan journal of zoology (0.45 impact factor ISI).2017
- Sirajudeen M.s., Alqahtani M., Alaidarous M.& Waly M. (2018). Work-related musculoskeletal disorders among faculty members of college of applied medical sciences, Majmaah university, Saudi Arabia: A cross-sectional study. International Journal of Health Science. 12.
- SIRAJUDEEN M.S., MUTHUSAMY H., ALQAHTANI M., WALY M., WALY M., & JILANI A.K. (2018). Computer-related health problems among university students in Majmaah region, Saudi Arabia. Biomedical Research (India). 29, 2405-2415
- "Hand Hygiene practice among hospital laboratory workers in selected hospitals in Saudi Arabia".Biosci. Biotech. Res. Comm. 11(1): 11-17 (2018)
- ALAIDAROUS, M., CHOUDHARY, R. K., WALY, M. I., MIR, S., BIN DUKHYIL, A., BANAWAS, S. S., & ALSHEHRI, B. M. (2018). The prevalence of transfusion-transmitted infections

and nucleic acid testing among blood donors in Majmaah, Saudi Arabia. *Journal of Infection and Public Health*. 11, 702-706.

- AMER OSO, AL-MALKI ES, WALY MI, ALAGEEL A, & LUBBAD MY. (2018). Prevalence of Intestinal Parasitic Infections among Patients of King Fahd Medical City in Riyadh Region, Saudi Arabia: A 5-Year Retrospective Study. *Journal of Parasitology Research*. 2018.
- Z. Li, M. Sheikholeslami, M. Ayani, M. Shamlooei, A. Shafee, M. I. Waly, and I. Tlili, "Acceleration of solidification process by means of nanoparticles in an energy storage enclosure using numerical approach," *Physica A: Statistical Mechanics and its Applications* 524 ,540–552 (2019).
- A. Smida, A. Iqbal, A. J. Alazemi, M. I. Waly, R. Ghayoula and S. Kim, "Wideband Wearable Antenna for Biomedical Telemetry Applications," in *IEEE Access*. doi: 10.1109/ACCESS.2020.2967413
- Iqbal, A. Smida, A. J. Alazemi, M. I. Waly, N. K. Mallat and S. Kim, "Wideband Circularly Polarized MIMO Antenna For High Data Wearable Biotelemetric Devices," in *IEEE Access*. doi: 10.1109/ACCESS.2020.2967397.
- Waly, M. (2020). A Modified Evaluation Approach for Direct Assessment of Program Outcomes: Medical Equipment Technology Program as Case Study. *International Journal of Emerging Technologies in Learning (iJET)*, 15(4), 22-36. Kassel, Germany: International Journal of Emerging Technology in Learning. Retrieved August 9, 2020 from <https://www.learntechlib.org/p/217237/>.
- Kaja, R., Vaiyapuri, A., Sirajudeen, M. S., Muthusamy, H., Unnikrishnan, R., Waly, M., Devaraj, S., Seyam, M. K., & S, G. N. (2020). Biofeedback flutter device for managing the symptoms of patients with COPD. *Technology and health care : official journal of the European Society for Engineering and Medicine*, 10.3233/THC-202222. Advance online publication. <https://doi.org/10.3233/THC-202222>.
- Alanazi, A. B., Sikkandar, M. Y., & Waly, M. I. (2020). Estimation of wall shear stress of compliant thoracic aorta with aneurysm. *Journal of Mechanics in Medicine and Biology*, 20(03), 2050013.
- Sirajudeen MS, Waly M, Alqahtani M, et al. Generalized Joint Hypermobility among School-going children in Majmaah region, Saudi Arabia. *Peerj*; 2020. DOI: 10.21203/rs.2.17255/v1.
- O.Amer, M.Waly, " Epidemiological trends of Malaria in the Western regions of Saudi Arabia: a cross sectional study" *The Journal of Infection in Developing Countries* 2020.
- M.Waly" Evaluation of clinical engineering department services in Riyadh city hospitals", *International Journal of Online and Biomedical Engineering (iJOE)* , 2020.
- Alharbi, Raed, Mohamed I Waly et.al" Does transcranial direct current stimulation affect selective visual attention in children with left-sided infantile hemiplegia? A preliminary randomized controlled study." *Brain Impairment*. 2020
- Amjad Iqbal, Mohamed I Waly, Amor Smida , Nazih Khaddaj Mallat," Dielectric Resonator Antenna with Reconfigurable Polarization States" *IET Research Journals*, 2020.
- Azam, Muhammad, Fazle Mabood, Tianzhou Xu, Mohamed Waly, and Iskander Tlili. "Entropy optimized radiative heat transportation in axisymmetric flow of Williamson nanofluid with activation energy." *Results in Physics* 19 (2020): 103576.
- Iqbal, Amjad, Amor Smida, Mohamed I. Waly, and Nazih Khaddaj Mallat. "Highly-tunable and wide stopband microstrip bandpass filters." *International Journal of RF and Microwave Computer-Aided Engineering* 31, no. 5 (2021): e22610.
- Al-Atroush, Mohamed Ezzat, Omar Shabbir, Bandar Almeshari, Mohamed Waly, and Tamer A. Sebaey. "A Novel Application of the Hydrophobic Polyurethane Foam: Expansive Soil Stabilization." *Polymers* 13, no. 8 (2021): 1335.
- D. Venugopal, T. Jayasankar, Mohamed Yacin Sikkandar, Mohamed Ibrahim Waly, Irina V. Pustokhina , Denis A. Pustokhin and K. Shankar, " A Novel Deep Neural Network for Intracranial Haemorrhage Detection and Classification" 2021. *Computers, Materials & Continua*
- R. Sowmyalakhmi, Mohamed Ibrahim Waly, Mohamed yacin Sikkandar, T. jayasankar, Asyed Sayed Ahmed, Rahhmi Rani, and surech Chavhan " An Optimal Lempel Ziv Markov Based Microarray

image compression algorithm for prostate cancer patients images" 2021. Computers, Materials & Continua

- Ahmed Abdel-Hadi, Bader Alshehri, Mohamed Waly, Mohamed Aboamer, Saeed Banawas, Mohammed Alaidarous, Manikandan Planisamy " Predictive modeling and validation on growth and production of asexual spores and ochratoxin A of Aspergillus ochraceus group under ecophysiological factors" Toxins, 2021.
- Surajo Muhammad a,\*, Jun Jiat Tiang a, Sew Kin Wong a, Amor Smida b,c, Mohamed I. Waly b, Amjad Iqbal "Efficient Quad-band RF Energy Harvesting Rectifier for Wireless Power Communications" International Journal of Electronics and Communications 2021
- Seyam M, Sherief A, Waly MI, Kashoo FZ, Elfakharany MS. Effect of sensory integration on gait for children with mild hemiplegic cerebral palsy. Egyptian Journal of Physical Therapy. 2021 Sep 1;7(1):1-6.
- Sowmyalakshmi, R., Waly, M. I., Sikkandar, M. Y., Jayasankar, T., Ahmad, S. S., Rani, R., & Chavhan, S. (2021). An Optimal Lempel Ziv Markov Based Microarray Image Compression Algorithm. CMC-COMPUTERS MATERIALS & CONTINUA, 69(2), 2245-2260.
- Alaidarous, M., M.I.Waly and etal (June 15, 2021). Serum Lipid Profile in Patients Visiting King Khalid General Hospital in Majmaah, Saudi Arabia. Bioscience Biotechnology Research Communications, 14, 2, 563-569.
- Waly MI, Sikkandar MY, Aboamer MA, Kadry S, Thinnukool O. Optimal Deep Convolution Neural Network for Cervical Cancer Diagnosis Model.2022
- Jayanthi N, Manohari D, Sikkandar MY, Aboamer MA, Waly MI, Bharatiraja C. Multi-Model Detection of Lung Cancer Using Unsupervised Diffusion Classification Algorithm.2022
- Muhammad, S., Tiang, J. J., Wong, S. K., Rambe, A. H., Adam, I., Smida, A., Waly, M. I., ... Mohd, Y. M. N. (March 20, 2022). Harvesting Systems for RF Energy: Trends, Challenges, Techniques, and Tradeoffs. Electronics, 11, 6, 959.
- Sirajudeen, M. S., Waly, M., Manzar, M. D., Alqahtani, M., Alzhrani, M., Alanazi, A., Unnikrishnan, R., ... Alrubaia, W. (April 12, 2022). Physical activity questionnaire for older children (PAQ-C): Arabic translation, cross-cultural adaptation, and psychometric validation in school-aged children in Saudi Arabia. Peerj, 10.
- Selmi M, Iqbal A, Smida A, Waly MI, Belmabrouk H. Modeling of heat transfer distribution in tumor breast cancer during microwave ablation therapy. Microwave and Optical Technology Letters. 2022 Apr 30.
- Muhammad S, Tiang JJ, Wong SK, Nebhen J, Smida A, Waly MI, Iqbal A. Broadband RCN-based RF-rectifier with a large range of power for harvesting ambient wireless energy. AEU-International Journal of Electronics and Communications. 2022 Jul 1;152:154228.
- Muhammad S, Smida A, Waly MI, Mallat NK, Iqbal A, Reza Khan S, Alibakhshikenari M. Design of Wideband Circular-Slot Antenna for Harvesting RF Energy. International Journal of Antennas and Propagation. 2022 Jul 19;2022.

### Programming Languages:

- Matlab
- Ithink
- CST
- python
- Protos
- Vensim

## **Other Experiences & Skills:**

### **Operating Systems**

- MS-Windows

### **Microsoft Desktop Applications:**

- MS-Word
- MS-Excel
- MS-Outlook
- MS-Access
- MS-PowerPoint

### **Management:**

- Short and long terms planning
- Leadership, dependable and oriented results
- Communications and well-organized
- Applying policies and procedures of the firm
- Minimize the costs and the expenses.
- Internal and external correspondences

## **Educational quality assurance unit:**

- Responsible for making course description and report
- One of the team that responsible for preparation Educational Regulations for High Institute of engineering
- One of the team that responsible for preparation Educational Regulations for High Institute of engineering
- Chairman of Quality assurance unit - applied medical science collage.
- Chairman of Curriculum and education plan units - applied medical science collage
- Chairman of Medical continuous education- applied medical science collage
- Coordinator for Basic life support center
- Member for Health information technology preparation committee
- Member for Biomedical Engineering Master program preparation committee
- Chairman of TQM unit

## **Consultation:**

- Biomedical Engineering consultant in Center for Advanced Software and Biomedical Engineering Consultations (CASBEC) - Faculty of Engineering – Cairo university from 2013 till now.
- Biomedical engineering consultant certified from Saudi Commission for health specialties.
- Deanship of Graduate Studies- Majmaah university.

## **Awards:**

- Dean of Excellence Award for faculty members 2016-2017
- Dean of Excellence Award for faculty members 2017-2018

- Dean of Excellence Award for faculty members 2019- 2020

### **Community Service:**

- Awareness campaign for Food Concepts 2015
- Unified Health Week to Promote Oral and Dental Health 2017

### **Training courses and workshops:**

- Clinical engineering workshop 2012
- Application of quality management system ISO 9001 2016
- Preparing the self-study report for academic programs 2017
- How to prepare the cognitive domain question for learning 2017
- Quantitative data analysis 2017
- Escienta- tips to avoid common mistakes researchers 2017
- Publishing mechanism in ISI 2018
- Search mechanism in IEEE 2018
- Statistical analysis using excel 2018.
- How to use statistical methods to extract results from among the numbers 2018.

### **Languages:**

- Arabic: Mother Tongue
- English: Fluent (spoken & written)