

Islam Sayed Hassan Mohammed Afifi

Contacts

Mobile: +20 12 73515869
Home phone: +20 2 33753959
Address: Omarat Shabab 1, Building 5, El-Moneib, Giza.
E-mail : islam_sayed@eng.cu.edu.eg

General information

Gender : Male
Nationality: Egyptian
Date of Birth: January 17th, 1987.
Marital Status : Single
Military Service : Exempted
Last Degree held: M.Sc. in Engineering Physics, Faculty of Engineering , Cairo University

Current position

Senior Teaching and Research Assistant at the Faculty of Engineering, Cairo University.

Education

- 2009 –present** - M.Sc. in Engineering Physics, Faculty of Engineering , Cairo University-
January,2014
- Passed the Physics Qualifying Year (first year): 15 credit hours with GPA=3.76
- Passed the Preliminary Year (second year): 19 credit hours with GPA=3.71
- The thesis part: “Cloaking a large dielectric sphere using metamaterials covers” under the supervision of Dr. Ahmed A. Abouelsaood and Dr. Islam A. Eshrah
- Online course at Stanford university “Nanomanufacturing”
- 2004-2009** - B.Sc. in Electronics and Communications Engineering, , Faculty of Engineering , Cairo University
- Grade: Distinction with Honors. (Ranked eleventh on a class of 395 students) (87.73 Percentage)
- 2001-2004** Egyptian GCSE from El-Saidia High School with a total percentage of 98.25%

Teaching Experience

Preparatory year Electrostatics and Magnetism
Material Properties and Thermodynamics

Credit hour system Preparatory Year Physics laboratory
 PHYN001 Mechanics, Oscillations, Waves and Thermodynamics
 PHYN002 Electricity and Magnetism
First year First Year Physics laboratory

Research experience

Master thesis: The thesis is about cloaking a dielectric sphere using metamaterials. The aim of this thesis is to cloak a dielectric sphere with dimensions comparable with the incident wavelength using metamaterial covers. From this research I have acquired broad knowledge in

- Using Mie scattering theory for analytical solution for scattering from a spherical object.
- Using the cascade of S matrix to find a general solution for multi-layer spherical shell
- Using Genetic algorithm to find the parameters of the cover used to achieve cloaking
- Using neural network to make a simple model to get the parameters of the covering layer.

Graduation Project: “Portable Object Tracking System”

The aim of the project is to design an electronic circuit that takes images from a fixed camera and detect any object moves in these images. The work is divided into two parts: the first part is about designing a circuit that can take several input video formats and convert them into separated figures of a certain format that is easily to be processed. The second part is about sending these figures to another circuit that has a processing unit and applying an algorithm to process these figures and find the location of the moving objects.

Awards

- 1) Teaching Assistant Fellowship, Faculty of Engineering, Cairo University
- 2) Master Fellowship, Faculty of Engineering, Cairo University.
- 3) The Ideal Teaching Assistant Prize in the Faculty of Engineering, Cairo University
- 4) The Faculty Award for Excellence during all years of my undergraduate studies.

Publications

A. Abouelsaood, I. Afifi, and I. Eshrah, "Nonresonant and resonant cloaking of an electrically large dielectric spherical object by a multilayer isotropic metamaterial cover," Appl. Opt. 54, 6598-6607 (2015).

Summer Training

- 2007: **Maadi Satellite Communications Center**, Satellite Communications and Earth Station Technology.
National Research Center, Training and Capabilities Center ,training in electricity and fire alarm system.

- 2006: **Communications and Electronics Club for Engineers (CECE)** in Cairo University ,
Projects: power supply, some amplifiers, and inter-com.

Skills:

Microsoft Office (Word, Excel, Power Point, and Visio).
Visual Basic, C++.
MATLAB, Simulink.
Electronic design and simulation using OrCAD and spice.
HFSS
Latex, Corel Draw

Languages

Arabic: native.

English: Very Good (reading, writing, and listening), Good (speaking).

REFERENCES

- **Prof. A. A. Abouelsaood**
Address: Cairo University, Faculty of Engineering
Department of Engineering Mathematics and Physics
Giza 12613, Egypt
Email: aelsaood@aucegypt.edu
- Dr. Islam A. Eshrah
Address: Cairo University, Faculty of Engineering
Department of Electronics and Electrical Communications
Giza 12613, Egypt
Email: isattar@eng.cu.edu.eg , ieshrah@eece.cu.edu.eg
- Prof. M. Hesham
Address: Cairo University, Faculty of Engineering
Department of Engineering Mathematics and Physics
Giza 12613, Egypt
Email: mhesham@eng.cu.edu.eg