



Dr. Ahmed Mohamed Fawzy

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Associate Professor

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Egyptian
8 July 1986

57 Hisham Labib Nasr City, Cairo, Egypt.

Fields of interest

Optical MEMS - Integrated Optics - ECTL - Super Capacitor- Acoustic Devices- Piezoelectric.

Academic Degrees

2017 Ph.D. From Minia university, Egypt, in Integrated Optics.

Thesis: Analysis and design of MEMS optical components

2014 M.Sc. Of Electronics Engineering from Helwan university, Cairo-Egypt, Department of Electronics and Comm.

Thesis: MEMS semiconductor tunable laser

2008 B.Sc. Of Electrical Engineering from Helwan university, Cairo-Egypt, Department of Electronics and Comm.

Project title: Computer network planning tool

Work Experience

From 2009:2015: Assistant Lecturer at new cairo academy

From 2010:2012: Part time engineer in Huawei company in Egypt in the network operation center responsible for transmission lines and optical fiber cables.

From 2015 :2018: Researcher in Electronic Research Institute in Nanotechnology central lab.

From 2018 :2020: Post doc. at the college of precision instrument and opto electronics engineering, **China**.

From 2020 till now: Researcher at Electronic Research Institute in Nanotechnology central lab.

From 2021 till now: Project manager at Innovator Support Fund (ISF)

Teaching Experience

2009-2015 : Assistant Lecturer at Electronics and Communications Department

Place of work: New Cairo Academy, Higher Institute of Engineering

Participated in teaching more than 12 courses for different stages:

Optical communication
Fault diagnosis
Communication2
Computer organization
Network Communication

Optoelectronics
Signal processing
Communication3
Integrated circuit
Antenna Theory

Electromagnetic wave
Communication1
Logic
Satellite communication
Circuit

and my duties besides teaching was:

- Preparing lectures and assignments
- Grading and advising
- Supervising graduation projects
- Making course files

2017-2018: Assistant professor at Electronics and Communications Department

Place of work: Research institution in the 10th Ramadan city.

Participated in teaching more than 3 courses for different stages:

Research Experience

2009:2014 master thesis project (**MEMS semiconductor tunable laser**)

Place : Laser lab at Ainshams University, Egypt

- A model was done by Matlab and ANSYS softwares to study diffraction effect on Gaussian.
- The experimental work that includes the setup of my work and dealing with different devices.
- Prepare samples of different MEMS mirrors and measured the amount of power that coupled back to the laser

2014:2017: PhD thesis project (Analysis and design of MEMS optical components)

Place: Minia University, Egypt

- A model was done by Matlab and Comsol software's to study Dual external cavity tunable lasers and taking a diffraction and truncation effect in our accounts.
- Fabrication of the actuators was studied by different techniques

2015: till now Work with a group of researchers at ERI in the following directions

- Design, fabrication and characterization of passive integrated optical circuits
- Optical MEMS components
- Preparation of the Graphene oxide, which be used in the electrodes of the Super capacitor.
- Open air fabricated and cost-effective super capacitor.

Scientific Activities

- **Postdoctoral** research in Faculty of precision instrument and optoelectronics Engineering, Tianjin University, **China**, 2018 and 2019.
- Member of IEEE since 2015.
- Specialization: Piezoelectric MEMS devices (Microphone, Micro speaker, Piezoelectric materials, Energy harvesting systems).

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1. Sherine Mohammed Abd El Kader Abd El Raouf, Aya Hossam, **Ahmed Mohamed Fawzy**, and Ahmed Magdy." Dashboard for COVID-19 in Egypt", Issue No.: 003595, 07-9-2020, Copyright © 2020.
2. Sherine Mohammed Abd El Kader Abd El Raouf, Aya Hossam, **Ahmed Mohamed Fawzy**, and Ahmed Magdy." An intelligent model for COVID-19 diagnosis based on CT-scan", Issue No.: 003596, 07-9-2020, Copyright © 2020.

Awards

- Best graduation project in 'Made in Egypt 'competition 2008.
- Best teaching assistant in the New Cairo Academy 2011, 2012.
- Best employee in the Huawei Company in 2012.

Publications

- 1- **Ahmed Fawzy**, Salwa El-Sabban, Ibrahim Ismail and Daa Khalil, "On the Modeling of an External Cavity Tunable Laser ECTL Source with Finite Mirror Dimensions", PIERS 2013, Stockholm, Sweden, 12-15 August, 2013.
- 2- **Ahmed Fawzy**, Osama Elghandour, Hesham, F., A., Hamed, "Performance Analysis on a Dual External Cavity Tunable Laser ECTL source", Journal of Electromagnetic Analysis and Applications, Vol.7, PP. 134-139.,2015.
- 3- **Ahmed Fawzy**, Osama Elghandour, Hesham, F., A., Hamed, "Diffraction Effects on a Dual External Cavity Tunable Laser ECTL Source", PIERS 2015, Prague, 6-9 July, 2015.
- 4- **Ahmed Fawzy**, Osama Elghandour, Hesham, F., A., Hamed, " MEMS Tunable laser Based on A Dual Fabry Perot Filter by Using Cylindrical Mirrors", IONS Quebec 2016
- 5- **Ahmed Fawzy**, Osama Elghandour, and Hesham F. A. Hamed," A Dual Cylindrical Tunable laser based on MEMS" International Journal of Advanced Computer Science and Applications, Vol.7, No.7, 2016.

- 6- **Ahmed Fawzy**, M. Nady, Osama Elghandour, and Hesham F. A. Hamed, "Optical switching in MEMS controlled ECTL containing nonlinear optical materials," *International Journal of Scientific and Engineering Research*, Vol.8, no. 3, March 2017.
- 7- **Ahmed Fawzy**, I. Edwar, Ashraf K. Eessaa, " Review on Supercapacitor Based on Nonomaterials for energy storage," *IEEE 4th International Conference on PEIT'017*, Alex, 5-8 Nov, 2017.
- 8- **Ahmed Fawzy**, Ashraf K. Eessaa, and Y. A. Saeid, " Energy gap variation due to Al content in $\text{SmFe}_{1-x}\text{Al}_x\text{O}_3$ and its application in optics," *Micro & Nano Letters*, Vol. 13, Iss. 11, pp. 1516–1519, 2018.
- 9- **Ahmed Fawzy**, Ashraf K. Eessaa, and Y. A. Saeid, " Synthesis and the Study of Optical Characteristics of Nano $\text{SmFe}_{1-x}\text{Al}_x\text{O}_3$ by the Double Sintering Ceramic Method," *IOSR Journal of Electronics and Communication Engineering*, Volume 13, Issue 6, PP 35-38, 2018.
- 10- **Ahmed Fawzy**, and Menglun Zhang. "Piezoelectric Thin Film Materials for Acoustic MEMS Devices." In 2019 6th International Conference on Advanced Control Circuits and Systems (ACCS) & 2019 5th International Conference on New Paradigms in Electronics & information Technology (PEIT), pp. 82-86. IEEE, 2019.
- 11- Samir, Ahmed, **Ahmed Fawzy**, and Hala M. Abd El Kader. "Design of a Multi-Band U-Slot Microstrip Patch Antenna." *IOSR Journal of Electronics and Communication Engineering*, Volume 14, Issue 6, PP 29-39, 2019.
- 12- Aya Hossam, **Ahmed Fawzy**, " A Rapid Diagnosis Tool Based on LASER for Fighting COVID-19" *INTERNATIONAL JOURNAL OF MICROWAVE AND OPTICAL TECHNOLOGY*, Vol. 15, No. 5, September 2020.
- 13- Aya Hossam, Ahmed Magdy, **Ahmed Fawzy**, Sherine M Abdelkader, " An Integrated IoT System to Control the spread of COVID-19 in Egypt." Accepted In 2020 6th International Conference on Advanced intelligent systems and informatics (AISI 2020).
- 14- **Ahmed Fawzy**, Yiming Lang, and Menglun Zhang, " Design and Analysis of Piezoelectric MEMS Micro-Speaker based on Scandium-Doped AlN Thin Film," *Micro & Nano Letters*, Vol. 16, Iss. 1, 2021.
- 15- Aya Hossam, **Ahmed Fawzy**, "Modeling and Analysis of High-Performance Piezoelectric MEMS Microspeaker" *INTERNATIONAL JOURNAL OF MICROWAVE AND OPTICAL TECHNOLOGY*, Vol. 16, No. 1, Jan 2021.
- 16- Samir, Ahmed, Ahmed Magdy, Hala M. Abd El Kader, and **Ahmed Fawzy**, "A Compact Triple Band Notch Reconfigurable Antenna for UWB Applications" *INTERNATIONAL JOURNAL OF MICROWAVE AND OPTICAL TECHNOLOGY*, Vol. 16, No. 1, Jan 2021.
- 17- Fatma M ahmed, Sherine Abdelkader, and **Ahmed Fawzy**, " Performance Analysis for Nano biosensors Based on MOF" *AL-AZHAR ENGINEERING FIFTEENTH INTERNATIONAL CONFERENCE* March 2021.
- 18- Saeid YA, Ateia EE, **Fawzy A**, Abdelmaksoud MK. Substantial reduction of NIR electromagnetic reflectance based on rare-earth-doped nanomaterial. *Design Engineering*. 2021 Sep 1:5143-55.
- 19- Hossam A, **Fawzy A**, Elnaghi BE, Magdy A. An Intelligent Model for Rapid Diagnosis of Patients with COVID-19 Based on ANFIS. In *International Conference on Advanced Intelligent Systems and Informatics 2021* Dec 11 (pp. 338-355). Springer, Cham.
- 20- **Ahmed Fawzy**, Ahmed Magdy, Aya Hossam, "A piezoelectric MEMS microphone optimizer platform", *Alexandria Engineering Journal*, Volume 61, Issue 4, 2022, Pages 3175-3186.
- 21- **Ahmed Fawzy**, "Membraneless Piezoelectric MEMS speakers based on AlN Thin Film", *Journal of Engineering sciences JES*, Volume 50, Issue 1, 2022, Pages 1-8, DOI: 10.21608/jesaun.2021.105026.1087.
- 22- Amir Elazazy, Hala Abdel Kader, and **Ahmed Fawzy**, "Energy Harvesting System based on Piezoelectric Material" *Design Engineering*, Vol. 6, Issue 1, PP. 3418-3422, 2022.
- 23- Lang, Yiming, Chengze Liu, **Ahmed Fawzy**, Chen Sun, Shaobo Gong, and Menglun Zhang. "Piezoelectric bimorph MEMS speakers." *Nanotechnology and Precision Engineering* Vol. 5, no. 3, PP. 033001, 2022.
- 24- Samy, K., Fouda, M.A., **Fawzy, A.** and Elsayed, T., "Enhancing the Effectiveness of Strengthening RC columns with CFRP sheets." *Case Studies in Construction Materials*, Vol. 17, PP.e01588, 2022.

References: Available upon Request