Hussein Kotb, Ph.D

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ACADEMIC CREDENTIALS

Ph. D Degree, School of Electrical Engineering and Computer Science, Faculty of Engineering, University of Ottawa, Ottawa, Ontario, Canada. **2015**
Name of supervisor: Dr. Hanan Anis
Title: High-Energy Yb-Doped Femtosecond Fiber Lasers
The main objective of the thesis is to understand the parameters that contribute to limiting the pulse energy and spectral bandwidth of the mode-locked femtosecond fiber lasers. I introduce a theoretical model and some techniques that increase the pulse peak power and spectral bandwidth.

M.Sc. Degree, Electronics and Communication department, Faculty of Engineering, Ain shams University, Cairo, Egypt. **2006**
Name of supervisor: Prof. Diaa Khalil
Title: Optical generation of RF signals.
RF oscillator design with low phase noise using electro-optical interaction. This oscillator uses low-cost elements to generate high spectrally pure RF. Frequency tuning of this oscillator is done simply by simply controlling the DC laser bias current.

B.Sc. Degree, Electronics and Communication department, Faculty of Engineering, Ain shams University, Cairo, Egypt. **2002**
Rank: 4^{th} in the fourth year. 8^{th} accumulative five years.
GPA: Excellent with Honors (85%).

RESEARCH AND TEACHING INTERESTS

1. **Electronic circuit design:** I have good experience in the design of BJT and MOSFET amplifier circuits, and OPAMPS amplifier circuits.
2. **Femtosecond fiber lasers:** This was my recent research; I worked on the design and implementation of femtosecond fiber lasers for biomedical applications.
3. **Microwave circuits design:** I have good experience in Designing RF passive and active circuits. I designed a microwave amplifier and 3-dB power divider during my Master's research. I supervised undergraduate students in the design and implementation of microwave amplifiers. I gave some tutorials teaching the students how to use microwave simulators such as ADS to design microwave amplifiers. Also, I used vector network analyzers to characterize these amplifiers.
4. **Microwave photonics:** I have very good experience in designing electronic circuits that merge optical and electrical components such as laser drivers. I am supervising an undergraduate student in his graduation project to design and implement a laser driver with an input modulation bitrate of 1.25 Gb/s.
5. **Fiber Laser design:** I have very good experience designing fiber lasers for continuous wave and pulse operations. I designed and implemented mode-locked

fiber lasers during my Ph.D. work**. Also, I am supervising a Ph.D.** student working in ultra-narrow line-width continuous wave fiber laser design.

6. **Optical communication:** I have a very good understanding of the theory of operation of main optical components such as optical fibers, lasers, detectors, etc.
7. **Optical MEMS:** I have a good understanding of characterizing optical MEMS spectrometers. I joined the optics team in Si-ware systems in February 2009 for one year. My work was focused on measuring the optical resolution of the prototype of a MEMS spectrometer. During that time, I acquired a good knowledge of the principle of operation of a MEMS actuator.
8. **Fiber sensors:** I have a good understanding of designing rotation fiber sensors.
9. **Terahertz spectrometers:** I have good experience in designing Terahertz spectrometers utilizing femtosecond lasers.

TEACHING EXPERIENCE

Full-time associate professor in Electronics and Communication Engineering, Faculty of Engineering, Ain Shams University. I teach **Waves and Transmission Lines**, **Microwave Electronics Devices**, and **Applied Optical Engineering** in the Diploma program and the Professional Training program. **July 2023 – Till now**

Part-time lecturer in the Electrical Engineering Department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I taught **Electromagnetic Waves**. **Oct. 2023 – Jan. 2024**

Full-time assistant professor in Electronics and Communication Engineering, Faculty of Engineering, Ain Shams University. I teach **Waves and Transmission Lines**, **Microwave Electronics Devices**, and **Applied Optical Engineering** in the Diploma program and the Professional Training program. **Nov. 2020 – June 2023**

Full-time assistant professor at National Telecommunication Institute (NTI), Cairo, Egypt. I taught **Microwave engineering** and **optical fiber communications** in the Diploma program and the Professional Training program. **Nov. 2015 – Oct. 2020**

Part-time lecturer in the Electrical Engineering Department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I taught **Microwave electronics devices**. The main course contents are: **Aug. 2020 – Sep. 2020**

- Motion of electrons in electromagnetic fields
- Microwave tubes
- Microwave solid-state devices

Part-time lecturer in the Electrical Engineering Department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I taught **Electrical and Electronic Measurements**. The main course contents are: **Feb. 2020 – May 2020**

- Electromechanical Instruments
- Digital Basics
- Digital Instruments and Frequency meters
- Cathode Ray Oscilloscope

- Digital Oscilloscope
- Function Generators & Spectrum Analyzers
- Sensors & Transducers

Part-time lecturer in the Electronics and Communication Engineering Department, School of Communication and Information Technology, Nile University, School of Communication and Information Technology, El Sheikh Zayed, 6th of October, Giza Egypt. I taught Applied Electromagnetics. The main course contents are: **Feb. 2020 – June 2020** **Feb. 2018 – May 2018**

- Electromagnetic basic theories.
- Transmission line theory.
- Field analysis in rectangular and circular waveguides.
- Microwave network analysis
- Microwave passive circuit design
- Microwave active circuit design

Part-time lecturer in the electronic and communication department, Faculty of Engineering, Ain Shams University. I taught Microwave Electronics Engineering. The main course contents are: **Sep. 2018 – Dec. 2018**

- Motion of electrons in electromagnetic fields
- Microwave tubes
- Microwave solid-state devices

Part-time lecturer in communication systems engineering program, credit hours engineering programs, Faculty of Engineering, Ain Shams University. I taught Electrostatics and Magnetostatics. The main course contents are: **July 2018 – Aug. 2018**

- Coulomb's law and Electric field intensity
- Electric flux and Gauss's law
- Electric energy and potential
- Electric conductors and Principle of images
- Electrical capacitance
- Dielectric materials, Dipoles, and Dielectric permittivity
- Poisson's equation and Laplace's equation
- Biot-Savart law and Ampere's law
- Magnetic forces
- Magnetic torque
- Inductance

Part-time lecturer in the Electrical Engineering Department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I taught RF Microelectronics. The main course contents are: **Feb. 2018 – May 2018**

- Introduction to RF and wireless technology
- Basic concept in RF design
- Low noise amplifier design
- Introduction to passive devices

Part-time lecturer in the Electrical Engineering Department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I **Sep. 2017 – Dec. 2017**

taught Logic Design and Digital Circuits. The main course contents are:

- Introduction to digital logic circuit. Binary, octal and Hexadecimal numbers.
- Negative numbers, coded number systems. Arithmetic operations on Binary numbers.
- Logic gates. Boolean Algebra. Canonical and standard forms of Boolean expressions. Simplification of Boolean functions.
- Simplification of Boolean functions: Karnaugh map.
- Logical circuit representation of Boolean expressions.
- Combinational logic circuits: Analysis and design.
- Sequential circuits: Analysis and design.
- Registers and counters.

Part-time lecturer in the electronics and communication department, Faculty of Engineering, Azhar University, Cairo, Egypt. I taught **Microwave Engineering I**. The main course contents are: **Feb. 2017 – May 2017 March 2016 – April 2016**

- Microwave waveguides such as parallel plates, rectangular waveguides, circular waveguides, and microstrip lines.
- Microwave network analysis including impedance, admittance, scattering, and ABCD matrices.
- Detailed analysis of three-port and four-port networks.

I was a part-time lecturer in the Electrical Engineering department at the Faculty of Engineering and Technology at Future University in Cairo, Egypt. I teach **Control systems**. **Feb. 2017 – May 2017**

Part-time lecturer in the electronics and communication department, Faculty of Engineering, Azhar University, Cairo, Egypt. I taught **Microwave Engineering II**. The main course contents are: **Sep. 2016 – Dec. 2016**

- Microwave matching networks design.
- Microwave filter design.
- Microwave amplifiers design.

I was a part-time lecturer in the Mechanical Department at the Faculty of Engineering and Technology at Future University in Cairo, Egypt. I teach **Control systems** in the **Mechatronics** discipline. **Sep. 2016 – Dec. 2016**

Part-time lecturer in the electronics and communications department, Faculty of Engineering, Misr International University (MIU), Cairo, Egypt. I taught **Optical fiber communications**. The main course contents are: **Sep. 2016 – Dec. 2016**

- Detailed study of optical fiber.
- Optical sources such as light emitting diodes and laser diodes,
- Photodetectors such as PIN photodetectors and Avalanche photodetectors.
- Optical link design.

Part-time lecturer in the electrical engineering department, Faculty of Engineering and Technology, Future University, Cairo, Egypt. I taught **Optical electronics**. The main course contents are: **July 2016 – Aug. 2016**

- Black body radiation.
- Reflection and refraction of light at the interface between two dielectric media.
- Light-matter interaction in a medium
- Detailed study of gas lasers
- Detailed study of semiconductor lasers.

Part-time Teaching assistant in the School of Electrical Engineering and Computer Science, Faculty of Engineering, University of Ottawa, Ottawa, Ontario, Canada. I taught **Microwave circuits** and **electrical circuits theory**. **Jan. 2011 – April 2015**

- Effectively explained concepts to students.
- Assisted students with understanding difficult theories and course material.
- Supervised students and proctored exams.
- Gained the confidence and trust of Professors, students, and colleagues.

Part-time Teaching assistant in the Faculty of Engineering, the French University in Egypt (UFE), Cairo, Egypt. I taught **Communication**, **signal and system**, **Microwave engineering**, and **Optical electronic** courses. **Sep. 2007 – June 2009**

- Developed teaching materials, including problem sets, laboratory manuals, and exams

Full-time research and teaching assistant in the Transmission department, National Telecommunication Institute (NTI), Cairo, Egypt. I was enrolled in: **July 2003 – Aug. 2010**

- Teaching wireless CDMA course for postgraduate engineers and field engineers in ZTE, Telecom Egypt, and Mobile Service in the National Telecommunication Institute (NTI), the course includes the principles of CDMA technology in behind with the description of ZTE solutions in this field.
- Teaching digital communication & the theory of operation of Optical Time-domain Reflectometer (OTDR) in the diploma courses for postgraduate engineers.
- Teaching optical labs at the National Telecommunication Institute (NTI) for undergraduate engineers.
- Teaching optical network courses for postgraduate engineers and field engineers as a part of the Nortel training course at the National Telecommunication Institute (NTI).
    - The course includes the SDH networking for optical fiber networks in behind with a description of Nortel solutions in this field.
- Teaching Radio Network Engineering course for postgraduate engineers and field engineers as a part of the

GSM ALCATEL training course in the National Telecommunication Institute (NTI).
  - The course includes the basics of Radio Network planning for both cellular networks and microwave transmission Networks.

Full-time teaching assistant in the Physics and Mathematics department, Faculty of Engineering, Ain Shams University, Cairo, Egypt. **Sep. 2002 – May 2003**

WORK EXPERIENCE

Academic Coordinator of Communication Systems Engineering in Electronics and Communication Engineering, Faculty of Engineering, Ain Shams University. **Sept. 2024 – Till now**

Full-time associate professor in Electronics and Communication Engineering, Faculty of Engineering, Ain Shams University. **July 2023 – Till now**

- Supervising the undergraduate labs.
- Participating in the national and international accreditation of the Electronics and Communication Engineering.

Participating in the national and international accreditation of the Electronics and Communication Engineering.

Full-time assistant professor in Electronics and Communication Engineering, Faculty of Engineering, Ain Shams University. **Nov. 2020 – June 2023**

- Supervising the undergraduate labs.
- Participating in the national and international accreditation of the Electronics and Communication Engineering.

Full-time assistant professor in the transmission department, National Telecommunication Institute (NTI), Cairo, Egypt. **Nov. 2015 – Oct. 2020**

- Working cooperatively with other researchers to improve the productivity of the department.
- Purchasing new optical and electronic components and equipment to develop the department.
- Supervising PhD and MSc students.
- Participating in establishing optical fiber training labs and determining the technical specifications of the test equipment that must be used in these labs.

Co-principal investigator of Information Technology Academia Collaboration (ITAC) Preliminary Research Project entitled: "Tunable ultra-low phase noise MEMS-based optoelectronic oscillator at LTE frequency bands". This project is held Laboratory of Micro-Optics, Faculty of Information Engineering and Technology, German University in Cairo (GUC), Egypt. I work as a part-time assistant professor during the period of the project. **Sep. 2018 – June 2019**

Part-time senior engineering in Si-ware system company, Cairo, Egypt **Nov. 2017 – June 2018**

- Working in the research and development of the MEMS spectrometers designed by Si-ware systems.

Part-time position at the American University in Cairo (AUC) **Nov. 2015 – June 2016**

- Worked on the design and implementation of a Terahertz spectrometer for detecting chemicals. This spectrometer can some chemicals that have absorption peaks in the Terahertz region either in the transmission or reflection mode.

Part-time senior engineering in Si-ware system company, Cairo, Egypt **Feb. 2016 – Oct. 2016**

- Worked in the research and development of new optical setups for detecting chemicals using the MEMS spectrometers designed by Si-ware systems.

Part-time research assistant in the optical communication and laser laboratory, Electronics and Communication department, Faculty of Engineering, Ain Shams University, Cairo, Egypt. I worked on a project of optical fiber sensors. **Feb. 2009 – Aug. 2010**

Part-time optical design engineer in Si-ware system company, Cairo, Egypt **Feb. 2009 – Jan. 2010**

- Tested the optical performance of the miniature optical spectrometers.

Full-time research assistant in the optical communication and laser laboratory, Electronics and Communication department, Faculty of Engineering, Ain Shams University, Cairo, Egypt. I worked in a project on optical fiber sensors. **Feb. 2008 – Jan. 2009**

- Worked cooperatively with other research assistants to conduct the research background.
- Prepared the technical specifications of all optical and electronic components.
- Conducted experimental set-ups to evaluate the performance of the purchased components.
- Built co-operatively with other research assistants the optical fiber sensor system.

Working with the consultant group in NTI to design and upgrade the Microwave networks (North and Eastern Sectors) of the petroleum pipe company (PPC). **July 2003 – Aug. 2010**

HONORS, CERTIFICATE & SCHOLARSHIP

Five years holder of the Student Outstanding Performance Award from Ain Shams University. **Sep. 1997 – June 2002**

Collaborative Research and Training Experience (CREATE) program funded by the Natural Sciences and Engineering Research Council of Canada for my Ph. D studies. **Sep. 2010–March 2015**

International Society for Optics and Photonics (SPIE) Scholarship for graduate students. **May 2011**

Best scientific publication from Misr Elkheir Foundation in 2013 for: **Hussein E. Kotb**, M. Y. Shalaby, and M. H. Ahmed," Generation of nanosecond optical pulses with controlled repetition rate using in- **Feb. 2013**

cavity intensity modulated Brillouin Erbium Fiber Laser", Progress In Electromagnetics Research (PIER), vol. 113, pp: 313 – 331, 2011.

Training certificate from Teaching and Learning Support Service, University of Ottawa. **Sep. 2015**

The 1st place in the best paper award to the paper "Tunable Microwave Single-Bandpass Photonic Filter Based on Amplified MEMS-Based Gires–Tournois Interferometer" at National Radio Science Conference (NRSC), 37th, 2020. **Sep. 2020**

The 2nd place in the best paper award to the paper "S-Matrix Analysis of Dense Wave-division Demultiplexer Based on Add/drop Ring Resonators Structures" in National Radio Science Conference (NRSC), 40th, 2023. **May 2023**

THESES SUPERVISION

1. Heba Ahmed Shawki Mohamed, "Narrow Line-width Single Mode Optical Random Fiber Laser," Doctor of Philosophy in Electrical Engineering, Ain Shams University, 2018.
2. Ahmed Mohammed Ahmed Sayed Othman "Pulsed Operation of MEMS Interferometers," Master of Science in Electrical Engineering, Ain Shams University, 2018.

CONFERENCE PRESENTATION

1. S. R. Elsehimy, K. Kallaf, **Hussein E. Kotb**, S. F. Hegazy, and H. Omran, "Automated Quantum State Tomography of Four Bell States Generated by Compact SPDC Source," in *Quantum 2.0 Conference and Exhibition*, Technical Digest Series (Optica Publishing Group, 2024), paper QW2A.6. **2024**
2. Mayar Magdy, Alaa Fathy, **Hussein E. Kotb**, Ahmed Samir, Diaa Khalil, "An imaging homogenizer for DLP-based 3D printer," Proc. SPIE 12899, MOEMS and Miniaturized Systems XXIII, 128990Q (12 March 2024); https://doi.org/10.1117/12.3005186 **2024**
3. Mohamed N. Ali, **Hussein E. Kotb**, Kirollos E. Matta, Diaa Khalil, "Wavelength tunable filter based on MMI in optical fibers," Proc. SPIE 12882, Optical Components and Materials XXI, 128820S (8 March 2024); https://doi.org/10.1117/12.3001439 **2024**
4. **Hussein E. Kotb**, Yasser M. Sabry, A. Mahfouz, and Haitham Omran, "Fourier Optics Modeling of Deeply Etched Silicon Cavities with Submillimeter Gap for Optical Sensing Applications," in Optica Sensing Congress 2023 (AIS, FTS, HISE, Sensors, ES), Technical Digest Series (Optica Publishing Group, 2023), paper SM4D.3. **2023**
5. M. A. Mansour, Rabab A. Shalaby, Abdelrahman Nasser, Kareem Owis, **Hussein E. Kotb**, Haitham Omran, Diaa Khalil, "S-Matrix Analysis of Dense Wave-division Demultiplexer Based on Add/drop Ring Resonators Structures," *2023 40th National Radio Science Conference (NRSC)*, Giza, Egypt, 2023, pp. 245-252, doi: 10.1109/NRSC58893.2023.10152956. **2023**
6. Osama Terra, H. M. Hussein and **Hussein E. Kotb**, "Distance Measurement System Based on Mode-Locked Laser," *2023 International Microwave and* **2023**

Antenna Symposium (IMAS), Cairo, Egypt, 2023, pp. 211-214, doi: 10.1109/IMAS55807.2023.10066928.

7. **Hussein E. Kotb**, Yasser M. Sabry, Mohab S. Abdallah and Haitham Omran, "MEMS-SOA Tunable Optoelectronic Oscillator," *2022 39th National Radio Science Conference (NRSC)*, Cairo, Egypt, 2022, pp. 289-292, doi: 10.1109/NRSC57219.2022.9971320. **2022**
8. **Hussein E. Kotb**, Yasser M. Sabry, Mohab S. Abdallah, Marwan O. M. Sayed, and Haitham Omran, "Tunable Microwave Single-Bandpass Photonic Filter Based on Amplified MEMS-Based Gires–Tournois Interferometer," National Radio Science Conference (NRSC), 37th, 2020. **2020**
9. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Comprehensive study on the parameters affecting the line-width and stability of SOA-based SLM Random Fiber Laser," Proc. SPIE 11260, Fiber Lasers XVII: Technology and Systems, 1126028 (21 February 2020). **2020**
10. Ahmed M. Othman, **Hussein E. Kotb**, Yasser M. Sabry, and Diaa Khalil, "Combined MEMS FTIR Spectrometer and Widened-Spectrum Mode-Locked Fiber Laser for Gas-Sensing," The European Conference on Lasers and Electro-Optics and European Quantum Electronics Conference, 2019, ch_p_12. **2019**
11. **Hussein E. Kotb**, Mohab S. Abdallah, Hussein Elhehyawy, Yasser M. Sabry, and Haitham Omran, "MEMS-Based Tunable Single-Passband Microwave Photonic Filter," The European Conference on Lasers and Electro-Optics and European Quantum Electronics Conference, 2019, ci_p_7. **2019**
12. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Narrow line width dual wavelength EDFA based random fiber laser," National Radio Science Conference (NRSC), 35th, 2018, P: 433-438. **2018**
13. Ahmed M. Othman, **Hussein E. Kotb**, Yasser Sabry, and Diaa Khalil, "MEMS-based Fourier transform spectrometer using pulsed infrared light source," SPIE Proceedings Volume 10545, MOEMS and Miniaturized Systems XVII 2018, p: 105450Y (1 – 8). **2018**
14. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Narrow line width dual wavelength random laser," SPIE Proceedings Volume 10512, Fiber Lasers XV: Technology and Systems 2018, p: 105122D (1 – 7). **2018**
15. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Narrow line width semiconductor optical amplifier based random laser," SPIE Proceedings Volume 10083, Fiber Lasers XIV: Technology and Systems 2017, p: 100832C (1 – 5). **2017**
16. Haitham Omran, **Hussein E. Kotb**, and Diaa Khalil, "Dual wavelength SOA based fiber ring laser," SPIE Proceedings Volume 10083, Fiber Lasers XIV: Technology and Systems 2017, p: 1008322 (1 – 11). **2017**
17. **Hussein E. Kotb**, Mohamed A. Abdelalim, and Hanan Anis, "Effect of mode locking technique on the filtering bandwidth limitation in all normal dispersion femtosecond fiber laser," SPIE Proceedings Volume 8961, Fiber Lasers XI: Technology, Systems, and Applications, 2014, p: 89613A (1 – 11). **2014**
18. Katherine J. Bock, **Hussein E. Kotb**, Mohamed A. Abdelalim and Hanan Anis," Increasing energy in an ytterbium femtosecond fiber laser with a longer **2012**

gain medium and lower doping", SPIE photonic west conference 2012, p: 823731 (1 – 7).

19. **Hussein E. Kotb**, and Diaa Khalil, "Multiple quantum well laser diode parameter extraction using the IM response", EUROCON, The International Conference on "Computer as a Tool", p: 1256 – 1262. **2007**
20. **Hussein E. Kotb**, A. M. E. Safwat, H. Boghdady, and D. A. M. Khalil," Tuning of an RF optoelectronic oscillator", Microwave Photonics. MWP '06. International Topical Meeting, 2006, p: 1 – 4. **2006**

PEER REVIEWED PUBLICATIONS

1. Osama Terra, Warren Jin, **Hussein E. Kotb**, Joel Guo, John E. Bowers, "Correction of laser sweeping nonlinearities using ultralow-loss on-chip 7 m spiral resonators," Photon. Res. 13, 40-48, 2025, doi: 10.1364/PRJ.524620.
2. Osama Terra, Warren Jin, **Hussein E. Kotb**, Joel Guo, John E. Bowers, "Ultralow-loss spiral resonators for precise LiDAR," arXiv:2407.19360v1, 2024.
3. Ahmed M. Othman, Hussein E. Kotb, Mohamed A. Abdelalim, Yasser Sabry, Hanan Anis, and Diaa Khalil, "Numerical Study of Parabolic Pulse Generation in Backward-pumped Erbium-doped Fiber Amplifiers," IEEE Photonics Journal, vol. 14, no. 4, pp. 3346708(1-8), 2022, doi: 10.1109/JPHOT.2022.3195902.
4. Yasmine I. Abdelhak, Fady Kamel, Moustafa Hafez, **Hussein E. Kotb**, Haitham A. Omran, Tawfik Ismail, Hassan Mostafa, "Radio Optical Network Simulation Tool (RONST)," CMC-Computers, Materials & Continua, vol. 71, no. 2, pp. 3685–3702, 2022, doi:10.32604/cmc.2022.022470.
5. Osama Terra, Haitham M. Hussein, and **Hussein Kotb**, "Soliton mode-locked fiber laser for distance measurements," vol. 60, no. 12, pp. 3452-3457, 2021, Appl. Opt., doi: 10.1364/AO.422003
6. **Hussein E. Kotb**, Yasser Sabry, M. S. Abdallah and Haitham Omran, "MEMS-SOA Spectrum-Sliced Auto-Equalized Source Enabling Uniformly Tunable Microwave Photonic Filter," vol. 33, no. 1, pp. 15-18, 1 Jan.1, 2021, IEEE Photonics Technology Letters, doi: 10.1109/LPT.2020.3041439.
7. Ahmed M. Othman, **Hussein E. Kotb**, Yasser Sabry, and Diaa Khalil, "Micro–Electro–Mechanical Fourier Transform Infrared (MEMS FT-IR) Spectrometer under Modulated/Pulsed Light Source Excitation," *Applied Spectroscop*y, vol. 74, no. 7, pp: 799-807, 2020.
8. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Modeling and characterization of a dual-wavelength SOA-based single longitudinal mode random fiber laser with tunable separation," *OSA Continuum*, vol. 2, no. 2, pp: 358-369, 2019.
9. Ahmed M. Othman, **Hussein E. Kotb**, Yasser Sabry, Osama Terra, and Diaa Khalil, "Toward On-Chip MEMS-Based Optical Autocorrelator," *Journal of Lightwave Technology*, vol. 36, no. 20, pp: 5003-5009, 2018.
10. Mohamed A. Abdelalim, **Hussein E. Kotb**, Ebin Joseph, Ahmed M. Othman, and Hanan Anis, "Experimental and Numerical Demonstration on the Gain and Power Saturation of Yb-Doped Double-Clad Fiber Amplifiers in Multiwavelength CW and Ultrafast Pulsed Operation," *IEEE Photonics Journal*, vol. 10, no. 1, pp: 7100212(1-13), 2018.
11. Heba Shawki, **Hussein E. Kotb**, and Diaa Khalil, "Single-longitudinal-mode broadband tunable random laser," *Optics Letters*, vol. 42, no. 16, pp: 3247 – 3250, 2017.

12. Mohamed A. Abdelalim, **Hussein E. Kotb**, Hanan Anis, and Serguei Tchouragoulov, "Power-scaled dissipative soliton using double-cladding-pumped Yb-doped all-fiber amplifier," *Photonics Research*, vol. 4, no. 6,pp: 277 – 280, 2016.
13. **Hussein E. Kotb**, Mohamed A. Abdelalim, and Hanan Anis, "Generalized analytical model for dissipative soliton in all normal dispersion mode locked fiber laser," *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 22, no. 2,pp: 1100209 (1 – 9), 2016.
14. **Hussein E. Kotb**, Mohamed A. Abdelalim, and Hanan Anis, "Effect of narrow spectral filter position on the characteristics of active similariton mode-locked femtosecond fiber laser," *Optics Express*, vol. 23, no. 23, pp: 29660 – 29674, 2015.
15. **Hussein E. Kotb**, Mohamed A. Abdelalim, and Hanan Anis, "An efficient semi-vectorial model for all-Fiber mode-locked femtosecond lasers based on nonlinear polarization rotation" *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 20, no. 5, pp: 1100809 (1 – 9), 2014.
16. **Hussein E. Kotb**, Mohamed A. Abdelalim, Katherine J. Bock and Hanan Anis, "Peak power optimization of optical pulses using low-doped gain-medium in femtosecond fiber laser" *IEEE Journal of Lightwave Technology*, vol. 31, no. 13, pp: 2230 – 2236, 2013.
17. **Hussein E. Kotb**, M. Y. Shalaby, and M. H. Ahmed," Generation of nanosecond optical pulses with controlled repetition rate using in-cavity intensity modulated Brillouin Erbium Fiber Laser", *Progress In Electromagnetics Research (PIER)*, vol. 113, pp: 313 – 331, 2011.
18. **Hussein E. Kotb**, A. M. E. Safwat, H. Boghdady, Diaa A. Khalil, "RF optoelectronic oscillator using a directly modulated semiconductor laser and a fiber optical ring filter", *Microwave and Optical Technology Letters*, vol. 21, no. 2, pp: 470:475, 2009.

PATENTS

Osama Terra and **Hussein Kotb**, "Method and apparatus for distance measurement using Ring lasers," patent pending in Academy of Scientific Research & Technology, Ministry of Scientific Research, Arab Republic of Egypt.

LANGUAGES

Arabic: Native Language.
English: High command of speaking and writing the language.

MEMBERSHIPS

International Society for Optics and Photonics (SPIE) member.
Institute of Electrical and Electronics Engineers (IEEE) member.
Egyptian Engineers Syndicate.
Egyptian Telecommunication Workers Syndicate.

VOLUNTEER WORK

Treasurer of the University of Ottawa SPIE student chapter board 18 months

This student chapter has student members from different nationalities, such as Chinese, Canadian, etc. We organized a lot of events to inspire postgraduate students to join the photonics and optics field of interest. We prepared photonics lab visits for undergraduate and postgraduate students. We invited the president of SPIE in 2014, Prof. Philip Stahl**,** to give us a talk at the University of Ottawa. We organized an elevator pitch contest and SPIE professional development workshops in 2014. Also, we organized a couple of solar and moon observation events in 2014 and 2015.

HARDWARE TECHNICAL SKILLS

Very good experience in using vector network analyzers, microwave oscilloscopes, RF spectrum analyzers, and optical spectrum analyzers.
Very good experience in interfacing measuring instruments such as RF/ Optical spectrum analyzers, tunable laser modules, and oscilloscopes with computer via GPIB interface.
Very good experience in using Arc fusion Splicing Machines that perform splicing of SM, MM, and PM optical fiber cables.
Very good experience in using OTDR
Very good experience in performing terminating connectors for optical fiber cables.

SOFTWARE TECHNICAL SKILLS

Very good knowledge in Windows operating system
Very good knowledge in major Office applications.
Very good knowledge in using Internet.
Very good knowledge in software aided design:

- Microwave office (RF design Package).
- Advanced Design System (ADS-RF design Package).
- Optiwave (Optical design Package).
- Rsoft design (Optical design Package).
- Lumerical (Optical design Package).

Very good knowledge in using Matlab.

REFERENCES

Dr. Hanan Anis
My Ph. D supervisor
School of Electrical Engineering and Computer Science, Faculty of Engineering, University of Ottawa, Ottawa, Ontario, Canada.
Email: hanis@uottawa.ca

Prof. Pierre Berini
University Research Chair in Surface Plasmon Photonics
School of Electrical Engineering and Computer Science, Faculty of Engineering, University of Ottawa, Ottawa, Ontario, Canada.
Email: pberini@uottawa.ca

Prof. Diaa Khalil.
My M.Sc. supervisor
Electronics and Communication department, Faculty of Engineering, Ain shams University, Cairo, Egypt.
Email: diaa_khalil@eng.asu.edu.eg

Prof. Mahmoud Hanafi Ahmed.
The principal investigator of the fiber sensor project
Electronics and Communication Department, Faculty of Engineering, Ain shams University, Cairo, Egypt.
Email: mahmoud.hanafi@eng.asu.edu.eg