

# *RESUME of Mohamed Otman Twati*



## **Biography**

I received the B.Sc. and M.Sc. degree in electrical engineering from Tripoli University, Tripoli, Libya in 1981, 1991 respectively. In 2001, I earned the Ph.D. degree in electrical and computer engineering in the field of guided-wave photonics, from McGill University, Montreal, Canada, where I also worked as a Research Assistant in the field of optical guided-wave devices as well as a Teaching Assistant, with duties that include both laboratory and tutorial instruction.

From 1981 to 1984, I was employed by the Secretariat of Energy Tripoli, Libya as an Electronic Research Engineer where I was engaged in the evaluation of Instrumentation and Control systems of the proposed Electrical Power Plant, and in the operational testing of Tajura Research Center (TRC).

From 1984 to 1987 I worked as a Research Engineer in Tajoura Research Center dealing with the design and simulation of field effect transistor circuits.

From 1987 to 1995 I was employed by the Postgraduate Center for Electro-Optics, Tripoli-Libya as an Electro-Optic Research Engineer, and after that as a Research group Leader, where I was involved in the design and fabrication of fast discharge laser systems and their power supplies.

From 1993 to 1994 I was also engaged in part-time instruction and Diploma supervision with the Engila High Institute of Technology, Tripoli, Libya.

From 2002-2006 I was employed by the Ecole Poly-technique De Montreal, with the Poly-Grames Research Group, Department of Electrical Engineering, as a Post-Doc fellow in the field of radio-over fiber communication systems (2002-2004) and also with the Photonics Research Group, Department of Engineering Physics as a Research Associate (2004-2006) where I was involved in the design, simulation and fabrication of optical guided-wave devices.

From 2006-2009 I was working at the Research Center for Renewable Energies and Water Desalination, Tajoura, doing research in the field of lasers and optical guided-wave devices. In the mean time, I was engaged in Business incubators working as a group leader of a committee for establishing Renewable Energy Technology Incubator (IRET)-The National Bureau for Research and Development. Beside that I taught courses of Electromagnetic fields and waves at the Electrical & Electronic Engineering Department- Tripoli University (2007-2009). I was also engaged with Optical Engineering Department Iben-Mandor High Institute, and Communication Department of 2-March

High institute of Technology in teaching courses of Electronics and Opt-electronics along with a lab course demonstration.

From 2009 up to now I have been working at Tripoli University- Electrical & Electronic Engineering Department, as a university staff member -Associate Professor (Full Time Job).

## Education

- 2001 Ph.D.** In Electrical Engineering, Electrical & Computer Engineering department, McGill University, Montreal, Canada.  
*Ph.D. Thesis:* Design, Simulation and Fabrication of a 3-wavelength Optical Demultiplexer in Glass.
- 1991 M.Sc.**, In Electrical Engineering, Electrical & electronic Engineering department, University of Tripoli, Libya.  
*M.Sc. Thesis:* Parametric studies of a locally designed fast discharge N<sub>2</sub> Laser.
- 1981 B.Sc.** In Electrical Engineering, Electrical & electronic Engineering department, University of Tripoli, Libya.

## Publications

- 2019 MO Twati and M Dorar**, 'A Novel Double Blumlein-Line Nitrogen Laser Circuit Analysis Based Distributed Parameters Model: Laser Source and Laser Amplifier', *International Journal of Scientific Engineering and Technology*. vol. 6, 2019, pp. 27-31.
- 2019 MO Twati**, 'Output waveforms of Blumlein-line Nitrogen Laser Circuit Based on the Distributed Parameter Model: Theoretical and Experimental Results' *International Journal of Computer Science, Communications & Information*. vol. 7, 2019, pp. 48-55.
- 2018 Mohammed Ben Saeed and Mohamed Twati**, 'Fiber-Optic Temperature sensor Design adapted for Libyan environment', published in the First Conference for Engineering Sciences and Technology (CEST-2018).
- 2017 Mohamed Twati** and Abubaker Ben Otman, 'A Modified Approach for the Blumlein-line Laser Power Calculations: Electrical and Optical Power waveforms', **Journal of Wireless Communications** 2017, 2 (1), pp.1-6.
- 2015 Mohamed Twati** and Abubaker Ben Otman, 'Power Calculations of a Blumlein-line Laser Circuit including the Effect of the Laser-Gap Inductance', **AJCITA Journal**, vol. 2, no. 1, July 2015, pp. 55-58.
- 2014 Mohamed Twati**, Mahmud M. Badi, Adam F. Adam, 'Analysis of rain effects on free space optical communication based on data measured in the Libyan climate', **IJIEE Journal**, vol. 4, No. 6, November 2014, pp. 469-472.
- 2014 Mohamed Twati**, 'A Full Distributed Parameter Model of a Blumlein-line Laser Circuit Including the Effect of the Time Varying Spark-gap Inductance and Resistance', *IEEE Canadian Conference On Electrical and Computer Engineering, Toronto CA, 4-7 May 2014, IEEE CCECE2014*, pp.282-285.

- 2014** Mohamed Twati, 'A Novel Distributed Parameter Model of a Blumlein-line Laser Circuit Including the Effect of the Time Varying Spark-gap Inductance and Resistance', **International Conference on Computer Modeling and Simulation UKSIM2014, Cambridge UK, 26-28 March 2014, IEEE Computer Society**, pp.586-589.
- 2013** Mohamed Twati, 'Distributed Parameter Model of a Blumlein-line Laser Circuit Including the Effect of the Time Varying Spark-gap Resistance', **European Modeling Symposium EMS2013, Manchester UK 20-22 November 2013, IEEE Computer Society**, pp. 674-677
- 2013** Mohamed O. Twati, 'A Full Distributed Parameter Model of a Blumlein- line N2 laser circuit including the effect of laser-channel and spark-gap capacitances', **World Academy of Science, Engineering and Technology**, vol. 76, **April 2013**, pp. 378-381.
- 2006** Hraimel, Mohamed O. Twati, Ke Wu, 'Closed-form dynamic range expression of Dual-electrode Mach-Zehnder in Radio over fiber WDM system', **IEEE Journal of Lightwave Technology**, vol. 24, No. 6, **June 2006**.
- 2004** Mohamed O. Twati, 'Design and Simulation of 3-wavelength optical Demultiplexers (WDM)', **Conference, Montreal University, Electrical Engineering, July 2004**.
- 2002** Mohamed O. Twati, Tom Pavlasek, 'A three-wavelength Mach-Zehnder optical demultiplexer by one step ion-exchange in glass', **Journal of Optics Communications**, 206(2002) 327-332.
- 2000** Mohamed O. Twati, G. L. Yip and H. K. Fung, 'Design, BPM Simulation and Optimization of Mach-Zehnder 3-wavelength Demultiplexer based on Runge-Kutta Method', **IEEE CCECE 2000 Conference Proceedings, May 7-10, 2000**, Halifax, Nova Scotia, Canada.
- 1993** Mohamed O. Twati, Aboubaker Ben Otman. 'Distributed parameter analysis of a Blumlein-Line N2 Laser', **Journal of Optics Communications**, 99(1993) 405-412.
- 1989** Mohamed O. Twati, M. A. Gondal, 'Coaxial cable N2 Laser', **Applied Physics Conference, University of Tripoli, Tripoli, Libya, 1989**.
- 1987** Mohamed O. Twati, 'Design and Fabrication of fast discharge pulsed N2 Laser'. **First International Physics Conference on physics**, paper C-3(3-6 July 1988), Tripoli, Libya, **1988**.

**Citation index** (See <https://scholar.google.com/citations?user=DEh8rd0AAAAJ&hl=en&oi=ao>)  
(For Mohamed Twati, for more new citations up to 2024)

**Mohamed O. Twati et al, IJIEE Journal, vol. 4, No. 6, November 2014.**

**2023** Aras S. Mahmood, Opto-Electronics Review, 30 Aug. 2023.

**Mohamed O. Twati et al, IEEE J. Lightwave Technology, Vol. 24, No. 6, June 2006.**

- 2011** Muhammed Taher Abuelmaatti, Design Feature, Microwave & RF, **September 2011**.
- 2010** B. Cabon, SID Transactions: D, Vol. 17, NO 2, **December 2010, p. 149**.
- 2010** Muhammad Taher, 2010 17<sup>th</sup> IEEE International conference on Telecom., **p. 528**.
- 2009** Hraimel et al, Journal of Optical Communications and Networking, Vol. 1., No. 4, **August 2009**.

- 2008** Mohmuod Mohamed et al, Opt. Express Vol. 16, No. 14, **July 2008. p. 10141.**
- 2008** Mohmuod Mohamed et al, Opt. Express Vol. 16, No. 14, **July 2008. p. 10786.**
- 2008** Mohmuod Mohamed et al, IEEE Journal of Lightwave Technology, Vol. 26, NO 15, **August 2008.**

**Mohamed O. Twati et al, Optics Communications Vol. 206, p.327 (2002).**

- 2007** Yaw-Dong Wu, Min-Lun Huang, Opt. Express Vol. 15, No. 16, **August 2007.**
- 2007** Chih-Wen Kuo et al, Opt. Express Vol. 15, No. 2, **March 2007.**
- 2004** Noam Kinrot, IEEE Journal of Lightwave Technology, Vol. 22, NO. 10, **October 2004.**

**Mohamed O. Twati et al, IEEE Canadian, ECE Conference Pro, Vol. 2, p. 846 (2000).**

- 2002** M T.J.F. Pavlasek et al, Optics Commun. Vol 206, **2002**, p. 327.
- 2004** Kok Swee Leong et al, ICSE2004. IEEE International Conference Semiconductor Electronics, 7-9 Dec. 2004.

**Mohamed O. Twati et al, Optics Communications , Vol. 99, p.405 (1993).**

- 2010** Han, Sang-Bo et al, JIEIE Journal Vol. 24, **2010**, p. 99.

## Area of interest

- Research in the field of Optical waveguides (devices and systems) and applications,
- Laser devices and laser systems.
- Optical communication systems.

## Research & Teaching experiences

- 2007 – now** University teaching staff member in the electrical engineering Department University of Tripoli.
- 2006 – 2008** High Institute teaching a staff member in the electrical engineering Department Iben-Mandor, Tripoli.
- 2008 – 2009** High Institute teaching staff member in the electrical engineering Department 2-March, Tripoli.
- 2006 – 2009** Research Scientist, Tajoura Nuclear Research Center. Area of research: Laser systems and Optical Guided wave devices.
- 2006 – 2008** Consultant, the National Bureau for Research and Development. Area of consultation: Business incubation.
- 2004 – 2006** Research Associate, Ecole Poly-Technique, Engineering physics Department, Montreal, Canada. Area of research: Optical guided wave devices.
- 2002 – 2004** Post-Doctor fellow, Ecole Poly-Technique, Electrical Engineering Department, Montreal, Canada. Area of research: Radio-Over- Fiber Optical link design.

- 1996-2001** Ph.D. Researcher, Research Assistant and Teaching Assistant, McGill University, Electrical & Computer Engineering, Montreal, Canada. Area of research: Optical Guided-Wave Devices.
- 1987 -1995** Research Scientist, Post-Graduate Center for Electro-Optics, Tripoli. Area of research: design, fabrication and modeling of fast discharge laser systems.
- 1990- 1994** Research group leader. Post-Graduate Center for Electro-Optics, Tripoli. Area: Designing and fabrication of electro-optical Devices.
- 1993-1994** High Institute teaching staff member in the electrical engineering Department, Engila High Institute of Technology, Tripoli. Supervision on research projects: Design and fabrication of a High voltage power supply for He-Ne Laser.
- 1984 -1987** Electronic Research Engineer, Tajoura Nuclear Research Center. Electronics.
- 1981-1984** Research Engineer, Power Sector, Secretariat of Energy, Tripoli, Libya. Instrumentation and Control.

## Courses taught

- 1- Advanced Math course. (M. Sc. Level).
- 2- Electromagnetic I. (B. Sc. level).
- 3- Electromagnetic II. (B. Sc. level).
- 4- Electromagnetic III. (B. Sc. level).
- 5- Optical waveguides. (B. Sc. level).
- 6- Optical-electronics. (B. Sc. level).
- 7- Communication Techniques. (B. Sc. level).

## Scientific Activities and Professional Affiliations

- 2010- now** IEEE member.
- 2014-2022** Member of the Academic Program Office of the college of Engineering (Tripoli-Libya)
- 2014** A member of Technical Program Committee (TPC) of the **International Journal of Computing and Digital systems-V3, IJCDS'V.**
- 2010** A member of the committee of the fifth Libyan Arab International conference on Electrical and electronic Engineering 2010.
- 2006-2008** Member of the Establishing Committee of Renewable Energy Technology Incubator National Bureau of Research and Development Tripoli.
- 2007** External examiner, University of Tripoli, Department of Electrical Engineering (Gefara).
- 2007** External examiner, Iben-Mandor High Institute, Department of Optical Engineering.
- 2001-2006** Member of the IEEE Lasers and Electro Optics Society (LEOS), Montreal, Canada.
- 2000** IEEE Student member.
- 1993** Member of the New York Academy of Science, 1993.

- 1989** Member of the organizing committees of the second Libyan Conference on Electrical and Electronic Engineering, University of Tripoli, Tripoli, Libya.
- 1988** Member of the organizing committees of International Energy Foundation Conference, Energex 88, Tripoli Libya.
- 1987** Member of Libyan Engineers' Society.
- 1985** Member of the organizing committees of the First Libyan Conference on Electrical and Electronic Engineering, University of Tripoli, Tripoli, Libya.
- 1981** Member of Libyan Scientific Society.

## **M.Sc. & B.Sc. Examiner**

**2007-2024** worked in many committees as an examination committee member for Master's and Bachelor's Degrees

## **Training**

- 2006** 4<sup>th</sup> MENA inc Workshop (Business incubation) Tunis, Tunisia.
- 1995** English as a Second Language (ELS), Queen's University, Kingston, Canada.
- 1992** Opto-Electronic workshop, Munster, Germany.
- 1988** School of Quantum Electronics, Sunny Beach, Bulgaria.
- 1982-1983** Computer applications, Siemens Company, Munich Germany.

## **Scholarships**

- Libyan PhD Scholarship (1995-2001).
- University of McGill Graduate Scholarship(1999-2001) .

## **Grants**

- NSERC (Natural Science and Engineering Research Council of Canada) 1999-2001.
- NSERC (Natural Science and Engineering Research Council of Canada) 2002- 2004.