

C.V

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Present Employment: **Associate Prof.** – Electronics & Electrical Comm.Eng.Dept. -Faculty of Electronic Eng. Minuf, Minufiya University, EGYPT
Starting Date of present Employment: 28 -06-2007

Previous Employment:

- (1) Demonstrator: From 06/12/1977 to 31/10/1982 - The same Place
- (2) Assistant Lecturer: From 01/11/1982 to 29/04/1989 - The same Place
- (3) Lecturer: From 30-04-1989 to 27-06-2007 -The same Place

Academic Qualifications :

- (1) B.SC. Electronic Engineering (Wire Communications) may 1977, very good, Minufiya university, EGYPT
- (2) M.SC. Electronic Engineering (Digital Communications) August 1982, Minufiya University, EGYPT
- (3) Ph.D.Electronic Engineering (Optical Communications) Jan.1989, with cooperation between Minufiya University (EGYPT) and IMEP(LEMO) (Grenoble – FRANCE)

Title of Ph.D. Thesis: "Wavelengths Optical Demultiplexing using Thin cFilm Waveguides"

Post-Doctoral Research: From 21-07-2007 to c 20-01-2008 – Liverpool University – England

Field of Research: Integrated Optics Applications- Optical Fiber Comm. Systems- Digital Comm.- Solar Cells –Chromatic Systems.

SUMMARY

Ion exchange of soda-lime glass substrates is well known as a Simple method of forming optical planar waveguides. The increase in surface refractive index, and hence the effective indices of the guided modes depend upon the ion exchanged with the sodium in the glass. Waveguides with two different effective modal indices for the fundamental mode are required to form thin homogeneous lenses, and ion-exchanged waveguides of the two types formed on the same substrate could be suitable for this purpose.

During the course of experiments into the production of both types of waveguides, we have experimented with a double exchange, into the same microscope slide substrate. The waveguides resulting from the two exchanges depended strongly on how the silver exchange took place.

We have used the silver exchange to provide a simple masking process, where a single negative film mask allows the formation of low effective single-mode waveguide over parts of the the formation of low effective single-mode waveguide over parts of the substrate, and high effective index multimode waveguide over the remainder. An evaporated aluminium mask is first formed on the substrate, the negative mask is dissolved away, and the substrate placed in a dilute melt of silver nitrate in sodium nitrate at certain concentration, temperature, and time, the parts of the substrate preventing exchange, where there is a layer of aluminium. The layer of aluminium is then removed, and the substrate placed in the same previous solution at certain temperature and time also. We have this

method to realize an integrated-optic demultiplexer using a type of diffraction gratings known as Michelson's echelon grating to separate different wavelengths laser beams. The theoretical performance is given for the proposed optical demultiplexer. The intensity at the output of the grating and the angle of diffraction for both beams and hence, the angle between them are calculated at different incident angles. The resolution and the resolving power of the demultiplexer are determined. The description of the experimental steps to realize the demultiplexer is given. The characteristics of the waveguides and components of the practical model are given. The practical results are compared with the calculated ones.

Publications:

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[2] A.Samra, O.Oraby, L.Gomma, and G.Chartier" Double- Potassium-Silver Ion-Exchange in Glass Substrate" Second International Conference on Micro-Electronic Engineering and its Applications in Micro computers in Developing Countries, Dec. 20-40, 1987, El-Kanatter El-khairia, Egypt.

[3] G.Chartier, L.Gomma, O.Oraby, and A.Samra" Etude Experimental du Double Exchange dans le verre" Neuviemes Journees nationales d'optique gidee, Mars, 24-25, 1988, Iut de Lannion, France.

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[5] M.L.Rabeh, A.S.Samra, O.A.Oraby" Effect of Modal Dispersion on the Optimization of the Reflection Coefficient of Corrugated Planar optical Waveguides" Minufiya Journal of Electronic Engineering Research , vol.14, no.1 and 2, January-July 2004.

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[9] Hossam A. Hussein, abd El-Nasser A. Mohammed, osama A. Oraby, and Amina E. Mohammed "Ultimate Optical Soliton Transmission with Dispersion Management in Ultra-Wide Wavelength Division Multiplexing (UW-WDM) Systems" Minufiya Journal of Electronic Engineering Research, Vol. 17, No. 2, July 2007.

[10] Hanaa T. El-Madany, Faten H. Fahmy, Mohamed F. El-Kordy, and Osama Oraby"Temperature and Irradiance Effects for Si and GaAs photovoltaic Cells Characteristic in LEO"International Symposium & Exhibition on Sustainable Energy & Environment (ISESEE 2006), 3-6 December 2006, Kuala Lumpur. Also, Minufiya Journal of Electronic Engineering Research, Vol. 17, No. 1, January, 2007.

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[12] Hanaa T. El-Madany, Faten H. Fahmy, Mohamed F. El-Kordy, and Osama Oraby"UASat Solar Array Design and Performance Characteristics" المؤتمر الرابع لأفاق البحث العلمى والتطور التكنولوجى فى الوطن العربى -11-14 كانون الأول /ديسمبر 2006-دمشق- الجمهورية العربية السورية.

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- [14] O.Oraby, and S.Elrabie" Pracial Model for the delay-and Multiplier Bit Synchronizer" Eight National Radio Science Conference, Feb. 19-21, 1991, Military Technical College, Cairo, Egypt.
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