

The Photonics Society of Chinese-Americans
2004 Annual Conference
(Feb. 22nd, 2004; UCLA Tom Bradley Center,
Los Angeles, California, USA)



Organizers: Prof. Yang Yang (UCLA), yangy@ucla.edu, 310-825-4052
Dr. Owen Wu (GCSC), okwu@gcsincorp.com, 310-594-1316

Organizing Committee :

Professor Ray Chen
Ms. Pamela Hsiao
Professor C. C. Lee
Dr. Golden Li
Dr. Haifeng Li
Professor H.K. Liu

Dr. C. C. Shih
Dr. Janice Shen
Professor Peter Shih
Dr. Raymond Wang
Dr. Shi Kay Yao
Dr. James Yeh

Registration Fee: \$50 for dinner plus registration. (UCLA parking \$7.00 dollars are not covered.) For advanced registration, please contact Pamela Hsiao (pamela@mail.pida.org.tw) in Taiwan or Professor Yang (yangy@ucla.edu) in the USA. Simply e-mail your name and organization, and your name tag will be prepared. No payment information is needed for pre-registration, all payment are due at the workshop. Please pay in cash or personal check. No credit will be accepted.

(Advanced registration by Feb. 15, 2004 is encouraged and appreciated, since seats are limited)

Date: February 22, 2004
Location: Tom Bradley International Conference Center, UCLA
Sponsored by: Photonics Society of Chinese-Americans
Cosponsored by: PIDA

PSC 2004 ANNUAL MEETING

Organized by Photonics Society of Chinese-Americans
Cosponsored by PIDA
Sunday, February 22, 2004

Business Opportunities and Challenges for Photonics Industry

AGENDA

1:00-1:30 Registration

1:30-1:40 Welcome and Introduction

PSC President: Professor Yang Yang & Dr. Owen Wu,

1:40 – 2:10 *The Pursuit of Opportunities in the Land of Opportunity*

Dr. Milton Chang, (Incubic)

2:10-2:40 *Optical Communication Industry and Technology development in Taiwan*

Dr. Yung S. Liu, (ITRI)

2:40-3:10 Prof. Chongcheng Fan (China)

3:10-3:30 Coffee Break

3:30-4:00 *Overview of Taiwan OFC Component Industry*

Mr. Ryan Chung, (PIDA)

4:00-4:30 *Partner or Parish for Optical Ethernet In China*

Dr. Janpu Hou,

4:30-4:45 *Fiber Optics Transceiver Status, Challenges and Outlook*

Dr. H. C. Lee (E2O Communication)

4:45 – 5:00 *Next Generation Optical Network and Opportunities in China Market*

Mr. John Yu from ZTE

5:00-5:30 *Award Ceremony*

**The Tenth Bor-Uei Chen Memorial Scholarship Award
*Chun Ching Shih, Chair***

5:30 – 6:15 Dinner Reception

6:15 – 8:00 Dinner

7:00pm – 8:00pm **Dinner Presentations*:**

***Dinner presentations are provided by industrial companies. Each presentation is 3-5 minutes. If you are interested to present your new concepts, products, and other related topics, please contact Prof. Yang Yang or Dr. Owen Wu to arrange the slots. This is a tremendous opportunity for networking.**

8:00 – 8:10pm Closing Remarks

The Pursuit of Opportunities in the Land of Opportunity

Dr. Milton Chang
Incubic
USA

Abstract

Our Chinese cultural upbringing, properly applied, prepares us well to succeed in America. Unfortunately, during the bubble years, many young people got the wrong impression about success and equate success with being opportunistic and being lucky.

What they might have missed are those things behind those who have succeeded-- they are very good at what they do, and they are hardworking, humble, and respectful of others -- the value system our parents taught us.

To help you better cope with reality, in his talk Milton will morph some of the values that are deeply rooted in our culture to attitudes and behavior that are particularly applicable here in America.

Biography

Milton Chang is Managing Director of Incubic (www.incubic.com), a venture fund "to help entrepreneurs build great companies." He earned a BS with Highest Honors from the University of Illinois, and MS and Ph.D. degrees from the California Institute of Technology, all in Electrical Engineering. Milton worked briefly as a research engineer before joining a startup company to begin his entrepreneurial career. He was president/CEO of Newport Corporation and New Focus, and has incubated more than a dozen companies with nearly a perfect record. He is currently on the boards of Arcturus Bioscience, OEpic, OpVista, Rockwell Scientific, and YesVideo. He is active in the technical community and has received a number of prestigious awards. He was recently President of the IEEE Laser Electro-Optical Society, and writes monthly business columns for Laser Focus World and Photonics Spectra.

"Optical Communication Industry and Technology development in Taiwan"

Dr. Yung S. Liu
OES/ITRI
Taiwan, R.O.C.

Abstract:

After a severe worldwide down turn of the optical communication industry, Taiwan has emerged as a much stronger competitor in the world market. For example, at ITRI, we have developed many world leading technologies among them including 1.3 um VCSEL, 10G transponder modules, high speed TO-can packaging technology, and MEMS-based integrated devices. In this talk, I will give an update of the technology development in Taiwan and discuss potential market opportunities in the Greater China area."

Dr. Y.S. Liu
VP of ITRI, ROC



Biography

Dr. Yung S. Liu is Fellow and VP of Industrial Technology Research Institute (ITRI) and currently serves as General Director of the Opto-Electronics and Systems Labs (OES) in charge of the optoelectronic R&D program of ITRI in Hsinchu, Taiwan. He received his Ph.D. in Applied and Engineering Physics from Cornell University, and BS in Physics from National Taiwan University.

Before returning to Taiwan in 1998, he was with GE Corporate R&D Center in Schenectady, New York, and had managed various R&D programs on advanced technology development in interconnect, optoelectronic packaging, micro-fabrication and processing, and solid state laser and nonlinear optical materials and devices. He received many awards and honors including GE Managerial Award for his leadership role in development of slab laser technology and business, GE Outstanding Achievement Award for his major contribution to the solid-state slab laser technology, GE Patent Awards, and Publication Awards. In 1998, Dr. Liu was selected by Industry Week's as one of the "50 R&D Stars to Watch" for his pioneering effort in the development of advanced optical interconnect technology for advanced digital systems.

Dr. Liu is Fellow of the Optical Society of America (OSA), Fellow of PSC, a Senior Member of IEEE, and a member of American Physical Society, and SPIE. He was also active in the community services. In 1996-97, he was President of the Chinese Community Center of the Capital District, New York—a non-profit organization that serves the Chinese community in the Capital district of New York with 300 family members. He was also the publisher of CCC News, a monthly publication that has over 400 copies in circulation. While in college at National Taiwan University, he was the founder and publisher of the "New Hope Magazine", a publication that advocated the student movement.

Overview of Taiwan OFC Component Industry

Ryan Chung
PIDA

Abstract

2003 Taiwan OFC component industry represented several relatively remarkable achievements, especially active component, Taiwan transceiver had growth double of its production volume compared with previous year and in the near future would improve more aggressively. On the passive component side, optical connector and pitch code also had a recovery growth. Overall, prospect Taiwan OFC component industry, we visualize a healthy development. Therefore, this presentation will scope the vendors' latest status and recently R&D development in Taiwan.

Biography

Mr. Ryan Chung,

Industry Analyst of PIDA.

He received the B.E. degree from Kuang Wu Institute of Technology, Taiwan in 1996 in Mechanical Engineer and MSc degree in Strategic Marketing from De Montfort University, UK in 2000. From 2000 to 2002, he worked in Copax Photonics Corp. as a sales account manager responsible for building sales channel and promoting active device. In late 2002, he joined the Industry & Technology research team in Photonics Industry and Technology Development Association (PIDA) starting to discover the optical fiber communication industry development trend.

Partner or Parish for Optical Ethernet In China

By Janpu Hou

Abstract

The bulk of Telecommunication's growth was in Chinese markets, especially in wireless networks, but what China gives, China takes away. Wireline business declined overall because of a slowdown in international network buildouts, especially in China. The market clearly is stabilizing. While we are cautious, we remain encouraged, while we have yet to see the evidence of overall capex budgets being raised, we are seeing investment in broadband access market.

The Mobile data, Metro optical, and VOIP markets are showing potential of growth in China, and we see VOIP as a major long-term opportunity for Optical Ethernet. We like to share our view on technology, standardization, cost requirement and partnership in the area of broadband access network.

Finding the right channel partners can mean the difference between success and failure for companies selling optical communications products in China. Once partnerships are established, managing these relationships requires close attention to channel and market dynamics. We will share our experience on how to find and work with partners, requirements for mutually beneficial relationships.



Janpu Hou
Vice President, Business Development – FOCI

Dr. Hou serves as vice president of Business Development of Fiber Optical Communications Inc.(FOCI), a leading provider of fiber optic components, where he is responsible for corporate strategy as well as business development and investor relations. During Dr. Hou's tenure, FOCI merged with MRV Communications, FOCI as part of Luminent Spin-off and executed a \$144 million IPO at NASDAQ, Management buy out of FOCI and go public in Taiwan stock exchange.

Dr. Hou has over 20 years experience in the fiber optic industry covering a broad range of products and technologies, with responsibilities including design, production, sales and marketing, and P&L management for various product lines. Before joining FOCI, Dr. Hou's spend 15 years with AlliedSignal Inc.(Now part of Honeywell) and has been instrumental in the introduction of high brightness LCD modules, and optical components for optical display and communication systems.

Dr. Hou earned his Ph.D., M.S. from Princeton University, B. S. in from Cheng Kung University. He has over 50 technical publications, is an inventor or co-inventor of 12 US patents, and served as a member of the technical program committee for IEEE and SPIE. He is currently served on the board of FOCI and as a member of examiner committee for MBA program at National Chiao Tung University.

Fiber Optics Transceiver Status, Challenges and Outlook



By H. C. Lee

E2O Communications, Inc.

Horizontal integration or vertical integration? Is fiber optics transceiver out of the market slump yet? This presentation will review the current fiber optics transceiver market conditions, challenges and new opportunities.

Bio of Dr. H. C. Lee

Dr. H. C. Lee is the Founder, President and CEO of E2O Communications. Founded in 1998, E2O is a fast-growing transceiver company in both data- and tele-com market segments. E2O produces transceivers of superior performances with its low cost manufacturing technology to support photonics infrastructures for Gigabit optical networks, including LAN, SAN, MAN, WAN and access networks. E2O is currently the number 2 supplier in the SAN market with its 2Gbps transceiver products. The Company recently also announced its breakthrough result of 1310nm vertical-cavity surface emitting laser (VCSEL) for 10G enterprise applications.

Previously H. C. was the Lab Manager of the Display, Sensor and Energy Labs at Motorola. He joined Motorola in 1991 where he developed the first MOCVD-grown, low threshold, high yield 850nm VCSEL in 1992 that led to the product introduction of Optobus™, a 10 channel parallel link. He has also architected and pioneered a number of successful programs in Motorola including organic electro-luminescence display, RF and bio-MEMS, thin film fuel cell and DNA diagnostics chip. Prior to joining Motorola, H. C. was a member of technical staff of PCO, a joint venture between IBM and Corning, responsible in developing high performance optoelectronic devices for fiber communications. H.C. has a Ph.D. in Electrical Engineering from the University of Southern California. He has more than 45 issued US patents and was a member of Motorola's Science Advisory Board Associates.

Next Generation Optical Network and Opportunities in China Market

***By John Yu
Optical Division, ZTE USA, Inc.
Dallas, TX***

Abstract

It is predicted that the revenue of global optical communication market in 2004 will show positive growth or at least not worse than 2003. Where are the opportunities and what are the driving factors? To answer these questions, we will first see the growing market sections in 2003. Then we will review the next generation network technologies with focus on access, Ethernet service and intelligent optical network. Finally, we will analyze some of the requirement from Chinese carriers and discuss the potential opportunities.

Bibliography:

John (Jun) joined ZTE in 2001 as a General Manager of optical R&D division in Dallas. His duties cover product marketing, optical technology analysis and business development. Prior to joining ZTE, John was an Engineering Manager and then a Director of Product Marketing with Avanex Coporation in Dallas, responsible for subsystem product development, OEM projects and product marketing. From 1998 to 2000, he was a Staff Technical Team Leader in the lightwave transmission department of Alcatel USA, Dallas, working on the hardware of optical gateway management product. John started his telecommunication career in 1992 with NORTEL Canada, designing high speed optical and electronic components for Nortel's OC-192 system.

John received the B.Sc. and M. Eng. degrees in Applied Physics from Nanjing University of Science and Technology, China in 1982 and 1985 respectively, and Ph.D. degree in EE with a major in Optoelectronics from Queen's University, Canada in 1994. John has been awarded five US patents in the area of optical transmitters and amplifiers.



The Photonics Society of Chinese-Americans

The Bor-Uei Chen Memorial Scholarship Award

Chun-Ching Shih, Committee Chair

The purpose of this scholarship is 1) to honor Dr. Bor-Uei Chen for his contributions in photonics and his services to the photonics community; 2) to recognize outstanding graduate students in the field of **optical communications** and **photonic devices**.

1. The first scholarships were awarded in the 1995 PSC Annual Meeting at Baltimore, Maryland. A scholarship committee, appointed by the PSC Board of Directors, is responsible for making announcements, conducting fund drive, and overseeing the selection process.
2. Each year, the Committee issues a call for nomination in the October issue of *Photonics Link* and on PSC websites. The Committee determines and oversees the review process of applications and makes recommendations to the PSC Board of Directors for final approval. The winner or winners are announced on a latter issue of *Photonics Link*.
3. The selection of scholarship winners is based on the merit of candidate's research work, which must be documented by publications on technical journals or conference presentations and supported by strong recommendations from the candidate's sponsor and advisor.
4. The scholarship award consists of an award certificate and a check of \$1,000. The amount of scholarship and the number of winners may vary, and the Committee reserves the right to make any changes as necessary. The scholarships are awarded annually and presented at the PSC Annual Meeting. The winners are also invited to give a short presentation about his/her research. The winners in past years include:

1995: Lih-Yuan Lin (UCLA) Jerry Chen (MIT) Yan Sun (Stanford)
1996: Li-Ping Chen (UCLA) Yongan Wu (Stanford) Wei-Chiao Fang (UIUC)
1997: Wenhua Lin (UMBC)
1998: Xiaonong Shen (UCSB) Jianhua Zhao (UCSB)
1999: Ming Li (Rensselaer) Alan Yuan-Chun Hsu (UIUC)
2000: (No Recipients)
2001: Xiaomin Jin (UIUC) Sheng-Kwang Hwang (UCLA)
2002: Shuo Tang (UCLA)
2003: How-Foo Chen (UCLA) Chih-Hao Chang (UC Berkeley)

5. In 2004, the Committee has selected two outstanding students, **Fan-Yi Lin** of UCLA and **Shun-Der Wu** of GIT, to receive the Bor-Uei Chen Memorial Scholarship.

Fan-Yi (Frank) Lin

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Los Angeles, CA 90034
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Research Interest

Nonlinear dynamics of semiconductor lasers, optoelectronics, optical communication systems, and applications of laser dynamics in novel lidar, radar, and microwave systems

Education

2001 – Present	Ph.D. in Electrical Engineering, UCLA
1999 – 2001	M.S. in Electrical Engineering, UCLA
1993 – 1997	B.S. in Electrophysics, National Chiao Tung University (NCTU), Taiwan

Research and Teaching Experience

1999 – Present	Graduate Student Researcher, EE, UCLA
	Teaching Associate, EE, UCLA

Technical Skills

- *Computer programming for numerical simulation*
- *Experimental techniques on lasers and optical communication systems*
- *Automated measurement systems using LabView*
- *Design and setup optical system for high-speed laser characterization*

Dissertation and Thesis

Ph.D. Dissertation *Chaotic Lidar and Radar Using Nonlinear Laser Dynamics*

M.S. Thesis *Nonlinear dynamics and characteristics of an optically injected semiconductor laser subjected to delayed optoelectronic feedback*

Journal Publications

1. **F.Y. Lin** and J.M. Liu, “Chaotic lidar using laser chaos”, submitted to *IEEE J. of Select Topic in Quantum Electron.*
2. **F.Y. Lin** and J.M. Liu, “Diverse waveform generation using semiconductor lasers for radar and microwave applications”, submitted to *IEEE J. of Quantum Electron.*
3. **F.Y. Lin** and J.M. Liu, “Chaotic radar using laser chaos”, submitted to *IEEE J. of Quantum Electron.*
4. **F.Y. Lin** and J.M. Liu, “Nonlinear dynamical characteristics of an optically injected semiconductor laser subject to optoelectronic feedback”, *Opt. Commun.*, Vol. 221, issues 1-3, pp. 173-180, 2003
5. **F.Y. Lin** and J.M. Liu, “Nonlinear dynamics of a semiconductor with delayed negative optoelectronic feedback”, *IEEE J. of Quantum Electron.*, Vol. 39, pp. 562-568, 2003
6. **F.Y. Lin** and J.M. Liu, “Harmonic frequency locking in a semiconductor laser with delayed negative optoelectronic feedback”, *Appl. Phys. Lett.*, Vol. 81, pp. 3128-3120, 2002

PSC 2004 Annual Meeting – Business Opportunities and Challenges for Photonics Industry
02/22/04

Shun-Der Wu

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Email: gte782q@prism.gatech.edu

Education

- 1999-present **Georgia Institute of Technology**, Atlanta, Georgia, USA
Ph.D. Electrical and Computer Engineering Thesis Advisor: Prof. Elias N. Glytsis
Thesis Title: Polymer-Based Volume Holographic Grating Couplers for Optical Interconnects
- 1995-1997 **National Cheng-Kung University**, Tainan, TAIWAN
M.S. in Engineering Science Thesis Advisor: Prof. Jung-Hua Chou
Thesis Title: Cross-talk Analysis of Printed Circuit Boards with Discontinuities
- 1991-1995 **National Cheng-Kung University**, Tainan, TAIWAN
B.S. in Engineering Science Major Area: Engineering Science

Research Experience

- 2000-present **Georgia Institute of Technology**, Atlanta, GA, USA
Graduate Research Assistant in Diffractive Optics/Electro-Optics Group
- Develop finite-difference frequency-domain methods to analyze diffractive optical elements
 - Analysis and design of output/input volume holographic grating for interconnect applications
 - Analysis of coupling efficiencies of thin-film multiple quantum-well lasers with waveguides
 - Study of the dynamics of holographic grating formation based on DuPont photopolymers
 - Fabrication of the volume holographic grating couplers and the slab waveguides
 - Guest lecture for a graduate level class “*Electro-Optics*” (Nov.19-Nov.28, 2001)
- 1995-1997 **National Cheng-Kung University**, Tainan, TAIWAN
Graduate Research Assistant in Electronics Packaging Group
- Develop MATLAB codes for the cross-talk analysis of multiple microstrips with discontinuity
 - Set up thermal and fluid experiment to study the performance of heat sinks for packaging

Honors

- 1999-2000 Rotary Ambassadorial Scholar (Sponsor Rotary Club: District 3470)
- 1995 Honor Member of Phi Tau Phi Scholastic Honor Society, TAIWAN
- 1991-1995 Excellent Graduate, ranked 1st in class, National Cheng-Kung Univ., TAIWAN

Journal Publications

1. S.-D. Wu and E. N. Glytsis, “Finite-number-of-periods holographic gratings with finite-width incident beams: analysis using the finite-difference frequency-domain method,” *J. of Opt. Soc. Amer. A*, vol. 19, pp. 2018, 2002.
2. S.-D. Wu and E. N. Glytsis, “Holographic grating formation in photopolymers: analysis and experimental results based on a nonlocal diffusion model and the rigorous coupled-wave analysis,” *J. of Opt. Soc. Amer. B*, vol. 20, pp. 1177-1188, 2003.
3. E. N. Glytsis, N. M. Jokerst, R. A. Villalaz, S.-Y. Cho, S.-D. Wu, Zhaoran Huang, M. A. Brooke, and T. K. Gaylord, “Substrate-embedded and flip-chip-bounded photodetector polymer-based optical interconnects: analysis, design, and fabrication,” *J. of Lightwave Tech.*, vol. 21, pp. 2382-2394, 2003.
4. S.-D. Wu and E. N. Glytsis, “Volume holographic grating couplers: rigorous analysis using the finite-difference frequency-domain method,” *Appl. Opt.*, vol. 43, pp. xxx-xxx, 2004 (accepted Oct. 28, 2003).
5. S.-D. Wu and E. N. Glytsis, “Characteristics of DuPont photopolymers for slanted holographic grating formations,” (submitted to *J. of Opt. Soc. Amer. B*, Dec. 2003).
6. S.-D. Wu and E. N. Glytsis, “Optimization of finite-length input volume holographic grating couplers illuminated by finite-width incident beams,” (in preparation).

Direction to UCLA Tom Bradley Center

<http://www.intl.ucla.edu/Bradley/Bradley.htm>

From North: (San Fernando Valley, Santa Barbara...)

Take Freeway 405 South

Take Wilshire Blvd Exit (toward East, or the second exit of Wilshire Blvd Exit.)

Turn left at Westwood Blvd. (It is the 3rd set of traffic light from the 405 freeway exit).

After five sets of traffic lights, the parking service is located at your left-hand side.

Please purchase the parking permit and proceed to **Lot #8**. Tom Bradley International Conference Center is just five minutes of walking distance from the parking lot entrance.

From South: (LA Lax, San Diego...)

Take Freeway 405 North

Take Wilshire Blvd Exit (toward UCLA direction, or the first exit of Wilshire Blvd Exit.)

Turn left at Westwood Blvd. (It is the 3rd set of traffic light from the exit of 405 freeway).

After six sets of traffic lights, the parking service is located at your left-hand side.

Please purchase the parking permit and proceed to **Lot #8**. Tom Bradley International Conference Center is just three minutes of walking distance from the parking lot entrance.

