



*Photonics Society of Chinese-Americans*

Issue 0044: July 1, 2001

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Published on Websites: [www.psc-a.org](http://www.psc-a.org) & [www.psc-sc.org](http://www.psc-sc.org) & [www.psc-eoa.org](http://www.psc-eoa.org)

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# **PSC Southern California Chapter: San Diego Meeting**

*Bill Waung*

Southern California Chapter of the Photonics Society of Chinese-Americans held a technical meeting on August 1 in the Cardiff Room of Marriott Hotel, San Diego, in conjunction with the SPIE Annual Meeting. Here is the meeting agenda.

## **San Diego Meeting Agenda**

- |                 |  |
|-----------------|--|
| 3:30PM – 3:45PM | Registration & Introduction  |
| 3:45PM – 4:05PM | Dr. Raymond Wang<br>“Development of a successful optical coating for photonics applications<br>- display & communications”   |
| 4:05PM – 4:25PM | Dr. Charles Tu of University of California, San Diego<br>“The electrical engineering department at the University of California, San Diego”                            |
| 4:25PM – 4:45PM | Prof. Yu-Hwa Lo of University of California, San Diego   |
| 4:45PM – 5:05PM | Dr. Owen Wu of Global Communication Semiconductors, Inc.<br>“Compound semiconductor foundry for OEIC applications”   |
| 5:05PM – 5:30PM | Dr. Chen S. Tsai of the Center for Applied Science & Engineering Research at Academia Sinica, Distinguished research Fellow and Founding Director<br>“A Status Report” |
| 5:30PM – 6:30PM | Networking   |

# **PSC Northern California Chapter July Seminar Announcement**

*Yalan Mao*

**Title:** “NANOTECHNOLOGY FOR PHOTONIC APPLICATIONS“

**Speaker:** Dr. Nobu Kambe, Cofounder and VP of Market Development at NanoGram Co.

**Time:** 10:00AM, Saturday, 07/14/01

**Place:** Stanford University CIS Building (Center for Integrated Systems), Room 101 (Cypress auditorium)

## **Abstract**

Nanomaterials are a new class of building blocks for photonic or optoelectronic device applications. Since many of advanced devices have already been designed in submicron scale, it is inevitable to move into nanoscale technology. Major challenges include (a) scalability of high-quality nanomaterials and (b) how to build device structures with nanomaterials. NanoGram has developed laser-driven chemical reaction processes to solve these issues. Multi-component materials as well as materials with rare-earth element dopant have been produced. This single process can meet a wide range of customers' demands in planar optical circuits for WDM. NanoGram's materials cover metal-oxides/carbides/nitrides/sulfides, nanocarbon, nanometals, and semiconductors. Some of the lately developed nanocomposites with polymers (e.g., NanoNylon) are found to enable a high contrast of the refractive index that is necessary for miniaturization of photonic devices and the future integration. This talk first outlines an overview of nanomaterials technology and market in general, and is followed by several distinct approaches for photonic applications.

## **Speaker's biography**

Ph.D. from MIT

M.S. and B.S. from Keio University (Tokyo, Japan)

After graduation, he joined Electrical Communications Laboratories of NTT (Nippon Telegraph & Telegram), then governmental agency and regarded as a counterpart of AT&T Bell Labs in Japan. As Supervisor and Senior Research Manager for optical materials and device group, he developed a wide range of novel semiconductor systems for nonlinear optical devices using molecular beam epitaxy techniques. Then he became Senior Manager at NTT's Headquarters, in charge of new business strategy planning covering optical devices to neuron networks, to man-machine interface software. Having left NTT, he began venture's career. First participating in foundation of ICMR (International Center for Materials Research) at Kawasaki, Japan, he moved to U.S. to found ICMR USA to create business opportunities of nanomaterials and their industrial applications. This entity became a precursor to NanoGram Corporation. After a successful investment from several major venture capitals in the Valley, he became a cofounder and VP of Market Development and IP (Intellectual Properties).

**PSC Northern California Chapter:**  
**August Seminar and Annual Picnic Announcement**

*Yalan Mao*

**Title:** "Tunable Lasers for Metro Applications"

**Speaker:** Prof. Chang-Hasnain, founder and CTO of BANDWIDTH9 Inc.,

**Time:** 10:00AM, Saturday, 08/11/01

**Place:** Stanford University CIS Building (Center for Integrated Systems), Room 101 (Cypress auditorium)

**Abstract**

The Internet has exploded over the past five years. To satisfy the explosion of demand for additional bandwidth, new means to transmit more bandwidth were desperately sought after for wide area networks and long haul communications. Dense wavelength division multiplexing (DWDM) is one of the most effective technologies to increase communication bandwidth. However, with the rapid deployments of broadband links in wide and local area networks, metro optical networks appear to be the communication bottlenecks. In this talk, I will provide an overview of metro networks and how tunable transmitters may help to fuel the growth of metro optical networks.

**Speaker's biography**

Connie J. Chang-Hasnain received a BS degree from University of California, Davis and MS and PhD degrees from University of California, Berkeley, in 1982, 1984, and 1987, respectively, all in Electrical Engineering. Dr. Chang-Hasnain is a Professor of Electrical Engineering and Computer Science at the University of California, Berkeley. Her research interests are in semiconductor optoelectronic devices and materials, photonic MEM (micro-electro-mechanical) devices, and their system applications. Dr. Chang-Hasnain was a Member of Technical Staff at Bellcore from 1987-92. She co-authored more than 200 papers in technical journals and conferences and was awarded more than 20 patents. Prof. Chang-Hasnain founded BANDWIDTH9 Inc., in 1997 to vitalize her research on tunable VCSELs into practical leading-edge products. She served as its Chairman, President and CEO while on an industrial leave from UC Berkeley. She is currently the Chief Technical Officer of the Company. Prof. Chang-Hasnain served as the Program Co-Chair of the Conference on Lasers and Electro-Optics (CLEO) in 1997 and the General Co-Chair of the same conference in 1999. She was an editor of the IEEE Circuits and Devices Magazine and a guest editor for the IEEE JSTQE special issue on Semiconductor Lasers in 1999. She served as a LEOS Board of Governor from 1992-95 and a Director-at-Large of the Optical Society of America (OSA) from 1997-2000. She was a member of the USAF Scientific Advisory Board from 1997-2000. She was named a Presidential Faculty Fellow by the White House, a National Young Investigator, a Packard Fellow from David and Lucile Packard Foundation, a Sloan Research Fellow of the Alfred P. Sloan Foundation, and Outstanding Young Electrical Engineer of the Year by Eta Kappa Nu. She received the 1994 IEEE LEOS Distinguished Lecturer Award. Recently, she was awarded with the 2000 Curtis W. McGraw Research Award from the American Society of Engineering Education. She is a Fellow of the IEEE and OSA.

# **APOC 2001 in Beijing**

***A Must-Attend Meeting at the Right Place and at the Right Time***

***November 11-15, 2001***

*By Jinxue Wang, Technical Director, SPIE*

APOC 2001- Asia Pacific Optical and Wireless Communications conference and exhibit is the flagship conference to serve the international optical and wireless communications communities who are eager to know more about and develop business in the rapidly-expanding telecom market in China, Japan and other Asia-Pacific countries.

“I believe we will witness a growth and vibrancy there that is as remarkable as what has happened and will continue to happen in the United States and Europe,” says **Dr. Tingye Li**, a pioneer in lightwave communications at AT&T Bell Labs and the General Co-chair of APOC 2001. Recent industry news and statistics confirms what Dr. Tingye Li has predicted. In the recent quarterly report, Corning surprised Wall Street analysts by announcing revenue of \$1.86 billion and pro forma EPS of \$0.29 that exceeded the consensus forecast of \$1.76 billion in revenue and EPS of \$0.18. The main reason for this surprise, which is exceptional under current market condition, is that Corning sold more fiber to China than anybody expected. Corning commented “Demand from China would be robust, potentially exceeding demand from North America over the next 5-7 years.”

Fiber demand is just one indication of the tremendous market potential for optical fiber communication components and systems in China and Asia. Major telecom carriers in China are aggressively upgrading their networks to meet the tremendous demand generated by modernization and fast economic development. The preparation for 2008 Olympic Game in Beijing, China’s accession to WTO, and the development of the vast western part of China in the next 5-10 years will further enhance the demand for all optical and wireless communications components, systems and services. This is indeed a market that no company in the telecom business can afford to miss, and APOC 2001 is a must-attend meeting for people who are interested in this dynamic market.

## **Technical Program Highlight**

APOC will feature two plenary sessions, an executive forum, short courses, workshops, tutorials, and many technical sessions with oral and poster papers. More than 450 contributed papers and 50 invited papers by some of the world’s most prominent researchers and business leaders have been selected by the APOC Technical Program Committee for presentation at APOC. A special section on “Telecom Business Development in China and Asia” will provide a unique opportunity for APOC delegates to have an in-depth look at telecom regulations in China and the Asia telecom market.

**Plenary Sessions** include the following prominent business leaders and researchers:

- **Leping Wei**, CTO, China Telecom, “Evolution and Prospective of China Optical Fiber Transport Network”
- **Tatsuo Izawa**, President and CEO, NTT Electronics Corp, “Device Technology for the Next Generation WDM Systems”
- **Jozef Straus**, Chairman, President, and CEO, JDS Uniphase, **Stan Lumish**, Vice President, JDS Uniphase, “Driving the DWDM Revolution: The Role of Optical Components”
- **Thomas E. Darcie**, Vice President, AT&T Labs, “Network Evolution: A Carrier Perspective”
- **Ping-An Zhang**, Vice President, Huawei Technologies, “Building the Next Generation Optical Network”
- **Hequan Wu**, Vice President and Chief Engineer, CATT/MII, “The Challenges of Bandwidth for Telecom Network in China”
- **Xin Cheng**, President and CEO, Sorrento Networks, “Development of Metro Optical Networks”

- **Eric Lean**, Vice President, Industrial Technology Research Institute (ITRI), “Optoelectronics Technology Development in Taiwan”
- **Hakan Yuce**, Vice President, Alcatel Optical Fiber Division, “Meeting the Bandwidth Challenge”

A total of 71 **technical sessions** will cover the latest technology and business developments in the following broad areas:

- Optical Fiber and Planar Waveguide Technology
- Optoelectronics, Materials, and Devices
- Passive Components and Transmission Systems
- Optical Switching and Interconnection
- Metro and Access Networks
- Network Design and Management
- Optical Networking
- Wireless and Mobile Communications
- Telecom Business development in China and Asia

### **APOC Executive Forum**

APOC Executive Forum, chaired by **Dr. Jim Hsieh**, is a special event designed for top executives and decision makers in the optoelectronics and telecom industry around the world to network and discuss important technology and business issues that have significant impacts on the future of this dynamic industry and their companies. Invited keynote speakers and panel discussions are intended to provide valuable insights into China and Asia's telecom industry: what are the hot markets and technologies? How to get venture capital support for your business development? What one needs to know in order to be successful in China and Asia? This information are becoming especially important as more and more companies are forced to shift their focus to the emerging Asia telecom market at a time when the telecom markets in the United States and Europe are slowing down.

APOC Executive Forum will feature the following keynote speakers:

- **Simon MacKinnon**, President, Corning China, “**Toward the All-Optical Network**”
- **Gerard Morrow**, Vice President, WorldCom Asia-Pacific, “**The challenges and Opportunities of the Asia Pacific Telecommunication Industry**”
- **Ben Bisconti**, Managing Director, CSFB Technology Group, “**The Capital Market’s View of the Global Communications Sector**”

APOC Executive Forum will also feature the following outstanding panels and prominent panelists:

- Panel I: Future Directions for Components and Fibers. Chaired by **Connie Chang-Hasnain**, Professor of Electrical Engineering, UC Berkley, and CTO Bandwidth9, Inc.
- Panel II: Venture Capital Investors Funding Strategies for Asia. Chaired by **Winston Fu**, General Partner, U.S. Venture Partners
- Panel III: Broadband Access-Optical Solutions. Chaired by **Janpu Hou**, Vice President, Luminent Inc.
- Panel IV, China Telecom Industry-Opportunities and Challenges. Chaired by **Anton Hu**, President, Corning Frequency Control Ltd, Shanghai

### **APOC Special Workshop**

A special workshop on “Financing the All-Optical Network: from Components to Services” is organized by **Jay Chang**, Vice President, CSFB Technology Group. This special workshop will address the following important questions: Is all-optical network still the next big thing? What is all-optical network? Where (and where not) the financial community are putting their time and money today?

Workshop distinguished panelists include:

- **James Wei**, general Partner, Worldview Technology Partners
- **Ben Bisconti**, Managing Director, CSFB Technology Group
- **Edmond Wei**, CEO, CommVerge Solutions
- **Melanie Swan**, Director, Financial Services, RHK
- **John Milburn**, Managing General Partner, Newton Technology Partners

## APOC Short Courses

The following popular short courses are scheduled:

- **Lih-Yuan Lin**, Director of Optical technologies, Tellium, “MEMS for Optical Switching”
- **Stamatis Kartalopoulos**, Lucent Technologies (retired), “DWDM technologies: How it Works in Communications System”
- **Norman Kwong**, Director of Advanced technology, JDS Uniphase, “Semiconductor Lasers for Fiber Optic Communications”
- **Andre Girard**, EXFO, “Review of Critical DWDM Component and System Issues”
- **Chunming Qiao**, Associate Professor and Director of Advanced Network Design, Evaluation and Research (LANDER) Lab, State University of New York (SUNY) at Buffalo, “Optical Burst Switching and IP/WDM Integration”

## APOC Social Programs

In addition to the strong technical programs, business applications programs, and the APOC exhibit, the following exciting programs are planned.

- Monday evening all conference reception.
- Tuesday evening poster session and reception.
- Wednesday night banquet will be at the Great Hall of The People, where People’s Congress meet, and foreign dignitaries are received. This is a rare opportunity that one should not miss. Ticket is included in your full conference registration.
- Many exciting tours to The Great Wall, The Forbidden City, The Summer Palace, The Ming Tombs, etc. are available.

Complete APOC technical, logistic and registration information can be found at <http://spie.org/info/apoc>. Abstracts and biographies of plenary and invited speakers, who are among the most prominent business leaders and researchers in this industry, can also be found at the web site.

APOC is organized by SPIE-The International Society for Optical Engineering, COS-Chinese Optical Society, COEMA-China Optics and Optoelectronics Manufacturers Association, MII-Ministry of Information Industry of China, CIC-China Institute of Communications, and China Ministry of Science and Technology, Office of Information Technology “863” Plan. Cooperating organizations include: AOS-Australia Optical Society, Tsinghua University, BUPT-Beijing University of Posts and Telecommunications, KAPID-Korea association for Photonics Industry development, OIDA-Optoelectronics Industry Development Association (USA), OITDA-Optoelectronic Industry and technology development Association (Japan), OSI-Optical Society of India, OSJ-Optical Society of Japan, OSK-Optical Society of Korea, PIDA-Photonics Industry Development Association, Photonics Association (Singapore).

APOC General Chairs are Dr. **Tingye Li** and Professor **Bingkun Zhou**. APOC Technical program Chairs are Professor **Guofan Jin** and Dr. **Ivan Kaminow**. APOC Honorary Chairs are Professor **Guoguang Mu**, Professor **Daheng Wang**, and Professor **Peida Ye**. APOC Local Organizing Committee Chair is Professor **Shizhong Xie**. APOC Local Organizing General Secretary is Professor **Kangnan Qi**. A complete list of all section chairs and committee members can be found at <http://spie.org/info/apoc>.



Dr. Tingye Li  
APOC General Chair



Professor Bingkun Zhou  
APOC General Chair

**Arthur Chiou Elected SPIE Board of Directors**

Let us congratulate Dr. Arthur Chiou for being elected to the SPIE's Board of Directors. On behalf of the PSC Board of Directors, we would like to thank you for your support. Here is a personal message from Arthur:

Dear Colleagues,

I was informed recently by Dr. Richard Hoover, the current President of SPIE that I have been elected to the SPIE's Board of Directors position for a three-year term (2002 through 2004). This could not have been possible without your help and your support. I will do my best to help SPIE to serve you better. If I can be of any help in this regard (or others), please let me know. The best way to contact me is probably by email.

I thank you all.

Best regards,

Arthur

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## **Motorola-IEEE Fellowship**

*Chin C. Lee, UC Irvine*

“W. Chuang, student of Chin C. Lee, won the 2001 Motorola-IEEE Fellowship”

Prof. Lee,

As Chairman of the Motorola fellowship, here is the announcement I sent throughout Motorola.

It is with great pleasure that I announce the winner of the 2001, 9th annual Motorola-IEEE/CPMT Society Graduate Student Fellowship for Research in Electronic Packaging. The winner is Ricky Chuang from University of California at Irvine; his paper was "Low Loss Deep Glass Wave-guides Produced with Dry Silver Electromigration Process." His Ph.D. thesis advisor is Prof. Chin C. Lee, in the Dept. of Electrical and Computer Engineering. Mr. Chuang was selected out of 7 finalists whose paper was presented at the Electronic Components and Technology Conference (ECTC). The purpose of the Fellowship is to promote graduate level study and research in electronic packaging. The fellowship was initiated in 1992 by Bob Galvin at a presentation he gave to the Component, Packaging, Manufacturing and Technology (CPMT) Society. Motorola contributes \$ 21,100.00 to the Institute of Electrical and Electronic Engineers (IEEE) Foundation, which then funds the Fellowship. The Motorola-IEEE/CPMT Fellowship is chaired by Motorola.

This year there were a total of 18 submissions, spanning universities from around the world:

Auburn University (1)

Korean Advanced Institute of Science and Technology (4)

Georgia Institute of Technology (5)

University of Illinois at Urbana-Champaign (1)

Hong Kong University of Science and Technology (1)

University of Binghamton (1)

University of California at Irvine (2)

University of Kassel (1)

Katholieke Universiteit Leuven (1)

University of Arizona (1)

Please note: acknowledge Motorola in the following way:

Motorola Labs

Motorola Advanced Technology Center

best regards,

Andrew Skipor

Principal Staff Engineer

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# **Business Profile – Jedai Broadband Networks**

*Chinlon Lin*

*A letter from the Founder of Jedai Broadband Networks, Dr. Chinlon Lin, to the editor*

Hi CC,

Good to hear from you.

We have started a company called Jedai Broadband Networks in May of 2000. It is a startup focusing on Broadband Optical Access Systems using optical networking and IP technologies. At Jedai, we have assembled a team of engineers including photonics network engineers, IP and optical network architects and system engineers, hardware engineers, software engineers, system integration and testing engineers, etc from companies like AT&T Labs, Bellcore/Telcordia, Lucent Bell Labs, Fujitsu, Antec, ADC, Philips, Motorola, Avaya, Paradyne, etc. We are developing next-generation optical IP access systems for Broadband FTTB (Fiber-to-the-Business) applications serving business customers. In the future when market conditions develop, we will also develop FTTH (Fiber-to-the-Home) broadband access systems. The company is located in Red Bank, New Jersey. There are many startups (at least 10) in the area, many of them by people from Bellcore, Lucent Bell Labs and AT&T.

For further information, please visit our website: **[www.jedai.com](http://www.jedai.com)**

Best regards,

Chinlon

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## **Business Profile – LightCross, Inc.**

*Chi Wu*



### **LIGHTCROSS, INC. CLOSES \$30MM UPROUND FINANCING LED BY UMC CAPITAL CORPORATION**

MONTEREY PARK, CA—On August 6, 2001, LightCross, Inc., a leading integrated optical networking components company, announced the completion of a \$30MM Series B Preferred Stock financing. The LightCross Series B financing was led by UMC Capital, the venture arm of United Microelectronics Corporation (UMC), a world-leading semiconductor foundry. Also participating were Series A investors ComVentures, ARCH Venture Partners and JP Morgan Partners, strategic investors Asia Optical Technology Co. and RiTEK Corporation, and a number of prominent individuals from the telecommunications and semiconductor industries.

LightCross and UMC are also entering into a strategic relationship under which LightCross will utilize its proprietary technology to manufacture integrated photonics components and subsystems at UMC's advanced foundry facilities.

Robert Tsao, Chairman of UMC and the UMC Group, and Robert Barron, the former President of Lucent's Metro Optical Networking Group, joined LightCross' Board of Directors on the closing. LightCross' other Directors include leading venture capitalists Cliff Higerson of ComVentures and Dr. Patrick Ennis of ARCH, as well as photonics pioneers Dr. Tingye Li, formerly of Bell Labs and Dr. Chi Wu, the founder and CTO of LightCross. Philip Lin, Director of UMC Capital, joined the Board as an Observer.

According to Dr. Wu, the financial and strategic partnership with UMC positions LightCross well in the race to become a global leader in passive and tunable optical networking components. "We are very grateful for the support demonstrated by UMC Capital and our existing investors. The fact that we were able to raise \$30MM at an increased valuation is particularly significant in the current economic environment," he declared. "We believe that our partnership with one of the leading semiconductor foundries in the world validates and will help enable our vision of leveraging the experience and capabilities of the IC industry to manufacture low-cost, high performance photonic components."

Dr. Wu added, "We are thrilled that widely acknowledged corporate leaders like Bob Tsao and Bob Barron have joined our Board, and look forward to benefiting from their extensive experience to continue building a world-class company."

"We are happy to witness the arrival of the convergence of semiconductors and optics, and to have the chance to participate in the application of the foundry business model to optical components manufacturing. Through this relationship with UMC and with the help of our manufacturing advantages, LightCross should achieve the price-performance levels that the optics industry has long been waiting for," said Mr. Tsao.

Mr. Lin added, "UMC Capital invests in companies like LightCross that follow the 'fabless' model and focus on innovation in component and sub-system design. We believe LightCross is uniquely positioned to revolutionize the optical component industry."

All Series A investors took at least their pro-rata share of the Series B financing. “ComVentures is pleased to reaffirm our support for a company we believe will lead the optical networking industry into the era of mass production and be a key player in enabling the benefits of photonics to migrate from the core of the telecommunications network to the home,” said Mr. Higgerson, founding partner of ComVentures. “By developing critical technology for volume manufacturing of integrated optical components and subsystems, LightCross can become the Intel of the photonics industry.”

LightCross is a privately held optical networking components company based in Monterey Park, CA, with offices in Ottawa, Canada. LightCross has developed technology to manufacture advanced, high-performance and monolithically integrated passive and tunable optical networking components and subsystems using standard IC equipment and facilities.

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