Speaker Profile

Name Lerwen Liu, PhD

tle Business Development Consultant of Zyvex Corporation, Director of NanoGlobe Incorporated

stitute Zyvex Corporation

Lerwen Liu joined Zyvex Corporation since January 2006 as a Business Development Consulting based in Asia. Dr Liu supports Zyvex CEO and other executives on Zyvex global business strategy and establishment particularly in the Asia Pacific (AP) region. She liaisons with government agencies, R & D organizations and industries in the AP region and promotes Zyvex technologies and partnerships in both R & D and business.

Dr Liu has PhD in physics specializing in semiconductor nanostructures and conducted research work in Australia, Japan, USA and Italy. She has been working in nanotechnology consulting business for 7 years. She has extensive experience in consulting and networking in Nanotechnology worldwide and particularly in Asia Pacific specializing in science and technology information intelligence, regional/organizational competitiveness assessment, technology trends monitoring, event organization, database building, and regional network management. She is constantly conducting site visits in government funding agencies, R & D institutions, industry and business organizations worldwide and acquiring insights on policy, infrastructure, research and technology competitiveness and trends.

She built the first Nanotechnology Information Program at a Tokyo based US science & technology information company, providing exceptionally valued information services to the company's worldwide customers in industry and government bodies, focusing on the Nanotechnology policy, R&D activities and trends in industry and research centers across the Asia Pacific region. Since 2002, she has been providing valuable consulting services to the National Institute of Advanced Science and Technology (AIST), Ministry of Economy, Trade and Industry (METI), Mitsubishi Research Institute (NRI), Doshisha University Business School and NEDO in Japan; Invest Australia, Zyvex Corporation in USA and other leading nanotech organizations.

Dr Liu is a frequently invited speaker on global trends in policy, R & D, business and investment in Nanotechnology to audiences across the globe. She consults world wide high-level policy makers on government and industry Nanotechnology programs and R&D planning. She is particularly active in promoting Nanotechnology policy and development in the Asia Pacific countries. She is currently the Executive Coordinator of the Asia Nano Forum (ANF) managing a high level network organization in the Asia Pacific Region supported by 13 economies including Australia, China, Hong Kong, India, Indonesia, Korea, Japan, Malaysia, New Zealand, Singapore, Taiwan, Thailand and Vietnam. Since 2001, Dr Liu has been producing a number of Nanotechnology events across Asia (Australia, China, Indonesia, Japan, Malaysia, Singapore, Taiwan, and Thailand) for promoting regional/global cooperation and development in

Contact Details

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Nanotechnology policy, R & D, and business & investment strategy.

Dr Liu is on the advisory board of the first global Nanotechnology Opportunity Report (NOR) published Mar 2002. She is also on the advisory board of the most comprehensive market report on Nanotechnology `Nanotechnology Market and Company Report-Finding Hidden Pearls` written by a team of experts from Deutsche Bank and University of Ulm in Germany. Dr Liu was recently invited to be a Nanotechnology Expert at the Malaysian Government Researchers` Directory Exchange (REDEX).

She is the author of the Nanotechnology information portal Asia Pacific Nanotech Weekly (APNW, www.nanoworld.jp/apnw) sponsored by the Nanotechnology Research Institute (NRI). The APNW is the only updated web-based comprehensive information covering insightful nanotech development in Asia Pacific region available to the public.

Dr Liu was invited to teach the Nanotechnology Venture Business Course (the first course in Nanotechnology Venture Business in Japan supported by METI's Management of Technology Program) at Doshisha University, Kyoto Japan. She was appointed the Research Associate position at the Institute for Technology Enterprise and Competitiveness (ITEC) of Doshisha University in January 2005.

Dr Liu is an Australian citizen and currently based in Kuala Lumpur, Malaysia.

Education and Career History

- Business Development Consultant, Zyvex Corporation, USA, Jan 2006-
- Research Associate, Institute for Technology Enterprise and Competitiveness (ITEC) of Doshisha University, Japan, Jan. 2005-
- NanoGlobe Incorporated (Micro/NanoTechnology Consulting Company), Japan, Director, Aug. 2003-
- Nanotechnology Consultant and Visiting Researcher at the Nanotechnology Research Institute, AIST, Japan Jan. 2003-
- Mitsubishi Soken and NEDO, Japan, Consultant on Asian Nanotech Business and Policy for Nanotech 2003 + Future Event, Dec. 2002-March 2003
- nABACUS Partners, President, Hong Kong, Dec. 2002-Aug. 2003
- nABACUS Limited, Director, Hong Kong Jan.2002-Dec.2002
- Asia Pacific Nanotechnology Forum (APNF), Australia/Japan, Founder/Secretary General Sept. 2001-Dec. 2002
- Asian Technology Information Program (ATIP), Tokyo/Washington, USA, Technology Analyst/Consultant, 1999-2001
- Scuola Normale Superiore (SNS), Pisa, Italy, Postdoctoral Researcher, 1997-1999
- University of Tokyo, Japan, Researcher, 1995-1997
- University of New South Wales, Sydney Australia, PhD in Physics, 1995
- University of New South Wales, Sydney Australia, Associate

Lecturer, 1992-1995

University of New South Wales, Sydney Australia, BSc, 1992

Invited Speaker, Supporter, Organizer, Co-organizer and Consultant at the following events 2000-2004

- Organizer and speaker at the Asia Nano Forum Summit 2005 (ANFoS205), Melbourne Australia, Dec.8-10th, 2005
- 2. Invited Speaker at the 4th China National Nanomaterials Congress held in Yantai, China on Sept 17-18th 2005.
- Invited Speaker at NanoIreland, held in Dublin on Sept 15th, 2005.
- Organizer of Asia Nano Forum 2005 Malaysia Nanotechnology Forum (MNF2005) in Johor Bahru, Malaysia on July 4-5th 2005
- 5. Invited Speaker at the NanoTrends2005, held on June 6-8th 2005, Munich, Germany.
- Invited Speaker at the European Commission Workshop on Research-Training in Nanosciences and Nanotechnologies: Current Status and Future Needs on April 14-15th, 2005, Brussels.
- 7. Invited Speaker at the Mochtar Riady Center for Nanotechnology and BioEngineering Nanotech Seminar held on April 11th 2005, Lippo Karawaci, Indonesia.
- 8. Invited Speaker and Judge Panelist at the Kyoto Nanotechnology Cluster Forum Workshop: Nanotech Kyoto Innovation, March 18th 2005 (http://www.astem.or.jp/kyonano/index.html).
- Organizer, Asia Nano Forum 2005: HKUST-AIST Joint Workshop on Nanoscience and Technology on March 3-4th, 2005, Hong Kong.
- Invited Lecturer teaching Nanotechnology Venture Business at the Doshisha Business School, Kyoto, Japan, Nov. 26th -Dec 3rd 2004
- Organizer, ChinaNANOMAT 2004 Workshop on Nanomaterials Industrial Impact, Nov. 27th2004, Beijing China
- 12. Organizer, Asia Nano Forum Special Workshop on Nanotechnology Societal Impact in Asia, Nov. 26th 2004, Beijing China
- 13. Invited Speaker at the World NanoEconomic Congress (WNEC), Singapore, Oct 13-14th 2004.
- 14. Invited Speaker at the International Nano Forum-China & Japan Nano Opportunities, organized by the Silicon Valley Nano Ventures and Stanford Research Institute (SRI) on Sept. 17th 2004, SRI, Silicon Valley, USA.
- 15. Coordinator and Speaker at the First Asia Nanotech Forum Summit ANFoS2004, May 10-11th, Phuket, Thailand
- Invited Speaker and Organizing Committee of the 2004 International Conference on Industrial Applications of Nanomaterials & Advanced Composites, Feb. 23-25, 2004, Hong Kong.
- 17. Invited Speaker at the 11th International Colloquium on Scanning Probe Microscopy (ICSPM11), Dec. 11-13th 2003, Shizuoka, Japan.
- 18. Plenary Speaker, Chairman and Panelist at the `Malaysia

- National Symposium on Science and Technology, July 28-30th 2003`
- 19. Speaker and Supporter of `NAMIX, Nano-Micro-Interface Conference Berlin, May 26th -28th, 2003`
- 20. Speaker at the 4th Round Table on Micro/Nano Technologies for Space, May 20-22, 2003, European Space Agency, Noordwijk, The Netherlands
- Organizer of the Asia Pacific NanoElectronics and Technology Forum (APNEXT 2003), April 18-22nd 2003, Taiwan
- Consultant on Nanotech Business Plan Contest and Nanotech Summit-Asia Panel Discussions for Nanotech 2003 + Future organized by NEDO Japan, Feb. 26-28th 2003, Japan
- Panelist representing Asia Pacific on Government Nanotech Investment Strategy and Technology Transfer Policy, `Nanotechnology Investment Forum, International Business Forum Conferences`, Palm Springs, Feb. 9-10th 2003
- Speaker and Supporter, `Asia Pacific Academy of Materials (APAM 2002) – Creating A Global Nanotechnology Network, Hsin-Chu, Taiwan, Dec. 9-10th 2002`
- Organizer, `ChinaNANOMAT 2002 & Nanotechnology Investment Strategy, Global Cooperation and Policy Workshop, Beijing, Nov. 3-5th, 2002`
- 26. Speaker and Co-organizer, `Nanotechnology for ASEAN Region, Bangkok, Sept. 19-20th 2002`
- Speaker, `Micro/Nano Technology Development for Aerospace Applications: Strategy for Focused Worldwide Investment, Montreal, Aug. 25-30th 2002`
- Speaker and Supporter, `ASME- Nano Engineering and Investment Trend Conference, NASA Ames, Silicon Valley, June 17-18th 2002`
- Speaker and Co-organizer, `Nanotech Planet Asia 2002, Singapore, June 11-12th 2002`
- 30. Co-organizer, 'Tokyo-American Center-Current Nanotechnology Seminar'
- 31. Organizer, 'Asia Pacific Nanotechnology Forum, Kick-off Symposium, Tsukuba, Feb. 26-28th, 2002'
- 32. Panelist and Supporter, `Nanotechnology Investment Forum at the International Business Forum, Palm Springs, USA, Feb. 11th, 2002`
- 33. Speaker, Titled `Global Trends in Nanotechnology`, Oct. 2000, Intelligent Nanomaterials Workshop, NEDO (organized by H. Yokoyama), Tokyo, Japan
- 34. Speaker, Talk titled `Global Trends in Nanotechnology`, presented at the Taiwan National Nanomaterials Conference, June 2000, Taipei
- 35. Speaker and Supporter, Talk titled 'Overview on Nanotechnology R & D in Asia Pacific Region', Micro Engineering & Nanotechnology II, April 2002, London.

Reports and Articles

- 1. Nanotechnology in China-Now and in the Future, Dec. 2005, Nanotechnology Law and Business
- 2. 'A Glimpse on Nanotechnology R & D and Business in the Greater Hong Kong', Nikkei NanoBusiness, Oct. Edition, 2005

- 3. 'China Setting Up Platform for Nanotechnology Commercialization and International Cooperation', Nikkei NanoBusiness, May Edition, No. 13, 2005 (at http://www.nikkei.co.jp/rim/nano/index.htm, plus 6 other articles at the former Nikkei Advanced Technology during 2002-2004)
- 4. 'Global Nanotechnology Policy and Infrastructure Overview', sponsored by METI, Japan, 2004
- 5. Asia Pacific Nanotech Weekly- The Sole Information Portal on Asia Pacific Nanotech Policy, Strategy, Business and R & D. Available free online at www.nanoworld.jp/apnw
- 6. 'Nanotechnology R & D in Asia Pacific and Commercialization Efforts', published at Nanotechnology Law & Business, Jan.2004. USA.
- 7. 'Nanotechnology in Asia Pacific', published page 44-45, Venture Capital Magazine, Germany, Nov. 2003
- 8. 'Update on the Asia Pacific Nanotechnology R & D and Commercialization', NAMIX 2003 Proceeding, To be published by Wiley & Sons, 2004
- 9. Articles in Japanese on Asian Nanotech Policy and Business at Nikkei Advanced Technology Report from May 2002-present
- Nanotechnology reports for Asia Technology
 Information Program, abstract available at http://www.atip.org/NANO/reports/ during Jan. 1999-Jan. 2002 (note the full reports are for ATIP clients and subscribers only).
- 11. More about Lerwen Liu at google.co.uk, search: http://www.google.co.uk/search?q=Lerwen+Liu&ie=UT F-8&oe=UTF-8&hl=en&meta=

Dr Lerwen Liu's academic publications between 1992-1999:

J. J. Palacios, L. Liu, and D. Yoshioka.

Fine structure in the off-resonance conductance of small Coulomb blockade systems

Phys. Rev. B 55, 15735 - 15739 (1997).

L. Liu, J. J. Palacios, E. Sorensen, and D. Yoshioka.

Off-resonance conductance of quantum dots in the strong quantum limit

Recent Progress in Many-body Theories, edited by D. Neilson and R. F. Bishop (World Scientific, Singapore, 1998).

Thakur JS, Liu L, Neilson D

Metal-insulator transition in a disordered two-dimensional electron gas including temperature effects Phys Rev B 59 (11): 7255-7258 Mar 15 1999

Liu L, Swierkowski L, Neilson D

Exciton and charge density wave formation in spatially separated electron-hole liquids Physica B 251: 594-597 Jun 1998

Liu L, Swierkowski L, Neilson D

Effect of finite temperature correlations on plasmon and coulomb drag

in coupled quantum wells Physica B 251: 937-940 Jun 1998 Liu L, Swierkowski L, Neilson D, et al.

Static and dynamic properties of coupled electron-electron and electron-hole layers

Phys Rev B 53 (12): 7923-7931 Mar 15 1996

Neilson D, Swierkowski L, Szymanski J, and Lerwen Liu. Excitations of the strongly correlated electron liquid in coupled layers

(Vol 71, pg

4035, 1993) Phys Rev Lett 72 (16): 2669-2669 Apr 18 1994

Neilson D, Swierkowski L, Szymanski J, and Lerwen Liu.

Excitations of the strongly correlated electron liquid in coupled layers Phys Rev Lett 71 (24): 4035-4038 Dec 13 1993

Neilson D, Swierkowski L, Szymanski J, and Lerwen Liu.

Collective modes in the 2-dimensional electron liquid near the wigner phase-transition, J. Low Temp Phys 89 (1-2): 251-256 Oct 1992

Dr Lerwen Liu's reports as Technology Analyst at Asia Technology Information Program at published at http://www.atip.org/NANO/reports/

Note Lerwen Liu is the sole author of these publications and full reports are not available for public. Contact Dr Liu for details.

ATIP02.005 : Asian Nanotech Update 11 pages

ATIP02.004 : Japan Quantum Information Technology 20 pages

ATIP01.051 : Snapshots of Asian Nanotech Companies 11 pages

ATIP01.050 : Overview on Nano Science and Technology in China 12 pages

ATIP01.039: Japan Nanoelectronics R&D Overview 17 pages

ATIP01.035: RIKEN 'Soft' Nanotechnology R&D Highlights 10 pages

ATIP01.023: Computational Nanotechnology in Japan 15 pages

ATIP01.018 : Asia Pacific Nanotechnology Initiatives: Update 10 pages

ATIP00.045: Nanotechnology in Japan for 2001 27595 bytes

<u>ATIP00.044 : Summary of the European Commission Nanotechnology Activities</u> 38066 bytes

ATIP00.041 : Summary of Nanotechnology Development in China 35536 bytes

ATIP00.037 : Summary of Nanotechnology Activities Outside USA 41080 bytes

ATIP00.033: Nanotechnology R&D in Taiwan 67704 bytes

ATIP00.030 : Nanotechnology R&D in Asia Pacific Region - An Overview 65924 bytes

ATIP00.021: Micro Engineering & Nanotechnology II 88993 bytes

ATIP00.019 : Biomedical Applications of Micro/Nano Devices 87399 bytes

ATIP99.090: Hong Kong Nanotechnology R&D 65034 bytes

ATIP99.087: Nanotechnology R&D in Australia

ATIP99.083: Quantum Computer R&D In Japan 79144 bytes

ATIP99.073: Molecular Nano-Machine R&D In Japan 55545 bytes

ATIP99.070: Complexity And Biology In Japan 62041 bytes

ATIP99.069: Bio-Nanotechnology R&D in Japan 49466 bytes

<u>ATIP99.061</u>: Commercial & Industrial Application for Micro Eng & Nanotechnology (United Kingdom) 52433 bytes

ATIP99.039 : Molecular Electronic Devices Research Overview in Japan 19687 bytes

ATIP99.036: Japanese Research on Single-Electron Devices

Other Publications

'Asia Invests in Nanotechnology Initiatives', Cover Story at the Innovation - The Magazine of Research & Technology, National University of Singapore published by World Scientific, page 22-23, Vol. 3 No. 3, 2003.

`The Asia Nanotechnology Initiatives Snap Shots`, Smalltimes Magazine, July/August 2002 Edition.

"Nanotechnology Initiative in Asia Pacific Region", Dr Lerwen Liu & Ms Miwako Waga published at the International Newsletter on Microsystems and MEMS, June Issue 2001 Nanotechnology: Status, Markets and Trends

"A Glimpse at Changes to Come?" Dr Lerwen Liu & Michael Gross, Published in Trends In Biotechnology 18, 440-441, 2000

Most PR:

'Nanotech Key Person Interview', Page 4-5, Nanotechnology World, Sangyo Times Inc. Japan, May 19th No. 1 Issue, 2003. (http://www.weeklynano.com/back/03.-.html)

'Promoting Nanotechnology Industrialization Forum', Nikk ei BP Nanotechnology D & M Online website Feb. 27th 20 02.