

CURRICULUM VITAE

Ci-Ling Pan

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(1) Basic Information:

Male, Born in Taipei, Taiwan on July 27, 1949, Citizen of Taiwan, R.O.C.

(2) Education:

1979, Ph.D.(Physics), Colorado State University, Ft. Collins, Colorado, U.S.A.
1975, M.S. (Physics), Colorado State University, Ft. Collins, Colorado, U.S.A.
1971, B.S. (Physics), Tunghai University, Taichung, Taiwan

(3) Current Position and Relevant Experience:

Current position :

Professor Emeritus, Department of Physics
Honorary Life Chair, College of Sciences
National Tsing Hua University, Hsinchu, Taiwan

Employment History:

National Tsing Hua University, Hsinchu, Taiwan

Vice President, Office of Research & Development (02/14 to 07/16)
Director, Operation Ctr. For Ind. Collaboration (02/14 to 07/16)
Chairman, Department of Physics and Institute of Astronomy (08/11 to 1/14)
Director, Photonics Research Center (08/09 to 07/14)
Tsing Hua Chair Professor, Department of Physics, 02/09 to 07/19
Institute of Photonics Technologies (joint appointment)

National Chiao Tung University, Hsinchu, Taiwan

Chair, Department of Photonics, 8/04 to 7/06
Chair, Inst. Electro-Opt. Eng., 8/92 to 7/95
Prof., Inst. Electro-Opt. Eng., 08/88 to 1/09
Assoc. Prof., Inst. Electro-Opt. Eng., 02/81 through 07/87

National Science Council, Republic of China

Coordinator, Optics & Photonics Program, 01/96 to 12/99

The Chinese University of Hong Kong, Shatin, N. T., Hong Kong

Visiting Prof., Dept. of Electron. Engn., 1/08 to 6/08

Osaka University, Osaka, Japan

Guest Prof., Institute of Laser Engineering, 3/04 to 6/04

University of California, Berkeley, California, USA

Visiting Scholar, 02/86 through 01/87

Colorado State University, Ft. Collins, Colorado, USA

Postdoctoral Fellow, Chem. Dept., 08/79 through 01/81

Marine Corps, Taiwan, ROC

2nd Lt. (Mandatory Military Service), 9/71 to 6/73

Professional Activities (partial list)

Board of Directors, Physical Society of the R.O.C. (2010 to 2012)

Board of Directors, Taiwan Photonics Society (2010 to 2013)
 Board of Directors, Opt. Eng. Soc. of the ROC (2001 to 2004)
 Board of Directors, Liquid Crystal Society (2006-2007)
 President, IEEE/LEOS Taipei Chapter (97 to 98)
 President, OSA Taiwan Chapter (2000 to 2001, inaugural president)
 Program Co-Chair, THz Workshop, 2013 Taiwan-Japan Workshop on Spectroscopy and Surface Science, Sub-Conf. on Quantum Electron., OPTIC 2013, co-chair, track 1 of ACP 2015, Honorary Chair, OPTIC 2015, Chair, T-TW 2015.
 Committee Member, CLEO (11, 12); Member & Education Services Council, IUPAP Commission C17 (Quantum Electronics) (2012 to 2014, 2018-2020), URSI Commission D (Electronics & Photonics) (2013 to date), IRMMW-THz (2015, 2016, 2018, 2019)
 Special Issues Editor, J. Chinese Inst. EE, Aug. 97 and Aug. 2000, Opt. and Quantum Electron., Mar. 2000, Electronics Monthly, June 2013,
 Advisory Editorial Board, Nature Asia-Materials (2008 to 2018), AAPPS Bulletin, (2011 to 2013), Applied Sciences (2018 to date)

Synergistic Activities:

1. Director of the Photonic and Optoelectronic Interdisciplinary Center, funded by the Academic Top University (ATU) program, Ministry of Education, (1/06-1/09) at NCTU – multidisciplinary program that melds the talents of individuals from the departments of Photonics, Electronic Engineering, Material Science and Engineering, and Electrophysics.
2. PI, Photonic Science and Technology for the Tera-Era II 2004-2008 (NSC Program for Promoting Academic Excellence of University Project, Phase II, PPAEU)), **research outcome selected for Science 50, one of the 50 across all disciplines (and only one in photonics) commemorating the 50th Anniversary of NSC.**
3. PI of Bilateral project with Russian Academy of Sciences (2006-2009).
4. PI of AFOSR project (2013-2016).
5. PI of Bilateral project with France (2018-2022).

(4) Fields of Specialty

Laser Sciences; Ultrafast Optics and Optoelectronics; THz Optics and Photonics; Liquid Crystal Optics and photonics

(5) Major Awards and Honors

[NSC \(MoST\) Outstanding Research Award](#), '90-'92, '92-'94, '94-'96.

Fellow, Photonic Society of Chinese Americans (PSC), 1998

[NSC \(MoST\) Research Fellow](#), '96 –'02.

[Merit NSC Research Fellow Award](#), 2002.

University Chair Prof., National Chiao Tung University, 11/03 to 11/09

[Y. Z. Hsu Scientific Chair Professor](#) (Communication and Photonics), 2003.

[Fellow, the Optical Society \(OSA\)](#), 2004.

Fellow, International Society of Optical Engineering. (SPIE), 2004.

[Academic Award, Ministry of Education](#), 2004.

[Engineering Medal, the Optical Engineering Society](#) (ROCOES, now called Taiwan Photonics Society or TPS), 2004.

[Fellow, Physical Society of the Republic of China \(PSROC\)](#), 2005

[Outstanding Engineering Professor of Chinese Institute of Engineers](#), 2006

[Pan Wan Yuen Research Excellence Award](#), 2007

[Traveling Lecturer, OSA](#) (2008 to date)

[Chair Professor, the Univ. Syst. of Taiwan](#) (Concurrent appoint.), 1/09-12/11
Tsing Hua Chair Professor, 2/09 to date.
[Fellow, American Physical Society \(APS\)](#), 2009.
[Fellow, IEEE](#), 2012.
[Teco Award](#), 2012.
[Outstanding Scholar Awards, Foundation for the Advancement of Scholarship \(FAOS\)](#), 2012-2015.
[Outstanding Alumni Award, Tunghai University](#), 2013.
Academian, [Asia-Pacific Academy of Materials](#), 2013.
[Distinguished Lecturer, IEEE EDS](#) (2015 to 2017)
Corresponding Member, [International Academy of Engineering](#), 2017.
[Outstanding Honor Award, THS Foundation](#), 2017
[Outstanding Achievement Award, Phi Tau Phi Honor Society](#), 2018.
[Life Fellow, IEEE](#), 2019

(6) Selected Publications :

Prof. Pan has published more than 270 refereed journal papers and 8 book chapters to date. He also holds 25 Taiwan patents and 17 US patents. A full list of his publications is available online at <https://reurl.cc/WpXY7>. or

<https://scholar.google.com/citations?hl=zh-TW&user=6S2zOIYAAAAJ>

- 6.1 F. Ganikhanov, G. -R. Lin, W. -C. Chen, C. -S. Chang, and Ci-Ling Pan*, "Subpicosecond carrier lifetimes in arsenic-ion-implanted GaAs," [Appl. Phys. Lett. 67:3465\(1995\)](#) (**Pioneering paper on GaAs:As⁺ as an ultrafast photoconductor**). See also, Gong-Ru Lin, Wen-Chung Chen, Shyh-Chin Chao, C.-S. Chang, Kaung-Hsiung Wu, T. M. Hsu, W. C. Lee, and Ci-Ling Pan* "Material and Ultrafast Optoelectronic Properties of Highly Resistive Arsenic-ion-implanted GaAs," [IEEE J. Quantum Electron., 34:1740\(1998\)](#); Ci-Ling Pan and Gong-Ru Lin "Arsenic-implanted GaAs: an alternative material to low-temperature-grown GaAs for ultrafast optoelectronic applications", **invited paper**, [Proc. SPIE 3277:170\(1998\)](#).
- 6.2 Chi-Leun Wang and Ci-Ling Pan*, "Tunable Dual-wavelength Operation of a Diode Array with an External Grating-loaded Cavity", [Appl. phys. Lett. 64:3089\(1994\)](#) (**Generic laser cavity design for collinear, linearly polarized, tunable dual-wavelength output**). See also, Ci-Ling Pan and Chi-Luen Wang, "A novel tunable dual-wavelength external-cavity laser diode array and its applications," **invited paper**, [Optical and Quantum Electronics 28:1239\(1996\)](#), U.S. Patent **5,524,012**.
- 6.3 T. R. Tsai, C. Y. Chen, C.-L. Pan*, R.-P. Pan and X.-C. Zhang, "THz Time-Domain Spectroscopy Studies of the Optical Constants of the Nematic Liquid Crystal 5CB," [Appl. Opt., 42:2372\(2003\)](#) (**Demonstrate feasibility of Liquid Crystal THz photonics**). See also, Chan-Shan Yang, Chia-Jen Lin, Ru-Pin Pan*, Christopher Que, Kohji Yamamoto, Masahiko Tani, and Ci-Ling Pan*, "The Complex Refractive Indices of the Liquid Crystal Mixture E7 in the THz Frequency Range," [J. Opt. Soc. Am. B. 27:1866\(2010\)](#).
- 6.4 Ci-Ling Pan*, Jin-Yuen Zhang, Jung Y. Huang, and Chao-Kuei Lee, A blue-light generating Femtosecond wavelength-tunable Non-collinear Optical Parametric Amplifier," Taiwan patent **I239128**, US patent **7106498**, 2006. (**Femtosecond laser pulses that are tunable from 380 to 460 nm are directly generated the BBO OPA crystal**), see also Chao-Kuei Lee, et. al., "Generation of Femtosecond Laser Pulses Tunable from 380 nm to 465 nm via Cascaded Nonlinear Optical Mixing in a Noncollinear Optical Parametric Amplifier with a Type-I Phase Matched BBO Crystal,"

- [Opt. Exp. 11:1702\(2003\)](#), [J. Opt. Soc. Am. B, 21: 1494\(2004\)](#).
- 6.5 Chao-Yuan Chen, Cho-Fan Hsieh, Yea-Feng Lin, Ru-Pin Pan*, and Ci-Ling Pan*, “Magnetically Tunable Room-Temperature 2π Liquid Crystal Terahertz Phase Shifter,” [Opt. Exp. 12:2625\(2004\)](#) (**The first room-temperature tunable 2π THz phase shifter**). See also Chao-Yuan Chen, Tsong-Ru Tsai, [Ci-Ling Pan](#), and Ru-Pin Pan, “Room Temperature Terahertz Phase Shifter Based on Magnetically Controlled Birefringence in Liquid Crystals,” [Appl. Phys. Lett. 83: 4497\(2003\)](#).
 - 6.6 Tze-An Liu, Masahiko Tani, and Makoto Nakajima, [Ci-Ling Pan*](#), “Ultrabroadband terahertz field detection by photoconductive antennas based on multi-energy arsenic-ion-implanted GaAs and semi-insulating GaAs,” [Appl. Phys. Lett. 83:1322\(2003\)](#). (**Broadest reported to date for antennas fabricated on ion-implanted materials**) see also, Tze-An Liu, *et al.* “Ultrabroadband terahertz field detection by photoconductive antennas based on proton-bombarded InP,” [Opt. Exp. 12:2954\(2004\)](#).
 - 6.7 Yi-Chao Wang, Jia-Min Shieh, Hsiao-Wen Zan and [Ci-Ling Pan*](#) “Near-infrared femtosecond laser crystallized poly-Si thin film transistors,” [Opt. Exp. 15\(2007\) 6981](#) (**Demonstrated potential application of ultrafast athermal annealing for TFT applications**); see also, Jia-Min Shieh, Zun-Hao Chen, Bau-Tong Dai, Yi-Chao Wang, Alexei Zaitsev, and [Ci-Ling Pan*](#), “Near-Infrared Femtosecond Laser-induced Crystallization of Amorphous Silicon,” [Appl. Phys. Lett., 85\(2004\)1232](#), Taiwan patent [I245321](#).
 - 6.8 W. –J. Chen*, H. –Z. Wang, R. –Y. Lin, C. –K. Lee, and [C. –L. Pan*](#), “Attosecond pulse synthesis and arbitrary waveform generation with cascaded harmonics of an injection-seeded high-power Q-switched Nd:YAG laser,” [Laser Phys. Lett. 9:212 \(2012\)](#). (reported by [SPIE Newsroom](#) and as a feature article, [Bulletin of AAPPS](#)). See also, C. –L. Pan et al., “Multi-Color Harmonic Synthesized Laser System For Laser Processing And Laser Processing Method Using Multi-Color Harmonic Synthesized Laser,” U. S. patent [9,031,101](#) and Taiwan patent [I490068](#); Chan-Shan Yang, Chih-Hsuan Lin, Alexey Zaytsev, Kuei-Chung Teng, Tsing-Hua Her, [Ci-Ling Pan*](#), “Femtosecond laser ablation of polymethylmethacrylate via dual-color synthesized waveform,” [Appl. Phys. Lett., 106:051902 \(2015\)](#) (**first report of phase dependence of laser processing**).
 - 6.9 Ci-Ling Pan and Jin-Wei Shi, “Ultrawide-Band Sub-THz Photonic Wireless Links,” Chapter 3, in Microwave Photonics, ed., C. H. Lee, 2nd ed., CRC Press, Taylor & Francis, 2013. See also, J.-W. Shi, C.-B. Huang, and [Ci-Ling Pan*](#), “Millimeter-wave Photonic Wireless Links for Very-High Data Rate Communication,” invited review article, [NPG Asia Materials, 3:41\(2011\)](#) . (**Progress towards radio-over-fiber wireless data transmission up to 20 Gbit/s at 0.1 THz**).
 - 6.10 Alexey Zaytsev*, Chih-Hsuan Lin, Yi-Jing You, Chia-Chun Chung, Chi-Luen Wang, and [Ci-Ling Pan*](#), “Supercontinuum generation by noise-like pulses transmitted through normally dispersive standard single-mode fibers,” [Optics Express 21:16056\(2013\)](#). (**Novel fiber-laser-based approach to supercontinuum generation**) Taiwan patent [I474060](#), US patent [9,256,114](#).. See also, A. K. Zaytsev*, C. H. Lin, Y. J. You, F. H. Tsai, C. L. Wang and [C. L. Pan*](#), “Controllable noise-like operation regime in Yb:doped dispersion-mapped fiber ring laser,” [Laser Phys. Lett. 10:045104\(2013\)](#), Taiwan patent [I509923](#), U.S. Patent [8,897,325](#) ; Yi-Jing You, Chengming Wang, Yi-Lun Lin, Alexey Zaytsev, Ping Xue and [Ci-Ling Pan*](#), “Ultrahigh-resolution optical coherence tomography at 1.3 μ m central wavelength by using a supercontinuum source pumped by noise-like pulses,” [Laser Phys. Lett., 13:025101\(2016\)](#) .