

Research Achievements:Conference Paper

Article Title	Journal Name	Author	Category	Publication Date
Experimental and theoretical study of polarized luminescence caused by anisotropic strain relaxation in nonpolar a-plane textured ZnO grown by a low-pressure chemical vapor deposition	Applied Physics Letters	C.M.Lai, Y.E.Huang, K.Y.Kou, C.H.Chen, L.W.Tu, and S.W.Feng		2015.07
Numerical simulations of the current-matching effect and operation mechanisms on the performance of InGaN/Si tandem cells	Nanoscale Research Letters	S.W.Feng, C. M. Lai, C. Y. Tsai, and L. W. Tu		2014.12
Generation of green frequency comb from chirped x(2) nonlinear photonic crystals	Applied Physics Letters	C.-M. Lai, K.-H. Chang, Z.-Y. Yang, S.-H. Fu, S.-T. Tsai, C.-W. Hsu, N. E. Yu, A. Boudrioua, A. H. Kung, and L.-H. Peng		2014.12
All fiber optics circular-state swept source polarization sensitive optical coherence tomography	Journal of Biomedical Optics	Hermann Lin, Meng-Chun Kao, Chih-Ming Lai, Jyun-Cin Huang, and Wen-Chuan Kuo		2014.02
Colored Reflective Organic Light-Emitting Device without Bias	Organic Electronics	T.-L. Chiu, Y.-P. Hsiao, Y.-T. Chung, C.-M. Lai, and H.-C. Ho		2014.01
Anisotropic strain relaxation and the resulting degree of polarization by one- and two-step growth in nonpolar a-plane GaN	Journal of Applied Physics	Shih-Wei Feng, Yu-Yu Chen, Chih-Ming Lai, Li-Wei Tu, and Jung Han		2013.12

grown on r-sapphire substrate				
Modeling of InGaN p-n junction solar cells	Optical Materials Express	Shih-Wei Feng, Chih-Ming Lai, Chin-Yi Tsai, Yu-Ru Su, and Li-Wei Tu		2013.09
balanced detection for spectral domain optical coherence tomography	Optics Express	Wen-Chuan Kuo, Chih-Ming Lai, Yi-Shiang Huang, Cheng-Yi Chang, and Yue-Ming Kuo		2013.08
Simultaneous measurement of refractive index and thickness of transparent material by dual-beam confocal microscopy	Measurement Science and Technology	Wen-Chuan Kuo, Yu-Ki Bou, and Chih-Ming Lai		2013.05
Balanced detection spectral domain optical coherence tomography with a multiline single camera for signal-to-noise ratio enhancement	Applied Optics	W. C. Kuo, Y. S. Lai, C. M. Lai, and Y. S. Huang		2012.08
Characteristics of Polarized Light Emission in a-Plane GaN-Based Multiple Quantum Wells	IEEE Journal OF Quantum Electronics	C.-Y. Chang, H.-M. Huang, C. M. Lai, and T.-C. Lu		2012.07
Mode characterization of sub-micron equilateral triangular microcavity including material's dispersion effects	J. Appl. Phys.	C.-M. Lai*, B. C. Yeh, and L. -H. Peng		2012.05
Surface striation, anisotropic in-plane strain, and degree of polarization in nonpolar m-plane GaN grown on SiC	J. Phys. D: Appl. Phys.	S.-W. Feng, C.-K. Yang, C.-M. Lai, L.-W. Tu, Q. Sun and J. Han		2011.08
Theoretical simulations of the effects of the indium	J. Appl. Phys.	Shih-Wei Feng, C. M. Lai, C. H.	SCI	2010.11

content, thickness, and defect density of the i-layer on the performance of p-i-n InGaN single homojunction solar cells		Chen, W. C. Sun, and L. W. Tu		
Optical and Electrical characterizations of cerium oxide thin films	J. Phys. D: Appl. Phys.	F. C. Chiu and C. M. Lai	SCI	2010.01
Up-conversion blue laser by intracavity frequency self-doubling of periodically poled lithium tantalate parametric oscillator	Optics Letters	C.-M. Lai, I.-N. Hu, Y.-Y. Lai, Z.-X.Huang, L.-H. Peng, A. Boudrioua, A.-H. Kung	SCI	2010.01
Electrically manipulating the optical sensitivity function in quantum wells for nanoacoustic wave detection	Applied Physics Letters	P.-H. Wang, Y.-C. Wen, S.-H. Guol, C.-M. Lai, H.-C. Lin, P.-R. Chen, J.-W. Shi, J.-I. Chyi, C.K.Sun	SCI	2009.10
Analog-based detection method in optical low-coherence reflectometer for measurement of retardation and fast-axis angle	J. of Electromagn. Waves and Appl.	W. C. Kuo, W. C. Lin, S. C. Lin, and C. M. Lai	SCI	2009.04
Optical response from lenslike semiconductor nipple arrays	Appl. Phys. Lett.	H.-M. Wu, C.-M. Lai, and L.-H. Peng	SCI	2008.12
Optical properties of a-plane GaN strained by photo-chemically grown gallium hydroxide	Physics Status Solidi (C)	S.-L. Wang, B.-C. Yeh, H.-M. Wu, L.-H. Peng, C.-M. Lai, T.-S. Ko, T.-C. Lu, S.-C. Wang, and A.-H. Kung		2008.04
Quantum-size effect and intersubband transitions in zinc blend Al _x Ga _{1-x} N	Physics Status Solidi (C)	S.-W. Feng, K.-H. Chen, and C.-M. Lai		2008.03

quantum cubes embedded in AlN matrix				
Spatial manipulation of nanoacoustic waves with nanoscale spot sizes	Nature Nanotechnology	K.-H. Lin, C.-M. Lai, C.-C. Pan, J.-I. Chyi, J.-W. Shi, S.-Z. Sun, C.-F. Chang, and C.-K. Sun	SCI	2007.12
Polarization-Sensitive Optical Coherence Tomography for imaging Human Atherosclerosis	Applied Optics	Wen-Chuan Kuo, Nai-Kuan Chou, Chien Chou, Chih-Ming Lai, Huan-Jang Huang, Shoei-Shen Wang, Jeou-Jong Shyu	SCI	2007.05
Single-mode stimulated emission from prism-like gallium nitride submicron cavities	Appl. Phys. Lett.	C. M. Lai, H. M. Wu, P. C. Huang, S. L. Wang, and L. H. Peng	SCI	2007.04
The photoluminescence decay time of self-assembled InAs quantum dots covered by InGaAs layers	Nanotechnology	G. W. Shu, C. K. Wang, J. S. Wang, J. L. Shen, R. S. Hsiao, W. C. Chou, J. F. Chen, T. Y. Lin, C. H. Ko and C. M. Lai	SCI	2006.11
Polarization sensitive optical coherence tomography using only linearly polarized light	Optical and Quantum Electronics	W. C. Kuo, H. J. Huang, C. M. Lai, G. J. Jan, C. Chou	SCI	2005.09
Analysis of size distributions of type II ZnTe/ZnSe quantum dots	Phys. Stat. Sol. (B)	Johnson Lee, C. S. Yang, C. T. Chang, J. Liu, W. C. Chou, C. M. Lai, G. J. Jan, and Y. S. Huang	SCI	2004.11

Photoreflectance study on the interface of the InGaP/GaAs heterostructures grown by gas source molecular beam epitaxy	Jpn. J. Appl. Phys	C. M. Lai, F. Y. Chang, H. H. Lin, and G. J. Jan	SCI	2004.02
Temperature dependence of photoreflectance in InAs/GaAs quantum dots	Appl. Phys. Lett.	C. M. Lai, F. Y. Chang, C. W. Chang, C. H. Kao, H. H. Lin, G. J. Jan, and Johnson Lee	SCI	2003.06
Surface band-bending effects on the optical properties of InGaN multiple quantum wells	Applied Physics Lett.	L. H. Peng, C. W. Shih, C. M. Lai, C. C. Chuo, and J. I. Chyi	SCI	2003.06
Photoluminescence of InGaAsN/GaAs single quantum well grown by metal-organic chemical vapor deposition	Journal of Korea Physics Society	C. M. Lai, Y. L. Yang, B. R. Wu, J. H. Huang, and G. J. Jan	SCI	2003.
Polarization-dependent photoreflectance study on InGaP/GaAs quantum well structure	Journal of Korea Physics Society	C. M. Lai, J. H. Huang, and G. J. Jan	SCI	2003.
A Study of Optical Properties of InGaAs/GaAs Quantum Dots	Journal of Korea Physics Society	C. M. Lai, F. Y. Chang, H. H. Lin, and G. J. Jan	SCI	2003.
Boundary effects on the optical properties of InGaN multiple quantum wells	J. Sel. Top. Quantum Electron	L. H. Peng, C. M. Lai, and C. W. Shih	SCI	2003.

Research Achievements:Journal Article

Article Title	Journal Name	Author	Category	Publication Date
Temperature Insensitive Green Frequency Comb as Despeckling Sources	The 4th Laser Display and Lighting	Z.-Y. Yang, J.-H. Hung, K.-H. Chang, C.-M. Lai, N. E. Yu, A. Boudrioua,		2015.04

	Conference (LDC2015)	A. H. Kung, and L.- H. Peng		
Generation of Broad Green Comb from Chirped Nonlinear Photonic Crystals	OPTIC2014	Tsung-Yu Yang,Long-Han Peng,Kai-Hsun Chang,Chih-Ming Lai		2014.12
Surface-Plasmon- Resonance Biosensor Based on Titanium nitride Substrate	ISNE 2014	Ru-Jing Sun, Chien- Nan Hsiao, Yu-Wei Lin, Bo-Huei Liao, Chih-Ming Lai, Hai- Pang Chiang		2014.05
Surface-Plasmon- Resonance Biosensor Based on Titanium nitride Substrate	TACT 2013	Ru-Jing Sun, Chien- Nan Hsiao,Yu-Wei Lin, Bo-Huei Liao, Chih-Ming Lai, and Hai-Pang Chiang		2013.10
Speckle Contrast Reduction by Linear and Nonlinear Photonic Devices	The 10 the Conference on Lasers and Electro- Optics Pacific Rim	E.-C. Liu, J.-H. Hong, S.-H. Fu, P.- C. Yeh, Y.-D Wang, C.-M. Lai, T.-L. Chiu, H. Yokoyama, A.-H. Kung, C.-C. Tu, C.-H. Lin, A. Boudrioua, N.-E. Yu, J.-H. Lee, H.-Y. Lin, L.-H. Peng		2013.06
Low spectrally coherent-coherent and broad temperature-tuned blue/green quasi- phase-matching lasers invoking phase-apodization design	Laser Optics' 2012 conference, LO' 2012	C.-M. Ho, S.-D. Tsai, S.-H. Fu, C.- M. Lai, L.-H. Peng, and A.-H. Kung		2012.06
Colorful Reflective Organic Light Emitting Device without Bias	Society for Information Display 2012	T.-L. Chiu, Y.-P. Hsiao, K.-H. Ko, C.-M. Lai, J.-H. Lee		2012.06

Development of low-spectral coherent RGB lasers for laser color display system	The 1st Laser Display Conference (LDC'12)	S.-H. Fu, C.-M. Ho, S.-D. Tsai, C.-W. Hsu, C.-Y. Chu, C.-M. Lai, Nan Ei Yu, A. Boudrioua, C.-L. Chen, W.-S. Wang, L.-H. Peng, A.-H. Kung		2012.04
Numerical Simulations of the Performance of InGaN p-n Junction Solar Cells	The 7th Joint Meeting of Chinese Physicists	Y.-R. Su, S.-W. Feng, C.-M. Lai, Y.-Y. Chen, K.-L. Kao, C.-H. Tsai, and L. W. Tu		2011.08
Theoretical Simulations of the Performance of p-n InGaN Single Homojunction Solar Cells	The 9th International Conference on Nitride Semiconductors (ICNS-9)	Y.-R. Su, S.-W. Feng, C.-M. Lai, Y.-Y. Chen, K.-L. Kao, C.-H. Tsai, and L. W. Tu		2011.07
Phase apodization effects in QPM-SHG processes	4th Korean QPM workshop and 10th Advanced lasers and their applications	C.-W. Hsu, C.-Y. Chu, C.-M. Ho, S.-H. Fu, C.-W. Liu, Q. Ripault, C.-M. Lai, A. Boudrioua, C.-L. Chen, W.-S. Wang, L.-H. Peng, A.-H. Kung		2011.05
Stress-Induced Leakage Current and Charge Trapping in Cerium Dioxide Thin Film	218th ECS Meeting	S. Chang, P. Lee, C. Feng, C. M. Lai, and F. Chiu		2010.10
Broad temperature and spectral acceptance bandwidth of quasi-phase-matching green and blue lasers with high conversion efficiency	The 16th International Conference on Crystal Growth (ICCG-16)	C.-S. Wen, C.-C. Wu, C.-W. Liu, C.-Y. Chu, C.-L. Chen, W.-S. Wang, C.-M. Lai, A. Boudrioua, A.-H. Kung, Lung-Han Peng		2010.08

Efficient Up-Conversion Blue Lasers On Periodically Poled Lithium Tantalate With Cascaded Quasi-Phase-Matching Structure	14th Conference on Laser Optics	C.-C. Wu, C.-S. Wen, Y.-Y. Lai, L.-H. Peng, C.-M. Lai, and A. Boudrioua		2010.06
CeO ₂ Optical Properties and Electrical Characteristics	217th ECS Meeting, Poster Sessio	W. C. Shih, C. H. Chen, F. C. Chiu, C. M. Lai, and H. L. Hwang		2010.04
Geometric Structure Effects of Sub-micron Surface Textures on the Light Extraction Efficiency of GaN LED	The second International Conference on White LEDs and Solid State Lighting	C.-M. Lai, H.-M. Wu, and L.-H. Peng		2009.12
Mitigation of White Light Emission from GaN Nanowire	The second International Conference on White LEDs and Solid State Lighting	P.-C. Yeh, L.-H. Peng, and C.-M. Lai		2009.12
氧化鋅/矽基板亞波長透鏡陣列結構之光學特性	OPT 2009	P. -C. Yeh, H.-M. Wu, C.-M. Lai and L.-H. Peng		2009.12
Bias-Controlled Coherent Acoustic Phonon Generation in InGaN/GaN Multiple-Quantum-Wells Light Emitting Diodes	Conference on Laser and Electro-Optics 2009	Pei-Hsun Wang, Yu-Chieh Wen, Shi-Hao Guol, Hung-Cheng Lin, Peng-Ren Cheng, Jin-Wei Shi, Jen-Inn Chyi, Chih-Ming Lai,		2009.05
Optical Characterization of Subwavelength Semiconductor Nipple Array	International Conference on Optics and Photonics in Taiwan	H.-M. Wu, L.-H. Peng, and C.-M. Lai		2008.12
Photon-assisted Tunneling in GaN	International Workshop on	B.-C. Yeh, M.-C. Hwa, J.-W. Yu, H.-		2008.10

Nanowires White Light-Emitting Diode	Nitride semiconductors	M. Wu, J. J. Huang, and L.-H. Peng, C.-M. Lai		
Optical characterization of subwavelength semiconductor nipple lens array	International Workshop on Nitride semiconductors	H.-M. Wu, J.-W. Yu, C.-M. Lai, H. C. Chang and L.-H. Peng		2008.10
Optical Properties in Nonpolar a-Plane Strained GaN by Native Gallium Oxide Layer Grown by Photo-Electrochemical Method	7th International Conference of Nitride Semiconductors	H.-M. Wu, C.-M. Lai, L.-H. Peng, S.-L. Wang		2007.09
High Quality Factor of Near Fundamental Resonant Mode on Sub-micro GaN Triangular Microcavity	Conference on Laser and Electro-Optics 2007	C. M. Lai, H. M, Wu, B. T. Yeh, J. L. Chou, L. H. Peng		2007.05
GaN nano-photonics by photo-enhanced wet chemical etching	International Electron Devices and Materials Symposia 2006	P.-C. Huang, H.-M. Wu, C.-M. Lai, and L.-H. Peng		2006.12
GaN nano-photonics and electronics: how to make it simple and affordable?	OPT 2006	H.-M. Wu, C.-W. Yu, P.-C. Huang, C.-M. Lai, L.-H. Peng		2006.12
Deep Sub-Micron GaN Photonic Crystal Fabricated by Self-Assembly Lithography with Photo-Enhanced Wet Etching	International Workshop on Nitride Semiconductors	H. -M. Wu, P. -C.Huang, W. -H. Tu, C. -M. Lai and L. -H. Peng		2006.10
Correlation of Collagen Synthesis with Polarization-	Biophotonic West 2005	W. C. Kuo, J. J. Shyu, N. K. Chou, C. M. Lai, E. K.		2005.

Sensitive Optical Coherence Tomography Imaging of in Vitro Human Atherosclerosis		Tien, H. J. Huang, C. Chou, G. J. Jan		
Development of Linearly Polarized Optical Coherence Tomography and the Measurement on Porcine Tendon Birefringence	Proceedings of the 27th Annual International Conference of the IEEE EMBS	W. C. Kuo, H. J. Huang, C. M. Lai, and C. Chou		2005.
Comparative study of linearly and circularly polarized light in polarization-sensitive optical coherence tomography	The Second Asian and Pacific Rim Symposium on Biophotonics	W. C. Kuo, G. J. Jan, C. M. Lai, C. Chou, H. J. Huang		2004.12
Imaging of human aortic atherosclerotic plaques by polarization-sensitive optical coherence tomography	Proceeding of the 26th annual international conference of the IEEE EMBS, San Francisco, CA USA, 1222-1224.	W. C. Kuo, J. J. Shyu, N. K. Chou, C. M. Lai, H. C. Huang, C. Chou, and G. J. Jan		2004.09

Teaching Achievements:Other Publication

Article Title	Journal Name	Author	Publication Date
Fabrication and characterization of self-assembled ferroelectric linear and nonlinear photonic crystals: GaN and LiNbO ₃	Micro-/Nanoengineering and Characterization of Ferroelectric Crystals for Photonic Applications	Lung-Han Peng, Han-Ming Wu, A. H. Kung, and Chih-Ming Lai	2008.01

Research Achievements:Research Project

Project Title	Funding Source	Year/Months Implemented	Publication Date
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Nonlinear optics in Quasicrystal structures and Microcavity	MOSY		2015.08
Gain competition in the optical parameter oscillation	NSC		2014.08
Study on the interaction between photons, electrons and phonons in the piezoelectric material	NSC		2011.08
微(奈)米尺寸共振腔之線性與非線性光學特性研究(III)	國科會	12/12	2010.08
微(奈)米尺寸共振腔之線性與非線性光學特性研究(II)	國科會	12/12	2009.08
微(奈)米尺寸共振腔之線性與非線性光學特性研究(I)	國科會	12/12	2008.08
半導體暨光電元件基礎科學教育推廣計畫	國科會	12/12	2006.08
以氮化鎵材質製作光學微腔體之光學特性	國科會	12/12	2006.08
覆蓋奈米結構氧化鎵之氮化鎵量子井樣品光學特性分析	國科會	12/12	2005.08
氧化膜形成之應變對不同長晶方向氮化鎵奈米結構光學特性之效應	國科會	12/12	2004.08