Semi-conductor Laser Laboratory ~本實驗室誠徵博士生~

About Our Laboratory....

Our research group had been focusing on the research of GaN-based optoelectronic materials and light emitting devices including LEDs, resonant cavity LEDs, Lasers and VCSELs for the past several years funded by the National Science Council and Ministry of Education under the Academic Center of Excellency program.

國立交通大學 National Chiao Tung University Sclab 2016博士班招生

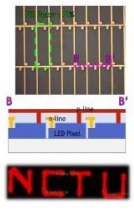
Research area:

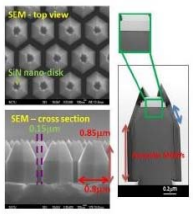
1. High brightness GaN based LED, GaN based Laser for next Gen Lighting (ITRI, Epistar, Lextar, Liteon)
2. High Speed III-V VCSEL for next Gen Data Center (for Google..) (ITRI, UMC, USA based company)
3. Novel Light source, micro-display (wearable device,3D) for Bio application (NTU Hospital, Liteon..)
4. Novel GaN based Transistor (Power electronics) Novel III-V FINFET (integrated with Si, Ge) (Epistar, UMC, TSMC, Lextar..)
5. 2D material (Graphene, MoS2 MoSe2) for Photonics application

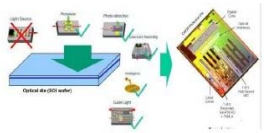
畢業出路 : TSMC, UMC, Epistar, Lextar, ITRI 及國內外學術機構
Welcome Part-time especially from ITRI, NDL, 光電公司

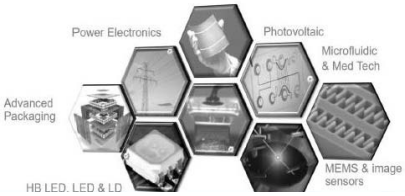
畢業要求 : 2 SCI paper, 3 month to 1 year study aboard experience also provide Dual degree with US or Europe Top Univ.

Please email : hckuo@faculty.nctu.edu.tw (郭浩中教授或林建中教授)







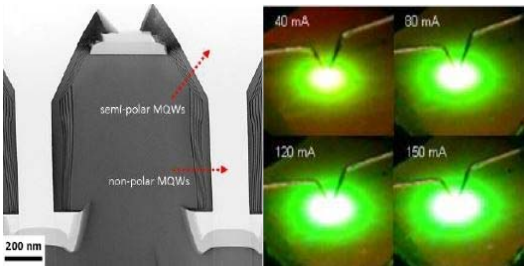


Latest News

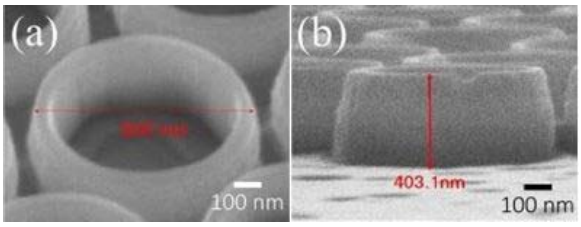
1. 賀 S.C. lab Professor H.C. Kuo was awarded Excellent Contributions in Optoelectronics Research(光電科技貢獻獎) in 2016 from Taiwan Photonics Society(中華民國光電學會).

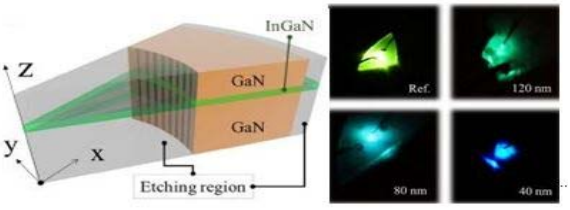
2. 賀 Master student 余承澧 was awarded OPTIC 2016 Student Paper Award.

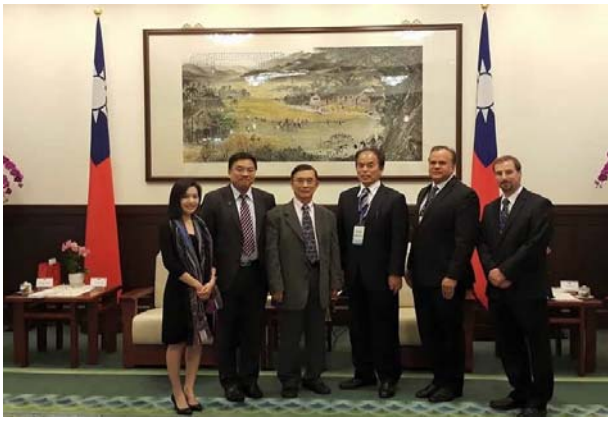
3. Paper Publication on IEEE Transactions on Nanotechnology DOI 10.1109/TNANO.2016.2642146: "High Efficiency InGaN/GaN Core-Shell Nanorod Light Emitting Diodes with Low Peak Blue Shift and Efficiency Droop" An-Jye Tzou, Dan-Hua Hsieh, Kuo-Bin Hong, Da-Wei Lin, Jhih-Kai Huang, Tzu-Pei Chen, Tsung-Sheng Kao, Yang-Fang Chen, Tien-Chang Lu, Chyong-Hua Chen, Hao-Chung Kuo, Fellow, IEEE, and Chun-Yen Chang, Life Fellow, IEEE



4. Paper Publication on Scientific Reports | 7:42962 | DOI: 10.1038/srep42962: "Wavelength tunable InGaN/GaN nano-ring LEDs via nano-sphere lithography" Sheng-Wen Wang, Kuo-Bin Hong, Yu-Lin Tsai, Chu-Hsiang Teng, An-Jye Tzou, You-Chen Chu, Po-Tsung Lee, Pei-Cheng Ku, Chien-Chung Lin & Hao-Chung Kuo







2014諾貝爾得主中村修二教授(Professor Shuji Nakamura) (右三) 於 2015年4月 蒞臨交通大學時與本實驗室郭浩中教授(左二)合影

5. Nobel laureates of 2014 - Professor Shuji Nakamura gave a speech in the lecture series of NCTU(國立交通大學卓越系列講座) and visited S.C. lab on April, 2015 (more photos)

New!!!
交大光電-綠能光電技術課程教材網址連結

Contact us .....

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Semi-conductor Laser Laboratory *~welcome to our lab~*

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Semi-conductor Laser Laboratory *~welcome to our lab~*

2016 PAPER LIST

1. Huang-Yu Lin, Sheng-Wen Wang, Chien-Chung Lin, Kuo-Ju Chen, Hau-Vei Han, Zong-Yi Tu, Hsien-Hao Tu, Teng-Ming Chen, Min-Hsiung Shih, Po-Tsung Lee, Huang-Ming Philip Chen, Hao-Chung Kuo, "Excellent Color Quality of White-Light-Emitting Diodes by Embedding Quantum Dots in Polymers Material", IEEE Journal of Selected Topics in Quantum Electronics, Vol. 22, No. 1, pp.1-7 (2016)

2. Chin-Wei Sher, Chin-Hao Lin, Huang-Yu Lin, Chien-Chung Lin, Che-Hsuan Huang, Kuo-Ju Chen, Jie-Ru Li, Kuan-Yu Wang, Hsien-Hao Tu, Chien-Chung Fu, Hao-Chung Kuo, "A high quality liquid-type quantum dot white light-emitting diode", Nanoscale, Vol. 8, No. 2, pp.1117-1122 (2016)

3. Yu-Lin Tsai, Che-Yu Liu, Chirenjeevi Krishnan, Da-Wei Lin, You-Chen Chu, Tzu-Pei Chen, Tien-Lin Shen, Tsung-Sheng Kao, Martin DB Charlton, Peichen Yu, Chien-Chung Lin, Hao-Chung Kuo, Jr-Hau He, "Bridging the "green gap" of LEDs: giant light output enhancement and directional control of LEDs via embedded nano-void photonic crystals", Nanoscale, Vol. 8, No. 2, pp.1192-1199 (2016)

4. Yu-Ze Chen, Henry Medina, Sheng-Wen Wang, Teng-Yu Su, Jian-Guang Li, Wen-Chun Yen, Kai-Yuan Cheng, Hao-Chung Kuo Guozhen Shen, Yu-Lun Chueh, "Low Temperature and Ultrafast Synthesis of Patternable Few-Layers Transition Metal Dichacogenides with Controllable Stacking Alignment by Microwave-Assisted Selenization Process", Chemistry of Materials, Vol. 28, No. 4, pp.1147-1154 (2016)

5. Hsu-Sheng Tsai, Sheng-Wen Wang, Ching-Hung Hsiao, Chia-Wei Chen, Hao Ouyang, Yu-Lun Chueh, Hao-Chung Kuo, Jenq-Horng Liang, "Direct Synthesis and Practical Bandgap Estimation of Multilayer Arsenene Nanoribbons", Chemistry of Materials, Vol. 28, No. 2, pp.425-429 (2016)

6. Chih-Hsien Cheng, An-Jye Tzou, Jung-Hung Chang, Yu-Chieh Chi, Yung-Hsiang Lin, Min-Hsiung Shih, Chao-Kuei Lee, Chih-I Wu, Hao-Chung Kuo, Chun-Yen Chang, Gong-Ru Lin, "Growing GaN LEDs on amorphous SiC buffer with variable C/Si compositions", Scientific Reports, Vol. 6, pp.19757 (2016)

7. Huang-Yu Lin, Zhi-Ting Ye, Chien-Chung Lin, Kuo-Ju Chen, Hsien-Hao Tu, Huang-Ming Chen, Cheng-Huan Chen, Hao-Chung Kuo, "Improvement of light quality by ZrO2 film of chip on glass structure white LED", Opt. Expr., Vol. 24, No. 2, pp.A341-A349 (2016)

8. Ming-Yang Hsieh, Fang-I Lai, Wei-Chun Chen, Min-Chi Hsieh, Hsiang-Yi Hu, Peichen Yu, Hao-Chung Kuo, Shou-Yi Kuo, "Realizing omnidirectional light harvesting by employing hierarchical architecture for dye sensitized solar cells", Nanoscale, 8, 5478-5487 (2016)

9. José Ramón Durán Retamal, Hassan Makine Oubei, Bilal Janjua, Yu-Chieh Chi, Huai-Yung Wang, Cheng-Ting Tsai, Tien Khee Ng, Dan-Hua Hsieh, Hao-Chung Kuo, Mohamed-Slim Alouini, Jr-Hau He, Gong-Ru Lin, Boon S Ooi, "4-Gbit/s visible light communication link based on 16-QAM OFDM transmission over remote phosphor-film converted white light by using blue laser diode", Optics Express, 23, 33656-33666 (2016)

10. Hau-Vei Han, Ang-Yu Lu, Li-Syuan Lu, Jing-Kai Huang, Henan Li, Chang-Lung Hsu, Yung-Chang Lin, Ming-Hui Chiu, Kazu Suenaga, Chih-Wei Chu, Hao-Chung Kuo, Wen-Hao Chang, Lain-Jong Li, Yumeng Shi, "Photoluminescence Enhancement and Structure Repairing of Monolayer MoSe2 by Hydrohalic Acid Treatment", ACS nano Vol. 10, No. 1, pp.1454-1461 (2016)

11. Wei - Chun Liao, Shu - Wei Liao, Kuo - Ju Chen, Yu - Hao Hsiao, Shu - Wei Chang, Hao - Chung Kuo, Min - Hsiung Shih, Shu - Wei Chang . " Optimized Spiral Metal - Gallium - Nitride Nanowire Cavity for Ultra - High Circular Dichroism Ultraviolet Lasing at Room Temperature " Scientific Reports, 6, 26578 (2016)

12. An - Jye Tzou, Da - Wei Lin, Chien - Rong Yu, Zhen - Yu Li, Yu - Kuang Liao, Bing - Cheng Lin, Jhih - Kai Huang, Chien - Chung Lin, Tsung Sheng Kao, Hao - Chung Kuo, and Chun - Yen Chang . " High - p erformance InGaN - based green light - emitting diodes with quaternary InAlGaN/GaN supe rlattice electron blocking layer " . Optics Express, Vol. 24 , pp. 11387 - 11395 (2016)

13. Yun - Jing Li, Jet - Rung Chang, Shih - Pang Chang, Bo - Wen Li n, Yen - Hsien Yeh, Hao - Chung Kuo. " Multi - facet Microrod Light - Emitting Diode with Full Visible Spectrum Emission " . Journal of Display Technology VOL. 12, NO. 9 (2016)

14. Sheng - We n Wang, Huang - Yu Lin, Tsung Sheng Kao, Kuo - Ju Chen, Hau - Vei Han, Jie - Ru Li, Po - Tsung Lee, Huang - Ming Chen, Hao - Chung Kuo, Chien - Chung Lin, Ming - Hui Hong. " Pulsed - laser micropatterned quantum - dot array for white light source " . Scientific Reports, 6 , 23563 (2016)

15. An - Jye Tzou, Dan - Hua Hsieh, Szu - Hung Chen, Yu - Kuang Liao, Zhen - Yu Li , Chun - Yen Chang, Hao - Chung Kuo. " An Investigation of Carbon - Doping - Induced Current Collapse in GaN - on - Si High Electron Mobility Transistors " . Electronics , 5 , 28 (2016)