

光電工程系  
Department of Electro-  
Optical Engineering

光纖通訊系統  
Fiber Optics  
Communication System

光纖通訊系統實驗室  
Fiber Optics Communication  
System Lab



O: 億光 823  
#4621

L: 億光 814  
#4674

呂海涵 教授  
Prof. Hai-Han Lu

國立中央大學 博士  
National Central University

[hllu@ntut.edu.tw](mailto:hllu@ntut.edu.tw)

<http://www.cc.ntut.edu.tw/~hllu/english/frame.htm>

■ 研究領域

可見光通訊傳輸系統、光纖/微波傳輸系統、光纖通訊/光纖有線電視系統、分波多工被動光纖網路系統

- 超高速率(115.2Gbps)可見光雲端伺服器通訊系統
- 建構雙頻(CATV/16-QAM-OFDM)混合式室內有(無)線接取光纖通信系統
- 光纖有線電視與光通訊產學聯盟
- 建構混合式可見光通訊/主動光纜傳輸系統
- 有線電視傳輸信號技術改善及數位改善監理
- 利用寬頻ASE光源及非線性抑制機制所建構之全雙工光纖/微波傳輸系統

■ 近期研究主題

■ Research Area

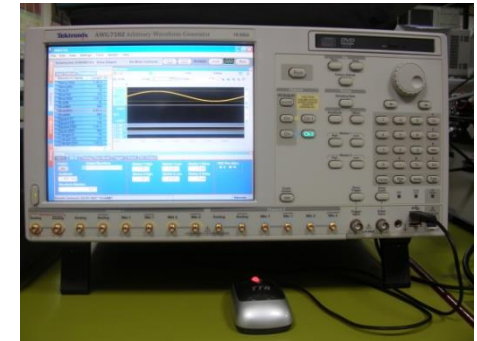
visible light communication (VLC), hybrid lightwave subcarrier transmission systems, radio-over-fiber (RoF), and fiber optical CATV transport systems.

■ Recent Topics

- Ultra-High-Speed (115.2 Gbps) Visible Light/Cloud Server Communication Systems
- Hybrid CATV/16-QAM-OFDM WDM Transport Systems
- Fiber Optical CATV & Fiber Optics Communications - Minor Alliance between Academia and Industry
- Hybrid VLC/AOC Transport Systems
- CATV Transport Systems Employing Signals Improvement and Monitoring Schemes
- Full-Duplex RoF Systems Based on Broadband ASE Light Source and Nonlinear Suppression Scheme



向量訊號網路分析儀  
Vector Network Analyzer



任意波型產生器  
Arbitrary Waveform Generator



脈衝波形產生器  
Pulse Pattern Generator

光電工程系  
Department of Electro-  
optical Engineering

光學薄膜實驗室  
Optical Thin Film Lab

光學薄膜實驗室  
Optical Thin Film Lab.



O: 億光 1028  
#4626

L: 億光 1027  
#4689

任貽均 教授  
Prof. Yi-Jun Jen

國立中央大學  
National Central University

[jyjun@ntut.edu.tw](mailto:jyjun@ntut.edu.tw)

<http://wwwoe.web.ntut.edu.tw/files/11-1045-3162-1.php>

■ 研究領域

- 光學薄膜
- 奈米光學
- 斜向沉積技術
- 超穎材料
- 光學感測技術

■ 近期研究主題

- 三維奈米電漿結構
- 完美波板研製
- 長程表面電漿
- 低損耗超穎材料
- 高感度SERS基板研製

■ Research Area

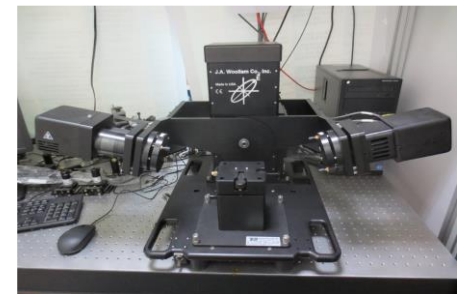
- Optical thin films
- Nanophotonics
- Glancing angle deposition technique
- Metamaterials
- Optical sensors

■ Recent Topics

- 3-D plasmonic nanostructure
- Perfect waveplate: design and fabrication
- Long-range surface plasmonic
- Low-loss metamaterials
- Highly sensitive SERS substrates



電子束蒸鍍系統  
E-Beam Deposition System



光譜橢偏儀  
Spectroscopic Ellipsometer



光譜儀與干涉儀  
Spectrometer and Walk-off  
Interferometer

# 光電工程研究所 Electro-Optical Engineering

## 再生能源與節能材料 Renewable Energy and Energy Material

### 半導體材料暨光電元件製程 實驗室 Semiconductor Materials and Optoelectronic Device Fabrication Lab.



O: 億光 1131  
#4634

L: 億光 1134,  
1127 #4695

陳隆建 教授

Prof. Lung-Chien Chen

國立清華大學

National Tsing Hua University

[ocean@ntut.edu.tw](mailto:ocean@ntut.edu.tw)

[http://wwwoe.web.ntut.edu.tw/  
files/11-1045-3106-1.php](http://wwwoe.web.ntut.edu.tw/files/11-1045-3106-1.php)

#### 研究領域

- MOCVD、LPE與Solution CVD 磊晶技術
- III-V族化合物半導體/氧化物半導體元件製程與分析
- 發光二極體研製
- 太陽能電池研製
- 奈米材料與製程
- 感測器元件製作

#### 近期研究主題

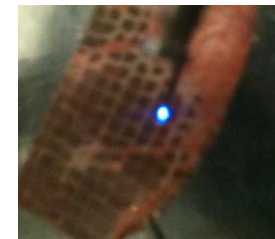
- 可撓式發光二極體
  - 電鍍沉積技術
  - 雷射剝離技術 (LLO)
- 新穎材料與應用
  - 聚二甲基矽氧烷(PDMS)
  - 石墨烯/石墨烯氧化物(GO)
  - 鈣鈦礦

#### Research Area

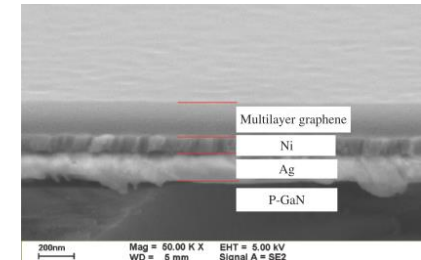
- Epitaxial Technology MOCVD、LPE and Solution
- III-V group Compound Semiconductors/Fabrication and analysis of Transparent conducting oxide semiconductors
- Fabrication of light-emitting diode
- Fabrication of Solar cell
- Nanomaterial process
- Fabrication of sensor driver

#### Recent Topics

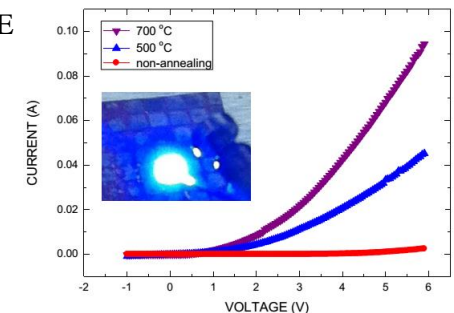
- Flexible Light-Emitting Diodes
  - Electroplating
  - Laser Lift-Off (LLO)
- Novel materials and applications
  - Polydimethylsiloxane
  - Graphene / Graphene Oxide (GO)
  - Perovskites



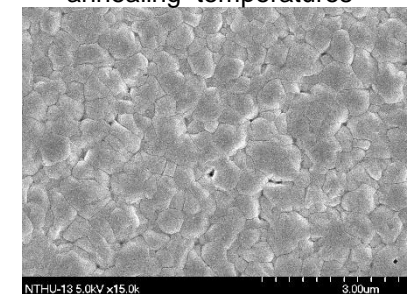
LED structure / Cu substrate



SEM cross sectional image of the Ag/Ni/MLG on p-GaN



Plots typical I-V characteristics of the GaN-based TF-LED with different annealing temperatures



SEM top view image of the Perovskites/ITO

# 光電工程系 Department of Electro-Optical Engineering

## 積體光電元件 Integrated Optoelectronics Devices

### 積體光電實驗室 Integrated Optoelectronics Lab.



O: 億光 929  
#4631

L: 億光 927  
#4684

王子建教授

Prof. Tzyy-Jiann Wang

國立台灣大學電機博士

Ph. D at National Taiwan University

[f10939@ntut.edu.tw](mailto:f10939@ntut.edu.tw)

<http://wwwoe.web.ntut.edu.tw/files/11-1045-3101-1.php>

#### ■ 研究領域

- 積體光電元件
- 表面電漿共振感測
- 光纖雷射
- 光電半導體製程

#### ■ 近期研究主題

- 光學微共振腔元件
- 微碟形雷射
- 液晶光波導元件
- 電光調變表面電漿共振感測
- 生化檢測技術

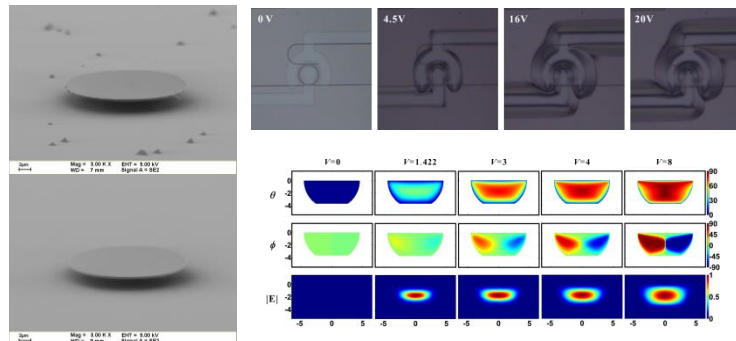
#### ■ Research Area

- Integrated optoelectronics devices
- Surface plasmon resonance sensing
- Fiber laser
- Optoelectronics semiconductor fabrication process

#### ■ Recent Topics

- Optical microcavity devices
- Microdisk laser
- Liquid crystal waveguide devices
- Electro-optically modulated surface plasmon resonance sensing
- Biosensing technique

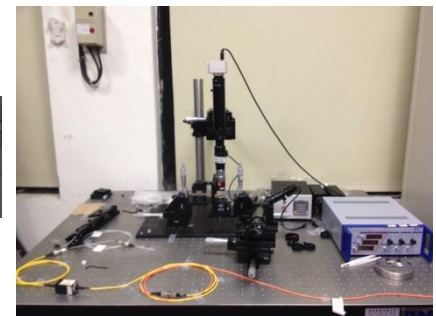
#### 研究成果範例 Examples of research results



射頻磁控濺鍍系統  
RF magnetron sputtering system



真空高溫熱處理系統  
High-temperature vacuum heat treatment system



微共振腔量測系統  
Microcavity measurement system

光電工程系  
Department of Electro-Optical Engineering

光學量測系統設計與應用  
Optical-metrological System Design and Application

光電精密量測實驗室  
Opto-Electrical Precision Measurement Lab



O:億光 0828 #4629

L:億光 0834 #4683,4650

林世聰 教授  
Prof. Shyh-Tsong Lin

國立台灣大學  
National Taiwan University

[f10402@ntut.edu.tw](mailto:f10402@ntut.edu.tw)

<http://www.oe.web.ntut.edu.tw/files/11-1045-3096-1.php>

研究領域

干涉儀設計與應用、自動光學檢測、全像術、實驗力學

- 單頻雷射干涉儀
- 雙頻雷射干涉儀
- 白光干涉儀
- 光譜干涉儀
- 剪切干涉儀
- 顯微干涉儀

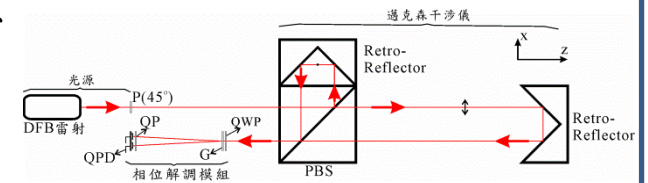
近期研究主題

Research Area

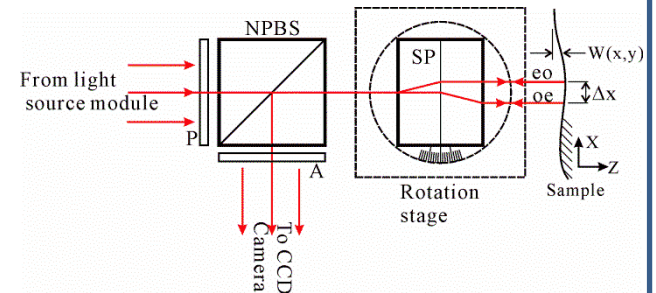
Interferometer design and application, Holography, Automatic optic inspection, Experimental mechanics

Recent Topics

- Homodyne laser interferometer
- Heterodyne laser interferometer
- White light interferometer
- Spectrum interferometer
- Shearing interferometer
- Interference microscope



單頻雷射干涉儀  
Homodyne laser interferometer



白光剪切干涉儀  
White light shearing interferometer



白光顯微剪切干涉儀  
White light shearing interference microscope

# 光電工程研究所 Electro-Optical Engineering

## 液晶非線性光學 Nonlinear Optics Of Liquid Crystal

### 液晶非線性光學實驗室 Nonlinear Optics Of Liquid Crystal Lab.



O: 億光 933  
#4624  
L: 億光 913  
#4694

蔡淑雲 教授  
Prof. Shwu-Yun Tsay

國立台灣大學  
National Taiwan University

[sytsay@mail.ntut.edu.tw](mailto:sytsay@mail.ntut.edu.tw)

<http://www.oe.web.ntut.edu.tw/files/11-1045-3098-1.php>

#### 研究領域

- 多體物理
- 半導體元件之混沌現象之探討
- 砷化鎵之非線性時空動態變化的探討
- 膽固醇液晶

#### 近期研究主題

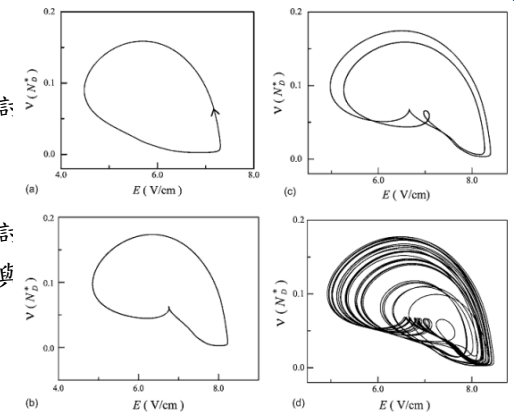
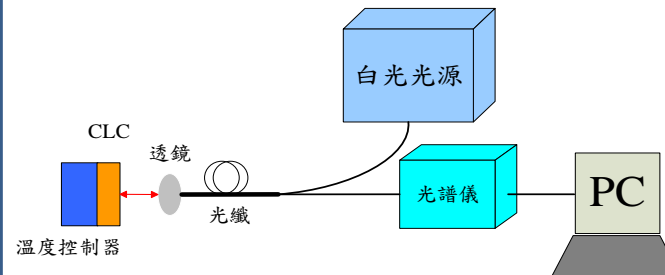
- 砷化鎵之非線性時空動態變化的探討
- 交流驅動下之半導體的非線性反應與混沌現象
- 膽固醇液晶之熱調變

#### Research Area

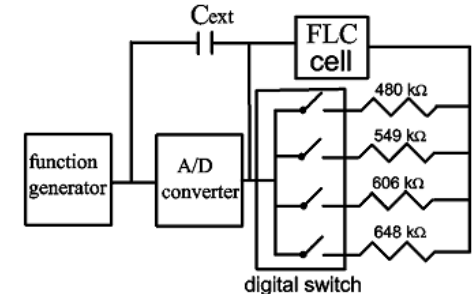
- Multi body physics
- Discussion of the chaos phenomena in semiconductor components
- Cholesteric liquid crystal

#### Recent Topics

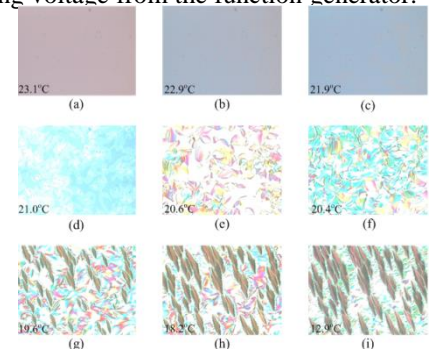
- Two-level model of longitudinal magnetic field-induced current instability and chaos in *n*-GaAs
- Thresholdless, hysteresis-free, V-shaped, electro-optical switching for a ferroelectric liquid crystal cell
- Thermal tuning band gap in cholesteric liquid crystals



Two-level model of longitudinal magnetic field-induced current



The optimized circuit with  $C_{ext} = 2.64$  nF, the A/D converter and digital switch will automatically select a suitable external resistor connected to a FLC cell according to the driving voltage from the function generator.



Thermal tuning band gap in cholesteric liquid crystals

光電工程系研究所  
Department of Electro-Optical Engineering

光學量測與分析  
Optical Measurement and Analysis

顯示與雷射應用實驗室  
Display and Laser Application Lab.



O: 億光 1030 #4628

L: 億光 1013 #4693

陳堯輝 教授  
Prof. Yao-Hui, Chen

國立台灣大學  
National Taiwan University

[yhchen@ntut.edu.tw](mailto:yhchen@ntut.edu.tw)

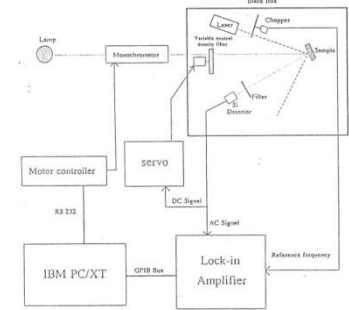
<http://wwwoe.web.ntut.edu.tw/files/11-1045-3100-1.php>

- 研究領域
  - 光調制反射光譜量測
  - 化合物半導體

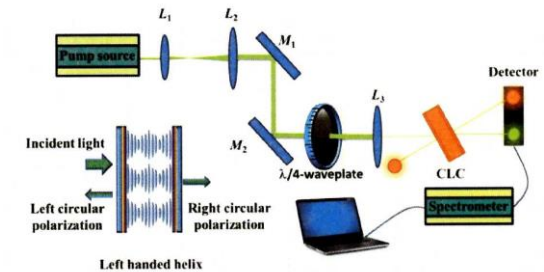
- 近期研究主題
  - 膽固醇液晶
  - 以奈米錒粒子改進太陽電池之吸光效率

- Research Area
  - Photoreflectance
  - Compound semiconductors

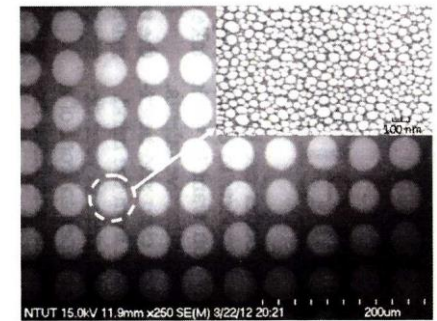
- Recent Topics
  - Dye-doped cholesteric liquid crystal
  - Solar-cell incorporated with indium nanoparticle plasmonics



光調制反射光譜量測系統  
The set-up of Photoreflectance



摻有雜質之膽固醇液晶雷射激發及量測系統  
The experimental set-up of laser generation in dye dope CLC



太陽電池表面之奈米錒粒的SEM上視圖  
Top-view of SEM image of nano-sized indium-nanoparticles on the surface of solar cell

光電工程系  
DEPARTMENT OF  
ELECTRO-OPTICAL  
ENGINEERING

液態晶體實驗室  
Liquid Crystal Laboratory



O: 億光1128  
#4625

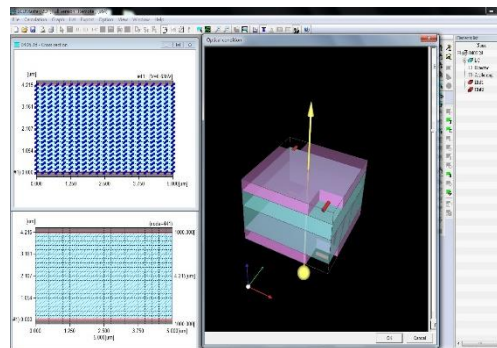
L: 億光1012  
#4687

吳俊傑 教授  
Prof. Jin-Jei Wu

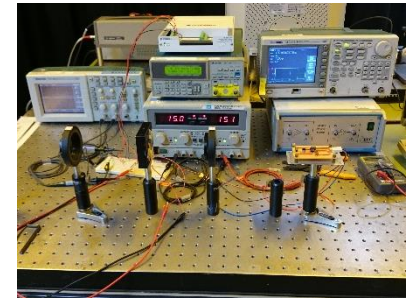
國立交通大學 電子博士  
National Chiao Tung University  
[jjwu@ntut.edu.tw](mailto:jjwu@ntut.edu.tw)

<http://wwwoe.web.ntut.edu.tw/files/11-1045-3097-1.php>

- 研究領域 液態晶體光電特性
- 近期研究主題
  - 觸碰顯示器之Moiré現象
  - 藍相液晶顯示技術
  - 高分子穩定型膽固醇液晶
  - 膽固醇液晶之光柵特性
  - 液晶透鏡
  - 黎曼雷射之液晶量測
- Research Area Electro-optical properties of liquid crystal
- Recent Topics
  - Moiré on touch panel
  - Blue phase liquid crystal display
  - Polymer-stabilized cholesteric liquid crystal
  - Grating in cholesteric liquid crystal
  - Liquid crystal lens
  - Measurement method by Zeeman dual-frequency laser



液晶模擬  
liquid crystal stimulation



光穿透率量測系統  
Light transmittance measurement system



旋轉塗佈機, 超音波震洗機  
Spin-Coating machine, Ultrasonic cleaner



高級偏光顯微鏡  
Polarization Optical Microscope

光電工程系(所)  
Department of Electro-  
Optical Engineering

液晶光電元件及顯示器技術  
Advanced Liquid Crystal  
Device and Display  
Technology

液態晶體實驗室 II  
Liquid Crystal Lab.



O: 億光 1032  
#4637  
L: 億光 1034  
#4676

陳殿榮 教授  
Prof. Tien-Jung Chen

國立交通大學  
National Chiao Tung University

[tjchen@ntut.edu.tw](mailto:tjchen@ntut.edu.tw)

<http://www.eo.ntut.edu.tw/files/11-1045-3176-1.php>

■ 研究領域

液晶顯示技術  
液晶光電元件  
液晶光纖感測元件

■ 近期研究主題

- 高分子液晶配向技術
- 快速雙穩態液晶顯示器之開發
- 垂直配向液晶顯示器之多域製程開發
- 三電極膽固醇液晶顯示器之研究
- 寬波段節能液晶光開關

■ Research Area

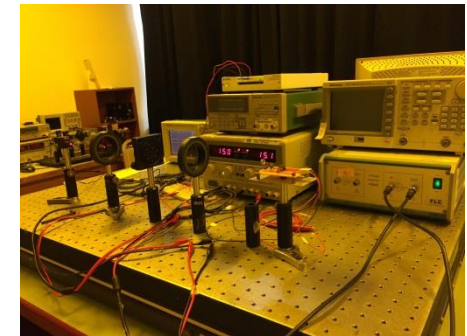
Liquid Crystal Display  
Liquid Crystal optical devices  
Liquid Crystal fiber sensing

■ Recent Topics

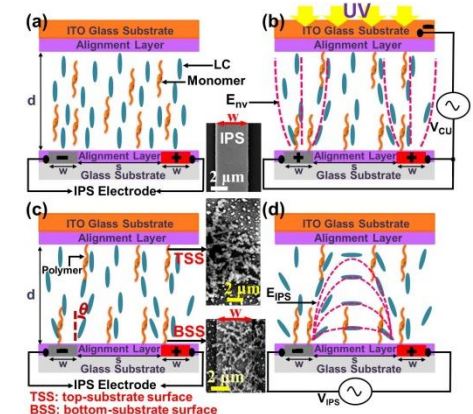
- Polymer stabilized liquid crystal alignment
- Fast switching bistable Liquid crystal display
- Multi-pretilt fabrication for in-plane switching vertical aligned (IPS-VA) LCD
- Three-terminal-electrode Cholesteric LCD
- Wideband power-saving LC light shutter



液晶元件製程開發  
Developing novel LC devices



液晶元件自動量測系統  
Measuring performances of LC devices



液晶顯示器之多域製程  
Multi-pretilt for IPS-VA devices

光電工程系  
DEPARTMENT OF ELECTRO-  
OPTICAL ENGINEERING

光電產業分析趨勢與技術創新  
Optoelectronics Industry  
Analysis and Technology  
Innovation

光電產業分析趨勢暨技術創新  
實驗室

Optoelectronics Industry Analysis &  
Technology Innovation Lab



O: 億光 1129  
#4622

L: 億光 1117  
#4678

李金連 教授  
Prof. King-Lien Lee

國立臺灣師範大學  
National Taiwan Normal University

[kllee@ntut.edu.tw](mailto:kllee@ntut.edu.tw)

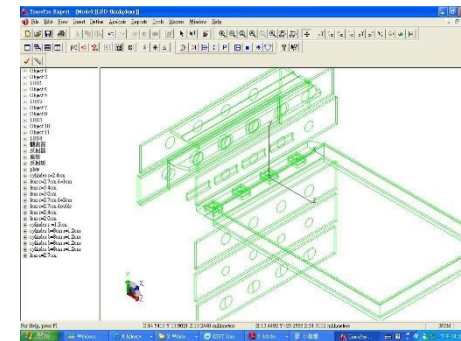
<http://www.oe.web.ntut.edu.tw/files/11-1045-3103-1.php>

- 研究領域
  - 光電產業與技術之趨勢分析
  - 技術預測與創新
  - 研究成果商品化
  - 背光系統設計

- 近期研究主題
  - 側光式背光模組之指向性光源在時間多工立體顯示器的應用
  - 背光模組之導光板微結構與指向性光源設計
  - 新型自然光系統產品屬性與知覺風險認知探討

- Research Area
  - Electro-Optical Industry Trend Analysis
  - Technology Forecasting and Innovate
  - The Commercialization of Research Results
  - Backlight System Design

- Recent Topics
  - Design of Microstructure of Directional Light Source in Edge-lit Backlight Module
  - The property between microstructure of light guide plate and directional light source in back light module
  - Perception of product attributes and perceived risks of the new skylight system



側光式背光模組之導光板微結構與指向性光源設計  
Design of Microstructure of Directional Light Source in Edge-lit Backlight Module



自然光照明系統  
Sunlight Illuminating System

光電工程系  
Department of Electro-  
Optical Engineering

光電訊號處理實驗室  
Optoelectronic Signal  
Processing Lab

光電訊號處理實驗室  
Optoelectronic Signal  
Processing Lab



O: 億光 1132  
#4671

L: 億光 827  
#4610

彭朋群教授  
Prof. Peng-Chun Peng

國立交通大學  
National Chiao Tung University

[pcpeng@ntut.edu.tw](mailto:pcpeng@ntut.edu.tw)

[http://www.oe.web.ntut.edu.tw/  
files/11-1045-3113-1.php](http://www.oe.web.ntut.edu.tw/files/11-1045-3113-1.php)

研究領域

- 光通訊
- 接取網路
- 微波光電
- 光纖感測
- 訊號處理

近期研究主題

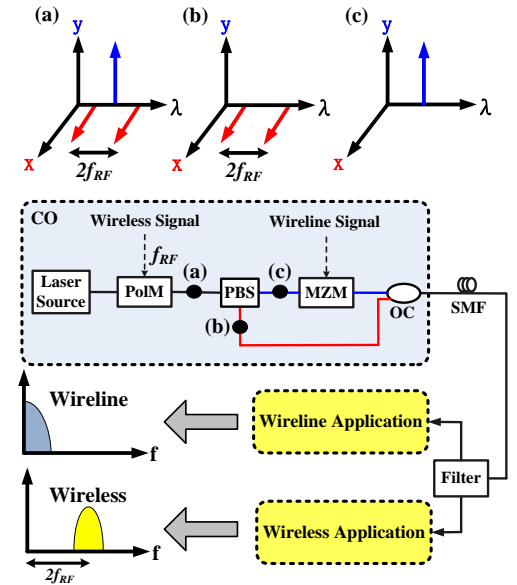
- 多重服務接取網路
- 下世代無線接取網路
- 有線與無線通訊系統
- 大範圍多點感測系統
- 微波光電濾波器
- 微波光電相位偏移器
- 面射型雷射

Research Area

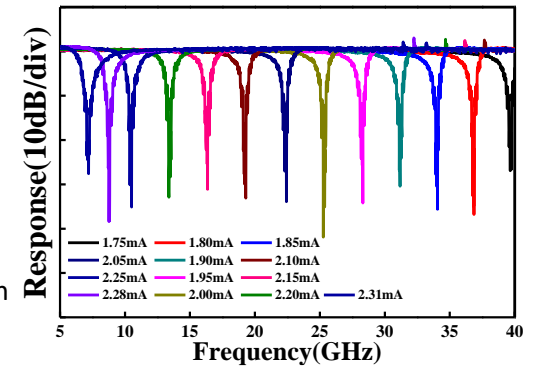
- Optical communication
- Access networks
- Microwave photonics
- Fiber optic sensor
- Signal processing

Recent Topics

- Multi-service access networks
- Next-generation wireless access networks
- Wired and wireless communication systems
- Large-area multipoint fiber sensor systems
- Microwave photonic filters
- Microwave photonic phase shifters
- Vertical-cavity surface-emitting lasers



有線與無線通訊系統  
Wired and wireless communication systems



可調微波光電濾波器  
Tunable microwave photonic filter

光電工程系  
Department of Electro-  
Optical Engineering

繞射光學設計與應用  
Design and Applications of  
Diffractive Optics

繞射光學暨光資訊處理實驗室  
Diffractive Optics and Optical  
Signal Processes Lab.



O: 億光 831  
#4623

L: 億光 811  
#4673

徐巍峰 教授  
Prof. Wei-Feng Hsu

南加州大學  
University of Southern California

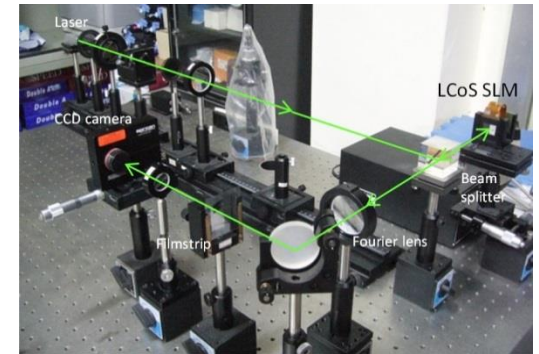
[whsu@ntut.edu.tw](mailto:whsu@ntut.edu.tw)

■ 研究領域 繞射光學元件設計與應用、2D/3D繞射投影顯示、雷射光斑、最佳化演算法、太陽光導引

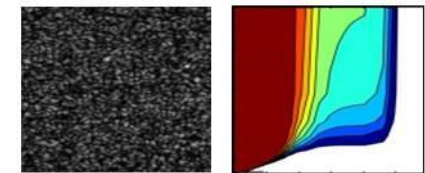
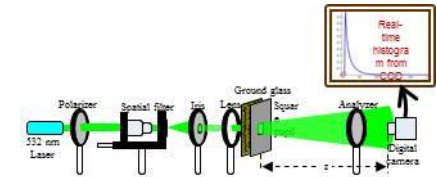
- 近期研究主題
- 繞射光學元件與應用
  - 3D立體繞射投影顯示
  - 雷射光斑處理與量測
  - 2D繞射投影應用
  - 太陽光光導分析
  - 最佳化演算法

■ Research Area Design and application of diffractive optical element, 2D/3D diffractive projection displays, laser speckle, optimization algorithms, daylight guiding

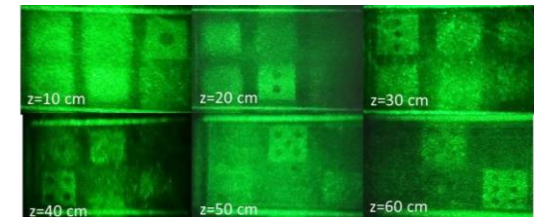
- Recent Topics
- Design and application of diffractive optical element
  - Projection display of 3D diffractive images
  - Processes and measurement of laser speckle
  - Projection display of 2D diffractive images
  - Analysis and design of daylight guiding
  - Optimization algorithms for design of diffractive optical element



以LCOS空間光調制器為關鍵元件之繞射光學系統  
Diffractive optical system using a liquid-crystal-on-silicon (LCOS) spatial light modulator (SLM)



雷射光斑量測  
Measurement of laser speckle



3D縱向繞射影像之生成  
Generation of axial diffractive images

光電工程研究所  
Department Of Electro-  
Optical Engineering

超快量測與分析  
Ultrafast Measurement and  
Analysis

光子技術實驗室  
Photonic Technology  
Laboratory



O: 億光大樓  
1118 #4640  
L: 億光大樓  
1114 #4693

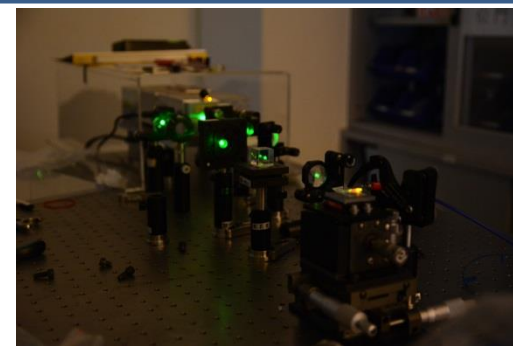
林家弘 教授  
Prof. Ja-Hon Lin

國立交通大學  
National Chiao Tung University

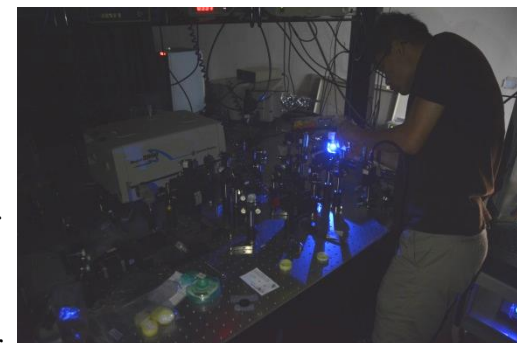
[jhlin@ntut.edu.tw](mailto:jhlin@ntut.edu.tw)

<https://lab.lv5.in>

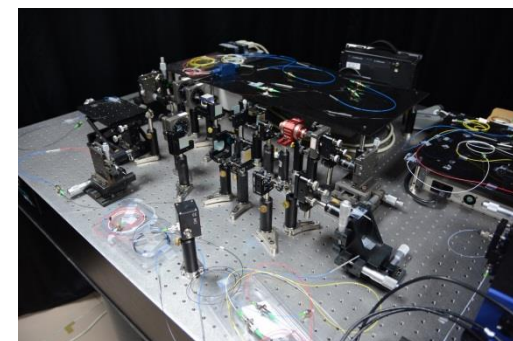
- 研究領域
  - 光電材料超快載子與非線性光學量測
  - 液晶雷射與元件製作
  - 光纖短脈衝雷射動態研究的與應用
- 近期研究主題
  - 氧化鋅載子與同調聲子動態研究
  - 光電材料三階非線性光學量測
  - 摻染料膽固醇液晶與隨機雷射
  - 高分子液晶抑制光斑雜訊
  - 被動鎖模摻鏡光纖雷射
  - 拓撲絕緣飽和吸收體製備
- Research Area
  - Ultrafast carrier dynamics and nonlinear optical measurement of optical materials
  - Manufacture of liquid crystal laser and devices
  - Dynamics investigation and application of ultrashort fiber laser
- Recent Topics
  - Carrier and coherent acoustic phonon dynamics of ZnO
  - Third-order nonlinear optical measurement of optical materials
  - Dye doped cholesteric liquid crystal and random laser
  - Suppression of laser speckle noise by using polymer dispersed liquid Crystals
  - Passive mode-locked Yb-doped fiber laser
  - Manufacture of topological insulator saturable absorber



摻染液晶雷射系統  
Dye-doped liquid crystal laser system



汞幫浦探測超快量測系統  
Pump-probe ultrafast measurement



超短脈衝雷射系統  
Ultrafast pulse laser system

光電工程系(所)  
Department of Electro-  
Optical Engineering

光通訊與太陽能技術  
Optical Communication and  
Photovoltaic Energy  
Technology

光通訊與綠能光電元件  
實驗室  
Fiber Optic and Green  
Photonics Lab.



O: 億光 1033  
#4692

L: 億光 1011  
#4661

何文章 教授  
Prof. Wen-Jeng Ho

國立清華大學電機博士  
National Tsing Hwa University,  
EE, Ph. D.

[wjho@ntut.edu.tw](mailto:wjho@ntut.edu.tw)

■ 研究領域

光通訊元件開發與應用技術、光伏元件開發與量測技術、奈米結構及金屬表面電漿子應用技術

■ 近期研究  
主題

- 單光子元件製程與量測
- 在雲端及物聯網應用之光通訊元件
- 新穎高效率結晶矽太陽能電池
- 新穎高效率多接面及量子點砷化鎵太陽能電池
- 奈米金屬粒表面電漿子應用於太陽能電池
- 光伏偏壓MOS結構太陽能電池

■ Research  
Area

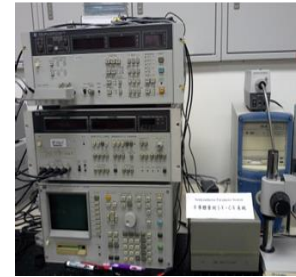
Development and application of optical communication devices, development and characterization of photovoltaic devices, application of nano-structure and metallic plasmonics

■ Recent  
Topics

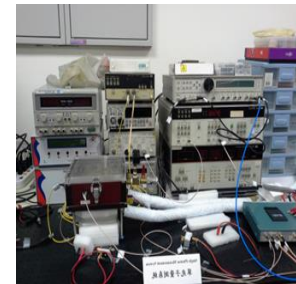
- Processing and characterization of single-photon detectors
- High performance optical communication devices for the cloud and IoT technologies
- Novel high-efficiency Si-based solar cells
- Novel high-efficiency M-J and Q-dots GaAs-based solar cells
- Nano-structure and metallic-particles plasmonic solar cells
- Photovoltaic biasing MOS-structure solar cells



半導體元件製程與封裝  
Processing and packaging of semiconductor  
devices



光伏元件量測系統  
Photovoltaic device characterized systems



光通訊元件量測系統  
Optical communication device measured  
systems

# 光電工程系 Department of Electro- Optical Engineering

## 奈米與生醫光電技術 Optical Methods in Nanobiotechnology

### 奈米生醫光學實驗室 Nano/Bio Photonics Lab.



O: 億光 932  
#4635

L: 億光 911  
#4691

陳建銘 副教授  
Assoc. Prof. Chien-Ming Chen

東京大學  
University of Tokyo

[cmchen@ntut.edu.tw](mailto:cmchen@ntut.edu.tw)

[http://wwwoe.web.ntut.edu.tw/  
files/11-1045-3164-1.php](http://wwwoe.web.ntut.edu.tw/files/11-1045-3164-1.php)

#### 研究領域

奈米生醫技術、分析與感測、  
光電工程、光學製作

#### 近期研究主題

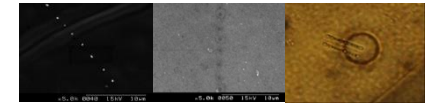
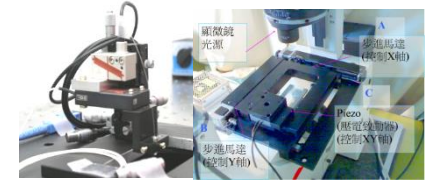
- 量子點與奈米金粒子於光電元件之應用
- 生醫分析與感測系統
- 奈米級雷射摘取
- 光感生醫用薄膜
- LED型高感度螢光偵測器

#### Research Area

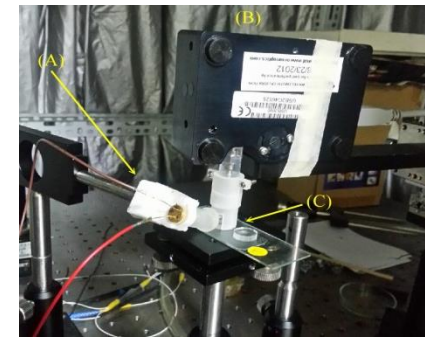
Nanobiotechnology, Analysis and sensing, optoelectronic engineering, Optical manufacturing

#### Recent Topics

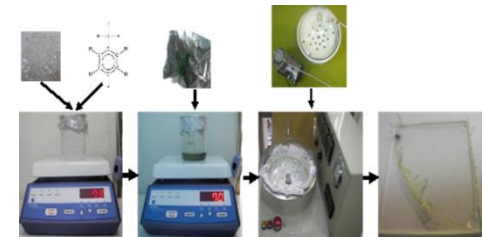
- Nano quantum dots and nano-gold particles in the optical elements of the application
- Biomedical analysis and sensing system
- Nano-laser capture microdissection
- Photo sensing film for bio-application
- LED-HPLC fluorescence detector



奈米解析度顯微摘取系統之開發  
Developing nano-resolution laser  
capture microdissection system



D-乳酸螢光感測系統  
D-lactate fluorescence biosensing  
system



光感奈米生醫用薄膜之製作  
Photo sensing film manufacturing

光電工程系  
DEPARTMENT OF ELECTRO-  
OPTICAL ENGINEERING

光電材料與元件  
Optoelectronic Material And  
Devices

光電物理實驗室  
Optoelectronic Physics Lab



O:億光1029室  
#4632

L:億光1015室  
#4682

洪魏寬 助理教授  
Prof. Wei-Kuan Hung  
台灣大學  
National Taiwan University

[wkhung@ntut.edu.tw](mailto:wkhung@ntut.edu.tw)

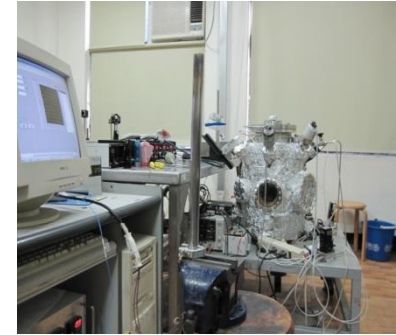
[http://wwwoe.web.ntut.edu.tw/  
files/11-1045-3108-1.php](http://wwwoe.web.ntut.edu.tw/files/11-1045-3108-1.php)

■ 研究領域 光電材料之製作與量測、  
半導體物理、奈米材料、  
脈衝雷射蒸鍍

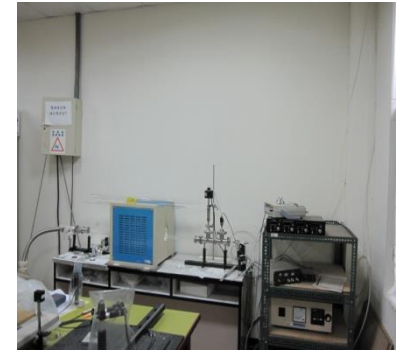
- 近期研究主題
- 光電材料薄膜與奈米結構之製作、量測、與應用
  - 氧化物半導體合金與摻雜薄膜之製程開發與檢測

■ Research Area Synthesis and characterization of optoelectronic materials, semiconductor physics, nanomaterials, pulsed laser deposition

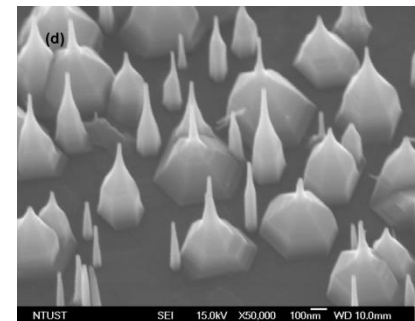
- Recent Topics
- Synthesis, characterization, and applications of optoelectronic materials films and nanostructures
  - Fabrications and characterizations of oxide semiconductor alloy/doped thin films



Pulsed laser deposition system



Furnace system with flow control



ZnO nanostructures

光電工程系  
Department of Electro-  
Optical Engineering

薄膜與奈米材料實驗室  
Thin Films and  
Nanomaterials Lab.



O: 億光大樓  
1130室  
#4633  
L: 億光大樓  
1111室  
#4681

王耀德 助理教授  
Dr. Yao-Te Wang

科羅拉多大學  
包德校區  
University of Colorado  
at Boulder

[wangyt@ntut.edu.tw](mailto:wangyt@ntut.edu.tw)

<http://www.eo.ntut.edu.tw/files/11-1045-3165-1.php>

- 研究領域
  - 光電半導體薄膜
  - 薄膜之磊晶與摻雜
  - 奈米材料
  - 稀磁性半導體
  - 高溫超導材料
- 近期研究主題
  - 氧化鋅透明導電膜
  - 氧化鋅p型半導體
  - FTO薄膜的應用
  - 高臨界電流密度超導材料
  - 表面磁光效應之量測
  - 磁阻特性量測及應用
- Research Area
  - Optoelectronic semiconductor thin films
  - Epitaxial Growth and Doping of Thin Films
  - Nanomaterials
  - Dilute Magnetic Semiconductors
  - High-Temperature Superconductors
- Recent Topics
  - ZnO based TCO
  - P-type ZnO Semiconductors
  - Application of FTO
  - Superconductors with High Critical Current Density
  - Measurements and Applications of SMOKE
  - Measurements and Applications of Magnetoresistance



光電工程系  
Department of Electro-Optical Engineering

有機半導體元件實驗室  
Organic Semiconductor Device Lab

OLED顯示與照明技術  
OLED Display & Lighting



O: 億光 0829  
Ext. 4638

L: 億光 0813  
Ext. 4690

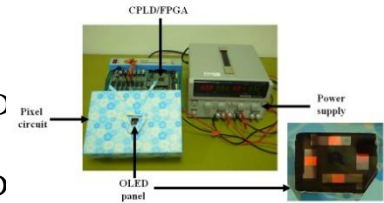
楊恆隆 助理教授  
Assist. Prof. Henglong Yang

美國麻薩諸塞大學羅爾分校  
University of Massachusetts  
Lowell, MA, USA

[yangh@ntut.edu.tw](mailto:yangh@ntut.edu.tw)

研究領域  
Research Areas

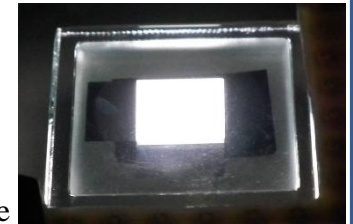
- AMOLED顯示技術  
AMOLED display technology
- OLED載子分析與元件物理  
Mobility and device physics of OLED
- AMOLED省電技術  
Power-saving technique of AMOLED
- 白光OLED照明光學  
Optics of white OLED lighting



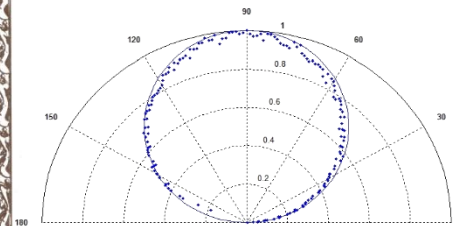
AMOLED實驗系統  
Experimental system for AMOLED

近期研究主題  
Recent Topics

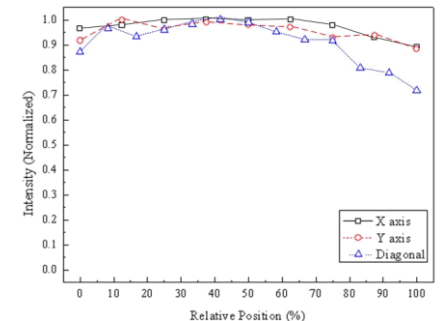
- AMOLED品質工程  
Quality Engineering for AMOLED
- AMOLED暫態功率分析  
Transient power analysis of AMOLED
- OLED熱傳分析  
Heat dissipation and analysis of OLED
- WOLED平面光源分析  
Analysis of planar WOLED lighting source
- WOLED光場實驗  
Experiment of WOLED optical field
- WOLED照明設計  
Optical design of WOLED lighting



WOLED面光源  
WOLED planar lighting source



WOLED光場特性  
Optical field of a WOLED



WOLED 面光源特性  
Characteristic of a WOLED

光電工程研究所  
Institute of electro-optical  
engineering

光纖光學與雷射研究  
Fiber optics & laser research

光纖與光學雷射實驗室  
Fiber and Laser Optics Lab.



O: 億光大樓  
9F 0928室  
#4627

李穎玫 助理教授 L: 億光大樓  
Prof. Yin-wen Lee 9F 0934室  
#4697

美國史丹佛大學  
Stanford University of USA  
[ywlee@ntut.edu.tw](mailto:ywlee@ntut.edu.tw)

<http://www.eo.ntut.edu.tw/bin/home.php>

研究領域

雷射工程與物理、光纖光學  
元件、非線性光學元件及特  
殊光學材料

近期研究主題

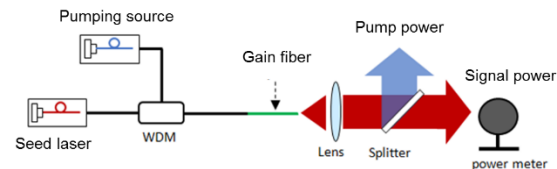
- 中紅外鎖模光纖雷射與超連續光譜光源之研發
- 光纖雷射非線性、光孤子或訊號變形之分析
- 高功率近紅外光纖雷射光源
- 脈衝光纖雷射之波長與脈衝波型轉換與變形分析與研究

Research Area

1. Advanced silicate fiber laser sources
2. High-power fiber laser devices
3. Investigation of material properties and nonlinear characteristics in fibers
4. Novel optical devices

Recent Topics

- Investigation of mid-IR all-fiber supercontinuous laser sources
- Analysis and mitigation of nonlinear effects, instability, and signal distortion in fiber lasers
- High-power near-infrared fiber laser
- Analysis of transformation nonlinear effects, instability and signal distortion in fiber lasers



高功率中紅外光纖雷射放大器  
High-power mid-infrared fiber amplifier



光學分析精密儀器  
Optical sophisticated instruments



鎖模光纖雷射系統  
Mode-locked fiber laser system

光電工程研究所  
Institute of Electro-Optical  
Engineering

光通訊系統  
Optical Communication  
Systems

數位光通訊系統實驗室  
Digital Optical  
Communication Lab.



O: 億光 833  
#4646

L: 億光 814  
#4674

李忠益 專案研究助理教授  
Research Assistant Prof.  
Chung-Yi Li

國立台北科技大學  
National Taipei University of  
Technology

[cyli@ntut.edu.tw](mailto:cyli@ntut.edu.tw)

<http://eo.ntut.edu.tw/files/11-1045-5000.php>

■ 研究領域

- 光纖通訊系統
- 光纖有線電視系統
- 光纖/微波傳輸系統
- 主/被動式光纖元件
- 主動式光纜

■ 近期研究主題

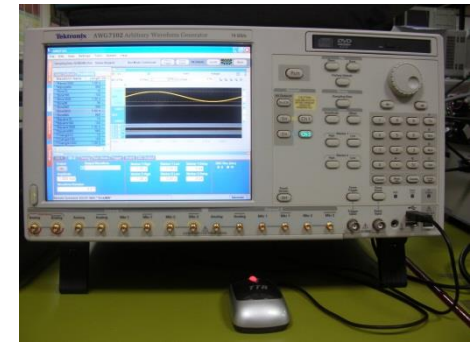
- 新世代 光纖寬頻/5G行動通訊/超高速可見雷射光通訊接取網路
- 混合式雙向光纖微波、可見光雷射整合通信系統
- 混合式三頻 (CATV/Digital CATV/16-QAM-OFDM) 室內有/無線 (GIPOF/VLLC) 接取整合傳輸系統

■ Research Area

- Optical fiber communication systems
- Fiber optical CATV transport system
- Radio-over-Fiber transport systems
- Fiber optic components
- Fiber optical active/passive components
- Active Optical Cables (AOC)

■ Recent Topics

- New Generation Broadband Network Based on Fiber-5G Mobile and Fiber-VLLC Convergences
- A Bidirectional Hybrid Radio-over-Fiber and Visible Laser Light Communication System
- A Hybrid CATV/Digital CATV/16-QAM-OFDM In-House Network over SMF and GI-POF/VLC Transport



任意波型產生器  
Arbitrary Waveform Generator



向量網絡分析儀  
Vector Network Analyzer



頻譜分析儀  
Spectrum Analyzer

光電工程研究所  
Institute of Electro-Optical  
Engineering

光電元件與材料  
Optoelectronic Material And  
Devices

光電元件與材料實驗室  
Optoelectronic Material  
And Devices Lab.



O:億光 930  
#4620

L:億光 1117  
#4678

陳美杏 副教授  
Prof. Mei-Hsin Chen  
國立台灣大學光電博士  
National Taiwan University, PE,  
Ph. D.

<https://eo.ntut.edu.tw/p/412-1069-12937.php?Lang=zh-tw>

- 研究領域
  - 太陽能電池元件
  - 元件界面物理特性分析
  - 電子能階結構
  - 有機/無機薄膜界面分析

- 近期研究主題
  - 有機/無機混成光電半導體界面特性研究
  - 有機光電半導體界面能階結構與光電特性探討
  - 有機光響應薄膜之光子吸收與載子傳輸行為分析

- Research Area
  - Photovoltaic Devices
  - Interfacial Physics of Devices
  - Electronic Structures in Devices
  - Organic/Inorganic Interfaces

- Recent Topics
  - Interfacial electronic properties in organic/inorganic semiconductor heterojunctions
  - Investigation of energy band diagrams and optoelectronic properties in organic photo-response thin films
  - Analysis of photon absorption and carrier transport behavior in photo-response thin films



外部量子效率量測儀器



蒸鍍機



太陽光模擬器

光電工程研究所  
Institute of Electro-Optical  
Engineering

近代奈米光子  
Modern Nanophotonic

近代奈米光子實驗室  
Modern Nanophotonic Lab.



O:億光 931  
#4630

L:億光 915  
#4630

鄭鈺潔 副教授

Prof. Mei-Hsin Chen

西班牙加泰隆尼亞理工大學博士

PhD, Europhotronics EM Doctorate program,  
European Laboratory for Non-Linear  
Spectroscopy, Universitat Politècnica de  
Catalunya

[https://milu7751992.wixsite.com/modern\\_photonics](https://milu7751992.wixsite.com/modern_photonics)

■ 研究領域

- 液晶彈性體
- 光子學
- 仿生微型機器人
- 光/物質的相互作用
- 超穎表面
- 隨機雷射
- 平面聚焦裝置

■ 近期研究計畫

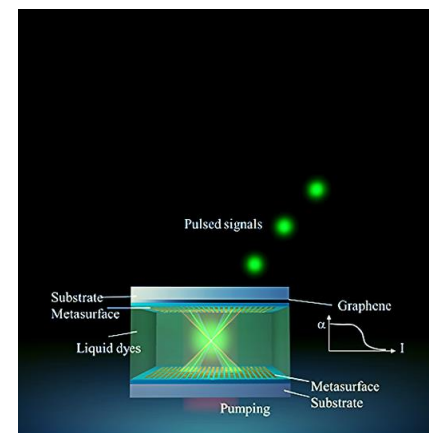
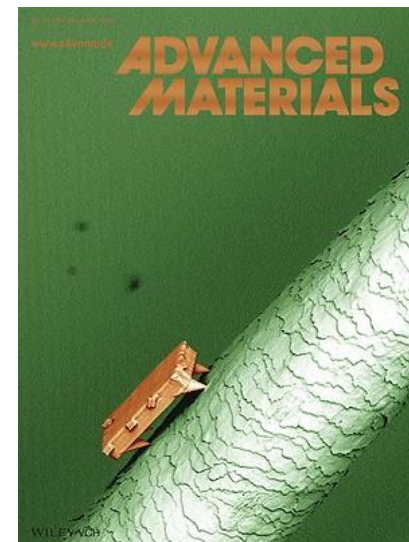
- 科技部五年愛因斯坦計畫  
2018年~2023年
- 科技部三年新進人員研究計畫  
2017年~2020年

■ Research Area

- Liquid Crystals Elastomers
- Photonics
- Bio-inspired, Micro-robots
- Light/matter interaction
- soft materials
- Metasurface
- Random laser
- Flat focusing devices

■ Recent Research  
Project

- NSTC five-year Einstein's Program  
2018 ~ 2023
- NSTC three-year newcomers  
researching Program 2017 ~ 2020



FLAT NONLINEAR FOCUSING MIRROR  
WITHOUT OPTICAL AXES

光電工程研究所  
Institute of Electro-Optical  
Engineering

雷射物理  
Laser Physics

雷射物理實驗室  
Laser Physics Lab.



O:億光 1129  
#4622

L:億光 1129  
#4622

董容辰 助理教授  
Prof. Jung-Chen Tung  
國立交通大學電物博士

<https://eo.ntut.edu.tw/p/412-1069-14840.php?Lang=zh-tw>

■ 研究領域

- 雷射物理
- 固態雷射光源
- 光學圖斑形成
- 光學角動量技術
- 量子物理

■ Research Area

- Laser Physics
- Solid-State Laser Sources
- Optical Pattern Formation
- Optical Angular Momentum Technology
- Quantum Physics