



2020

Taiwan Experience Education Program

National Taiwan Normal University

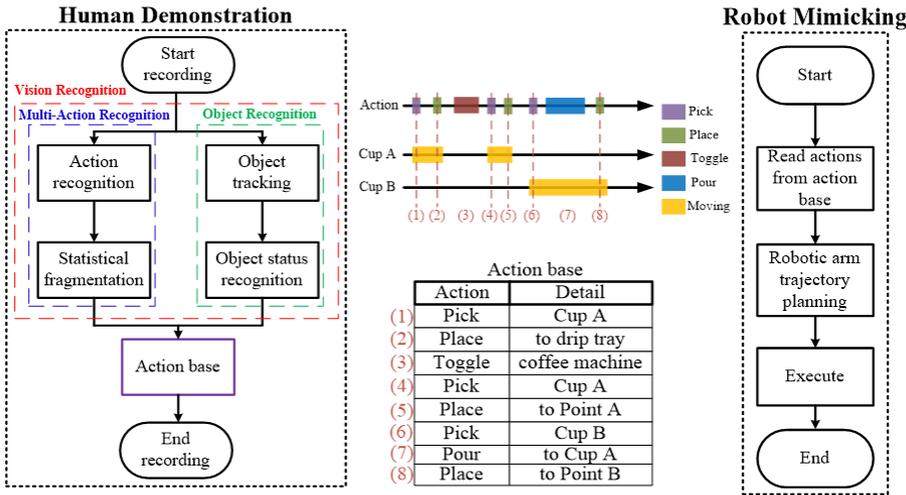
Application website : <https://www.studyintaiwan.org/teep/>

A vision-based learning from demonstration (LfD) robotic system is currently under investigation to develop a mimic robot with mobile capability, where object detection and action recognition are used to understand the behaviors of the demonstrator, so that the robot can reproduce the tasks demonstrated by the human.

Techniques used in study

Participating students can have the opportunity to build knowledge in deep learning and robotics, including object detection, action recognition, motion planning, grasping strategies, robot navigation.

Learning from demonstration Robotic system



Chen-Chien Hsu, Professor
 Computational Intelligence and Robotics (CIR) Lab
 jhsu@ntnu.edu.tw

Background:
 PhD, Griffith University, Australia

Funding:
 Ministry of Science and Technology
 National Taiwan Normal University



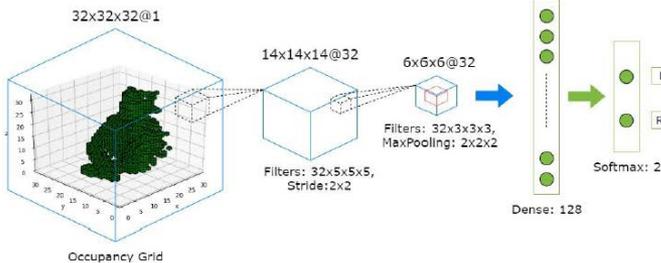
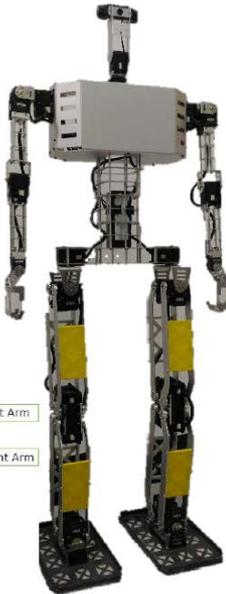
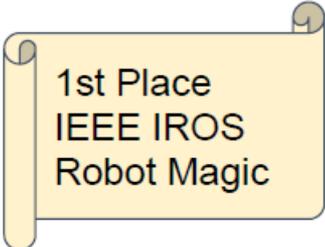
Publications

1. Chiang-Heng Chien, Chen-Chien Hsu*, Wei-Yen Wang, and Hsin-Han Chiang, "Indirect Visual Simultaneous Localization and Mapping System Based on Linear Models," early publication, IEEE Sensors Journal, Nov., 2019
2. Pin-Jui Hwang, Chen-Chien Hsu*, and Wei-Yen Wang, "Development of a Mimic Robot: Learning from Demonstration Incorporating Object Detection and Multi-Action Recognition," accepted for publication, IEEE Consumer Electronics Magazine, Oct., 2019.
3. Cheng-Hung Lin, Wei-Yen Wang, Shen-Ho Liu, and Chen-Chien Hsu*, Chiang-Heng Chien, "Heterogeneous Implementation of a Novel Indirect Visual Odometry System," IEEE Access, Vol. 7, pp. 34631-34644, Mar., 2019.



We develop robot's that are able to compete in sports events with humans. This requires that a robot can work in an unstructured environment with the same speed and accuracy as humans. This requires that a robot has similar capabilities in computer vision, motion control, and high level reasoning as humans.

At the moment, we are working on a robot archer that can compete at the International level.



Jacky Baltes, Professor
Educational Robotics Center (ERC)
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Background:
PhD, University of Calgary, Canada
Funding:
Ministry of Science and Technology National
Taiwan Normal University

Publications

1. Morris, K.J., Samonin, V., Baltes, J. et al. A robust interactive entertainment robot for robot magic performances. *Applied Intelligence* 49(11), 3834–3844 (2019) doi:10.1007/s10489-019-01565-7
2. Hosseinmemar, A., Baltes, J., Anderson, J. et al. "Closed-loop push recovery for inexpensive humanoid robots", *Applied Intelligence* (2019) 49(11): 3801-3814. <https://doi.org/10.1007/s10489-019-01446-z>
3. Shams Esfanabadi, V., Rostami, M., Rahmati, S., Baltes, J., & Sadeghnejad, S. (2019). The average speed of motion and optimal power consumption in biped robots. *The Knowledge Engineering Review*, 34, E25. <https://doi.org/10.1017/S0269888919000201>



Our research mainly focus on the following research topics: (1) Digital holographic imaging in microscopy and tomography, including nano/micro-optics element measurement and inspection, biomedical cell imaging etc. (2) 3-D image and digital hologram process based on artificial intelligence (AI) with machine/deep learning; (3) 3-D imaging and display methods, including 3-D information acquisition, camera, display and related techniques and applications.

Techniques used in study

- Digital Holographic Microscopy
Holographic Tomography
Holographic Optical Tweezers
Artificial Intelligence
Single/Multi cell imaging and Analysis

Chau-Jern Cheng, Professor
Director, Lab of Information Optics and Photonics
Department of Electro-Optical Engineering
cjcheng@ntnu.edu.tw
https://ioplab.ieo.ntnu.edu.tw/en/index.php

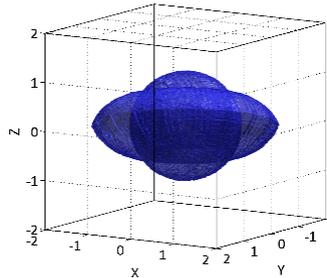


Background:
PhD in Optical neural network
From National Chiao-Tung University

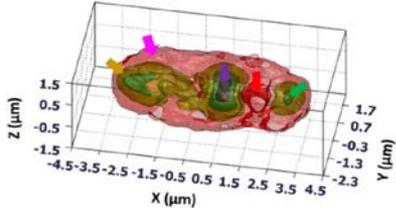
Funding: Ministry of Science and Technology

Some of our research achievements

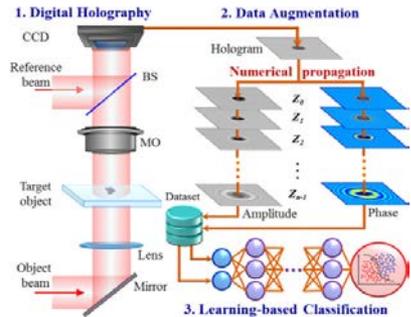
'UFO' like shaped coherent transfer function



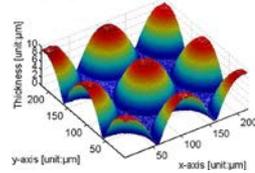
Sub-cellular imaging of Live candida rugosa



Learning-based classification



3D imaging of Micro lens array



Selected publications

- Adaptive wavefront correction structured illumination holographic tomography. Sci. Rep. 9, 10489-10496(2019)
Digital hologram for data augmentation in learning-based pattern classification. Opt. Lett. 43(21), 5419-5422(2018).
Integrated dual-tomography for refractive index analysis of free-floating single living cell with isotropic superresolution. Sci. Rep. 8, 5943-5951(2018)



Department of Electro-Optical Engineering

Study of label-free diagnostics for monitoring of blood cells by THz and ultrafast spectroscopy

The key value of our expertise is to establish new comprehensive quantitative imaging approach for investigation of dynamic behaviors of the blood components. Terahertz (THz) technique is an emerging field and proved its versatile imaging capability without labelling the sample used. The THz image system uses digital holographic and microscopic principles and becomes an important tool to monitor the various modalities such as phase profile, polarization effect, fluorescence, spectral estimations, three-dimensional (3D) imaging etc.

Techniques used in study

- Ultrafast and Terahertz Photonics
- Graphene Optoelectronics
- Nonlinear Optics
- Information Photonics
- Liquid Crystal Physics

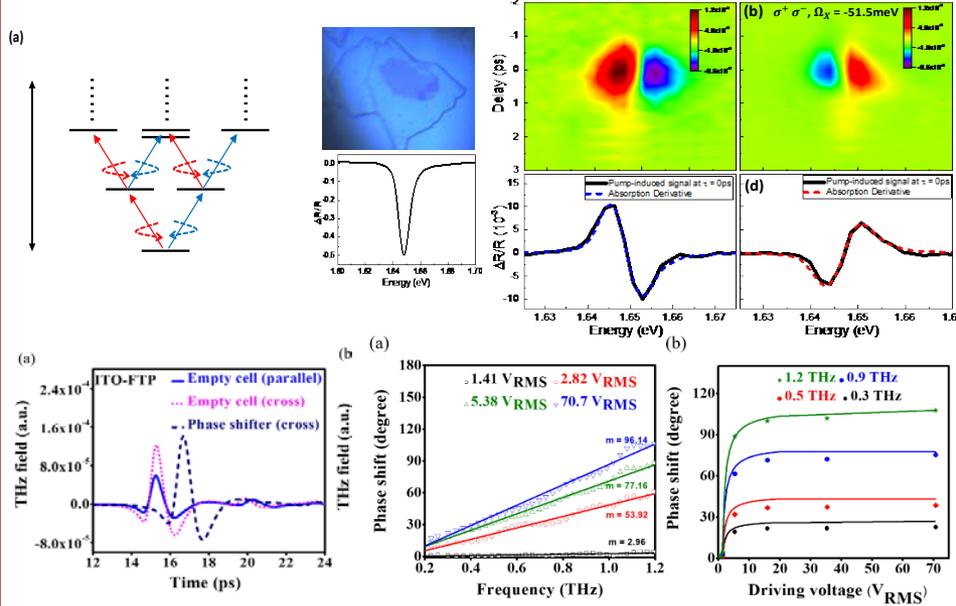
Chan-Shan Yang, Assistant Professor
Director, Ultrafast and Nanoscale Infrared-to-Terahertz Science (UNITS) Lab
<https://sites.google.com/view/units-lab/home>
Institute of Electro-Optical Engineering
csyang@ntnu.edu.tw

Background:
PhD in Physics, National Tsing-Hua University
PostDoc. Scientist, UC Berkeley

Funding: Ministry of Science and Technology



Some of our research achievements



Selected publications

- Quantum-critical conductivity of the Dirac fluid in graphene, *Science* 364, issue 6436, 158-162 (2019).
- Identification of spin, valley and moiré quasi-angular momentum of interlayer excitons, *Nature Physics* 15, 1140-1144 (2019).
- Biexcitonic optical Stark effects in monolayer molybdenum diselenide, *Nature Physics* 14, 1092-1096(2018).



My research interest mainly focus on the design and synthesis of organocatalyst and study their catalytic application. We have carried out various reactions, such as: Michael reaction, aldol, Mannich reaction, α -amination and etc. We are interested in developing cascade reaction that to construct multifunctional group in the products with high chemical yield and stereoselectivities.

Techniques used in study

Reaction setup and monitor; TLC analysis; HPLC analysis; Flash column chromatography; Separation and purification; NMR spectroscopy; HRMS; Single crystal X-ray analysis.

Kwunmin Chen, Professor

Department of Chemistry, Dean, College of Science
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Background:

PhD in Chemistry, University of Pennsylvania, Philadelphia, PA, USA

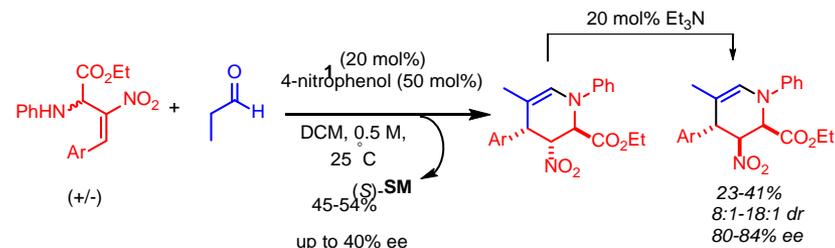
Funding:

Ministry of Science and Technology
National Taiwan Normal University

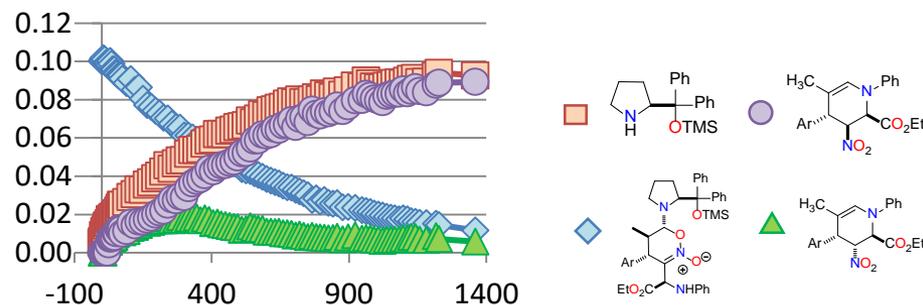


Asymmetric catalysis and beyond

Formation of Dihydroxazine N-Oxides and subsequently Hydrolysis:



Progress Studies of the Hydrolysis Reaction by 1H NMR:



Publications

- Wan-Yun Huang, Ramani Gurubrahamam, and Kwunmin Chen* "An Unprecedented Organocascade Synthesis of Functionalized Bicyclic Nitrones from 2-Aminomalonate Derived Nucleophiles and 1-Nitro-1,3-Enynes via Allenes Formation and Subsequent Rearrangement" *Adv. Synth & Catal.* 2019, 361, 170-175.
- Ramani Gurubrahamam, Koppanathi Nagaraju and Kwunmin Chen* "Organocatalytic synthesis of densely functionalized oxa-bridged 2,6-epoxybenzo[b][1,5]oxazocine heterocycles" *Chem. Commun.* 2018, 54, 6048-6051.



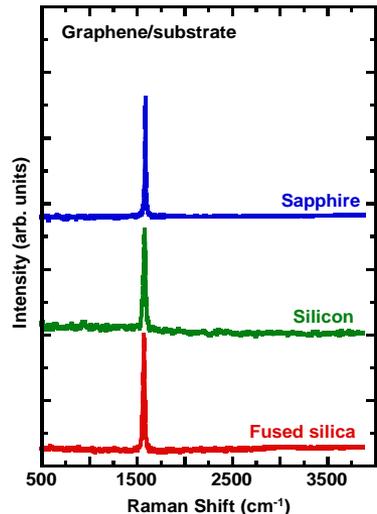
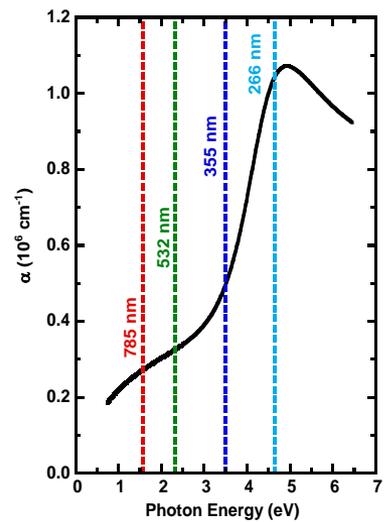
The overall accomplishment of my research is to utilize optical spectroscopic technique to study the electronic and vibrational excitations of two-dimensional materials such as graphene and layered transition metal dichalcogenides.

Techniques used in study

My primary techniques are THz, infrared, Raman, optical, and ellipsometric spectroscopies.

Monolayer graphene

$\lambda_L \sim 266 \text{ nm (4.66 eV)}$



Hsiang-Lin Liu, Professor
Department of Physics
hliu@ntnu.edu.tw

Background:
PhD in Physics, University of Florida,
USA

Funding:
Ministry of Science and Technology



Publications

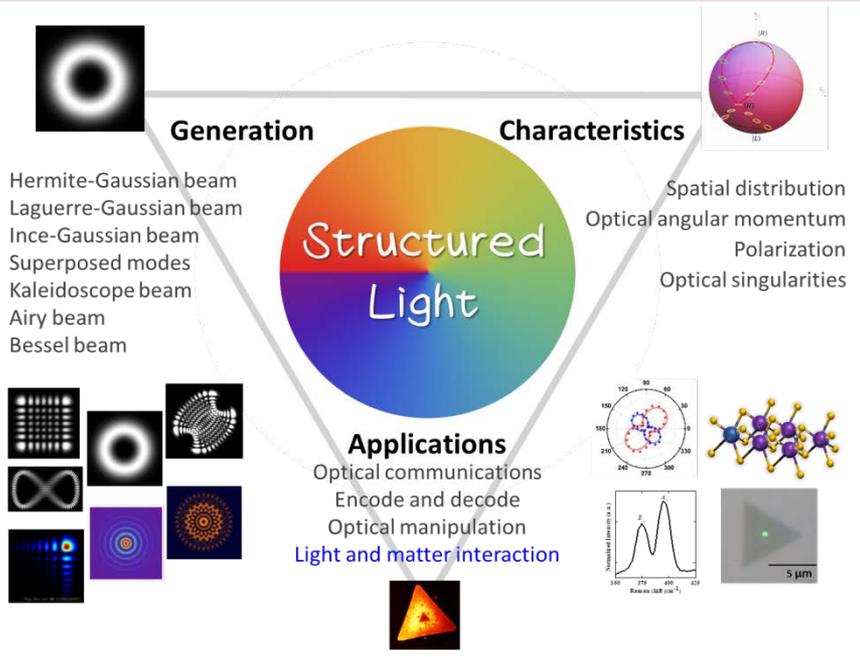
- H. W. Chen, Y.-W. Chen, J.-L. Kuo, Y. C. Lai, F. C. Chou, C. H. Du, and H. L. Liu*, "Spin-charge-lattice coupling in YBaCuFeO₅: Optical properties and first-principles calculations", Scientific Reports 2019, 9, 3223.
- H. L. Liu*, T. Yang*, Y. Tatsumi, Y. Zhang, B. Dong, H. Guo, Z. Zhang, Y. Kumamoto, M.-Y. Li, L.-J. Li, R. Saito, and S. Kawata, "Deep-ultraviolet Raman scattering spectroscopy of monolayer WS₂", Scientific Reports 2018, 8, 11398.



My researches include the structured light possessing spin and orbital angular momentum and its interaction of layered materials . We are studying various structured light and its applications, the optical properties (Raman scattering and photoluminescence) of layered materials, and physical phenomenon of the exciton excited by structured light.

Techniques used in study

- Generation of structured light from laser cavities, vortex phase plates and a spatial light modulator
Raman spectroscopy and photoluminescence measurement
Spatial polarization detection and analyses



Ting-Hua Lu, Associate Professor
Department of Physics
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Background:
PhD in Physics, National Chiao Tung University, Taiwan

Funding:
Ministry of Science and Technology

Publications

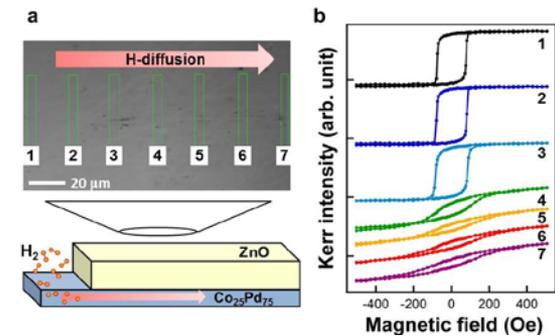
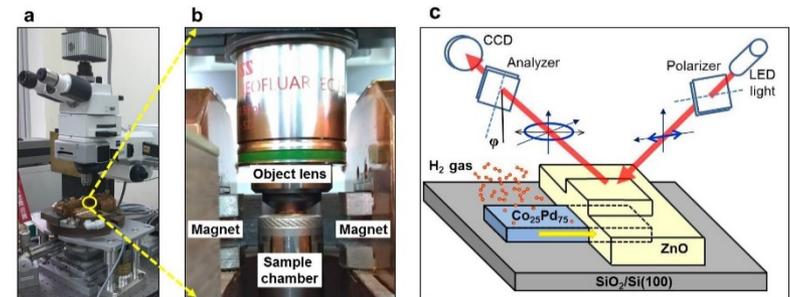
- Teng-De Huang, Kristan Bryan Simbulan, Yu-Fan Chiang, Yann-Wen Lan, and Ting-Hua Lu, "Symmetry breaking of in-plane Raman scattering by elliptically polarized light in MoS2", Phys. Rev. B 100, 195414 (2019)
T. D. Huang and T. H. Lu, "Controlling an optical vortex array from a vortex phase plate, mode converter, and spatial light modulator", Opt. Lett. 44, 3917 (2019)
T. H. Lu, T. D. Huang and G. Y. Chiou, "Kaleidoscope vortex lasers generated from astigmatic cavities with longitudinal-transverse coupling", Opt. Express 26, 31464 (2018)



Our research focuses on various low-dimensional magnetic materials, such as magnetic thin films and nanoparticle assemblies. We also combined the magnetic materials with different functional 2D-materials to form spintronic devices for applications.

Techniques used in study

My primary techniques are UHV-MBE, CVD-growth of 2D materials, Scanning tunneling microscope, Atomic force microscope, Magneto-optical Kerr microscope and etc.



Wen-Chin Lin, Professor

Department of Physics
wclin@ntnu.edu.tw

Background:

PhD in Physics, National Taiwan University

Funding:

Ministry of Science and Technology



Publications

- Visualizing hydrogen diffusion in magnetic film through magneto-optical Kerr effect P.-C. Chang, Y.-Y. Chang, W.-H.Wang, F.-Y. Lo, W.-C. Lin, *Communications Chemistry* 2:89 (2019).
- Height reversal after Au deposition on MoS₂ flakes/SiO₂: thermal control of interfacial nucleation, Y.-H. Shen, C.-C. Hsu, P.-C. Chang, W.-C. Lin, *Appl. Phys. Lett.* 114, 181601 (2019).
- Hydrogen-mediated magnetic domain formation and domain wall motion in Co₃₀Pd₇₀ alloy films, P.-C. Chang, C.-M. Liu, C.-C. Hsu, and W.-C. Lin, *Scientific Reports* 8:6656 (2018)



I am a theoretical physicist and have been worked on various topics on string theory, black hole physics, holographic principle and quantum information sciences. In recent years and near future I mainly work on the gravitational wave astronomy by analyzing the gravitational wave observational data from LIGO/Virgo/KAGRA collaborations, and study their theoretical implications to black hole physics, dark matter, cosmology and astrophysics. We also develop the machine learning tools for the next generations of gravitational wave data analysis such as LISA and Einstein telescope.

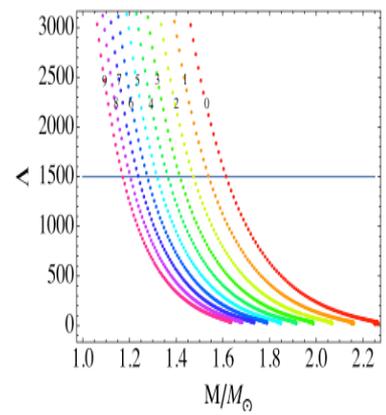
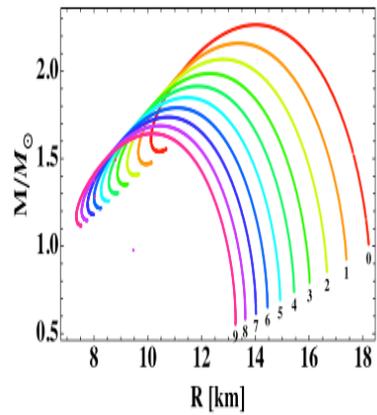
Our webpage: <https://taipeigravitationalwavegroup.weebly.com>

Techniques used in study

Quantum Field Theory; General Relativity
Machine Learning for gravitational wave data analysis

We derive the following equation of state for nuclear matter from holographic quantum chromodynamics (QCD) and use it to yield neutron star configurations as shown by mass-radius relation and tidal Love number.

$$\epsilon/\epsilon_{\odot} = 2.629A^{-0.192}(p/p_{\odot})^{1.192} + 0.131A^{0.544}(p/p_{\odot})^{0.456}$$



Feng-Li Lin, Professor
Department of Physics
Taipei Gravitational Wave Group
Email: linfl@ntnu.edu.tw

Background:
PhD in Physics, University of Utah
Salt Lake City, UT

Funding:
Ministry of Science and Technology
National Center for Theoretical Sciences



Publications

- Compact Star of Holographic Nuclear Matter and GW170817, K. Zhang, T. Hirayama, L.-W. Luo and F.-L. Lin*. Physic Letter B 801, 135176 (2020).
- Distinguishing Black Hole Microstates using Holevo Information, W.-Z. Guo, F.-L. Lin* and Jiaju Zhang*. Physical Review Letters 121, 251603 (2018).
- Satellite testing of a gravitationally induced quantum decoherence model, P. Xu, Y. Ma, J.-G. Ren, H.-L. Yong, T. C. Ralph, S.-K. Liao, J. Yin, W.-Y. Liu, W.-Q. Cai, X. Han, H.-N. Wu, W.-Y. Wang, F.-Z. Li, M. Yang, F.-L. Lin, L. Li, N.-L. Liu, Y.-A. Chen, C.-Y. Lu, Y. Chen, J. Fan*, C.-Z. Peng* and J.-W. Pan*. Science 366, 132 (2019).

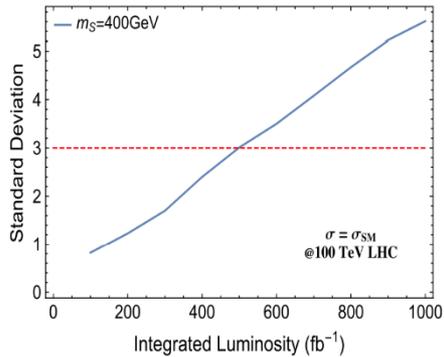


My research interests center around the theoretical particle physics, especially the phenomenological aspects of new physics beyond the Standard Model. My past and current works focus mainly on LHC phenomenology, dark matter and neutrino physics.

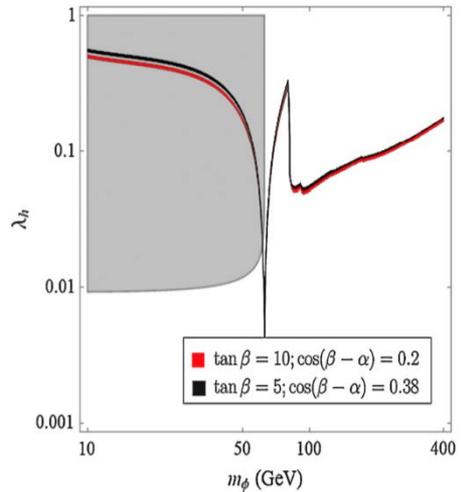
Techniques used in study

Particle Physics, Quantum Field Theory, Group Theory, Numerical Package (e.g. Madgraph, CalcHEP, MadDM, MicrOMEGAs)

Discovery potential of new scalar in gauged 2HDM at the LHC



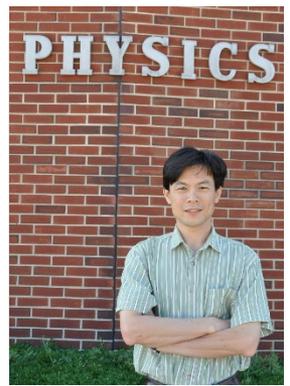
Parameter space fits the current dark matter relic density



Chuan-Ren Chen, Associate Professor
Department of Physics
crchen@ntnu.edu.tw

Background:
Ph. D. in Physics, Michigan State University, USA

Funding:
Ministry of Science and Technology



Publications

- **C.-R. Chen**, C.-W. Chiang, K.-Y. Lin, " A Variant Two-Higgs Doublet Model With A New Abelian Gauge Symmetry", Phys. Lett. B795 (2019), 22-28.
- **C.-R. Chen**, Y.-X. Lin, V.Q. Tran, T.-C. Yuan," Pair Production of Higgs Bosons at The LHC in Gauged 2HDM", Phys. Rev. D99 (2019) no.7, 075027
- **C.-R. Chen**, J. Hajer, T. Liu, I. Low, H. Zhang "Testing Naturalness", JHEP 1709, 129 (2017)

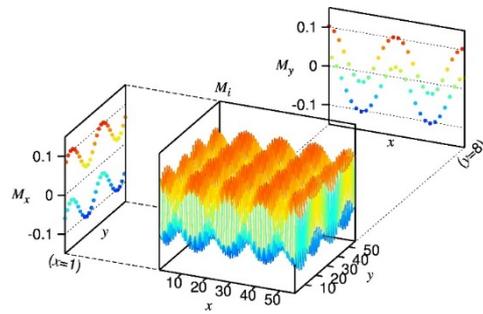


My research interest mainly focus on the superconductivity. My group can implement computer programs and use high performance computer to do the numerical calculation, such as exact diagonalization, parallel computing, and so on. We have studied the iron-based superconductors and are carrying out the copper-based superconductors now..

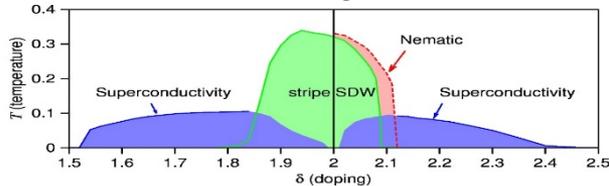
Techniques used in study

- Computer language: Fortran/Python/C++
- Mainframe machine: Linux/shell script

Space configuration in nematic state



Phase diagram



Hong-Yi Chen, Associate Professor
 Department of Physics
 hongyi@ntnu.edu.tw



Background:
 PhD in Physics, University of Houston
 Texas, USA

Funding:
 Ministry of Science and Technology
 National Taiwan Normal University

Publications

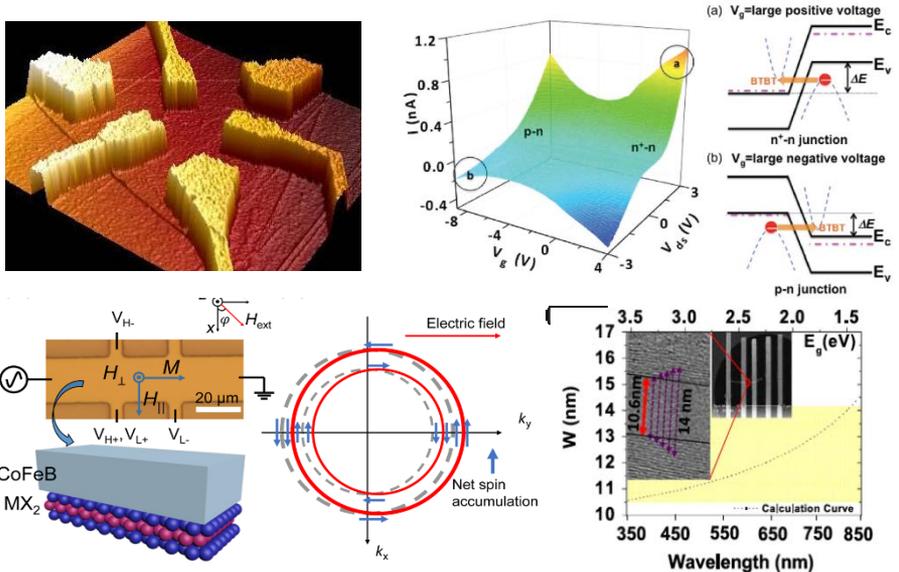
- Hong-Yi Chen, Nematicity in Electron-doped iron-pnictide superconductors, "Superconductivity and Superfluidity," [Book] ISBN 978-1-78984-065-0 (2019).
- Chung-Pin Chou, Hong-Yi Chen*, C.S. Ting, The nematicity induced d -symmetry charge density wave in electron-doped iron-pnictide superconductors, Physica C 546, 61 (2018).



Our researches mainly focus on the the science and technology of nanomaterials, including fundamental physics and practical applications based on 0-D nanoparticles, 1D nanowire/nanotube and 2D layered materials, specially in graphene and layered transition metal dichalcogenides. Total 18 SCI papers were published in last 5 years (2015-2019).

Techniques used in study

- Chemical vapor deposition
- e-beam lithography
- LED lithography
- Micro-Raman and PL system
- Electrical measurement system
- Optical-electric-magnetic measurement system
- Low temperature optical and electrical measurement system



Research achievements in the aspect of diverse 2D electronics

Yann-Wen Lan, Associate Professor
ASQNLab/Department of physics
ywlan@ntnu.edu.tw



Background:
PhD in electrical engineering, National Taiwan University

Funding:
Ministry of Science and Technology

Selected Publications

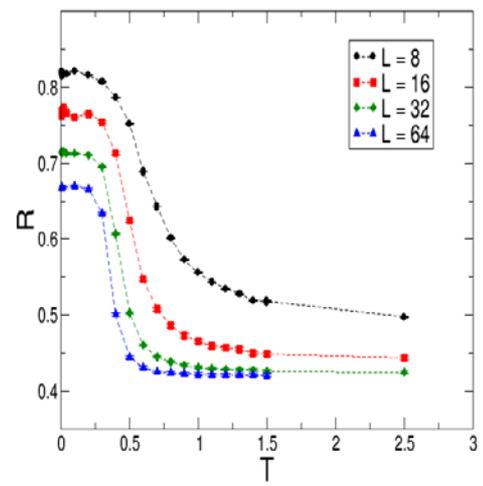
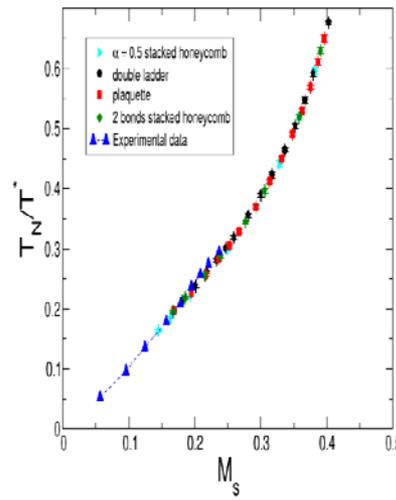
- **Yann-Wen Lan***, Po-Chun Chen, Yun-Yan Lin, Ming-Yang Li, Lain-Jong Li, Yu-Lin Tu, Fu-Liang Yang, Min-Cheng Chen and Kai-Shin Li*. Scalable fabrication of a complementary logic inverter based on MoS₂ fin-shaped field effect transistors. DOI: 10.1039/C8NH00419F, **Nanoscale Horizons** 2019. **IF : 9.391**
- Che-Yu Lin, Xiaodan Zhu, Shin-Hung Tsai, Shiao-Po Tsai, Sidong Lei, Yumeng Shi, Lain-Jong Li, Shyh-Jer Huang, Wen-Fa Wu, Wen-Kuan Yeh, Yan-Kuin Su, Kang L. Wang and **Yann-Wen Lan*** "Atomic-Monolayer Two-Dimensional Lateral Quasi-Heterojunction Bipolar Transistors with Resonant Tunneling Phenomenon" **ACS Nano**, 11 (11), pp 11015–11023, 2017, **IF : 13.942**



Our group focus on studying quantum and classical phase transitions and the associated critical phenomena using first principles Monte Carlo Simulations as well as Neural Networks

Techniques used in study:

Monte Carlo and quantum Monte Carlo simulations, Neural Networks



Fu-Jiun Jiang, Professor
Department of Physics
fjjiang@ntnu.edu.tw



Background:
PhD, Duke University, USA

Funding:
Ministry of Science and Technology, Taiwan

Publications:

1. D.-R. Tan and F.-J. Jiang*, Physical Review B, 98, 245111 (2018).
2. D.-R. Tan, C.-D. Li, and F.-J. Jiang*, Physical Review B, 97, 094405 (2018).

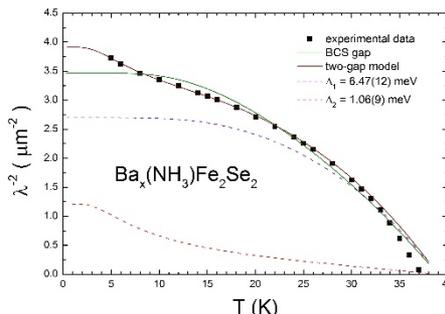
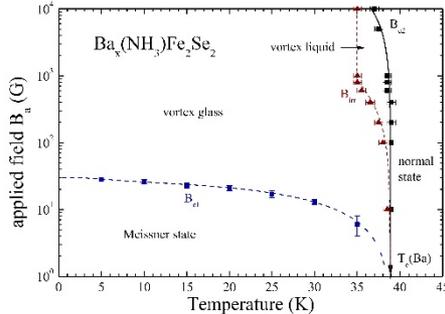


Study the electronic structure and mechanism of unconventional superconductivity

Superconductivity studies are always strongly related to energy saving green technologies. Especially unconventional superconductors, i.e. iron-chalcogenides, have resulted to many interested new understandings of electronic properties of matters. Our lab focus on measurements by tunnel diode oscillator on iron-based superconducting single crystals.

Techniques used in study

- Chemical vapor/liquid transport crystal growth
- Low temperature transport measurement
- Magnetic measurement
- RF electronics



By synthesizing high quality $Ba_x(NH_3)Fe_2Se_2$ superconductor we determined its superconducting phase diagram and its two-gap behavior of supercurrent density.

Yung-Yuan Hsu, Associate Professor

Lab of Correlated Electrons
Department of Physics
Yungyuan.hsu@gmail.com

Background:

Ph. D. in Physics, National Tsing-Hua University

Funding:

Ministry of Science and Technology
National Taiwan Normal University



Publications

- Y.Y. Hsu, Y.B. Li, S.T. Jian, G.K. Li, M.C. Yang, "Two-gap superconducting properties of alkaline-earth intercalated $A_x(NH_3)Fe_2Se_2$ ($A = Ba, Sr$)", Supercond. Sci. Technol. 29, 035005 (2016).
- T.I. Hung, L.A. Chen, C.H. Huang, C.Y. Lin, C.W. Chen, Y.B. You, S.T. Jian, M.C. Yang, Y.Y. Hsu, J.C. Ho, Y.Y. Chen, H.C. Ku, "Low temperature heat capacity of layered superconductors $SrNi_2Ge_2$ and $SrPd_2Ge_2$ ", J. Low Temp. Phys. 171, 148 (2013).



Understanding magmatic processes: Geochemical and geochronological studies

We study the island arc magmatism and volcanism processes in the Northern Luzon Arc (Taiwan and Philippine) and the Western Sunda-Banda Arc (Sumatra and Java Island, Indonesia). Our researches are focusing on igneous geochemistry, zircon uranium-lead geochronology, volcanology and experimental petrology of the Cenozoic volcanic island rocks. We welcome students who want to visit our lab for learning geochemical analyses and using geochemical data.

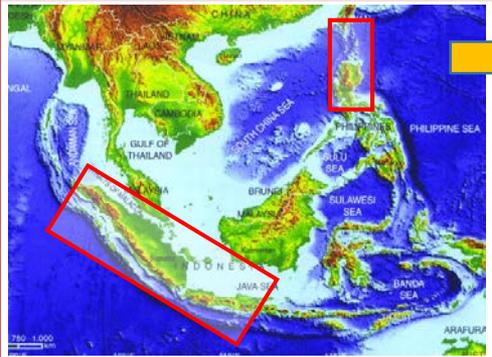
Techniques used in study

Operations on X-ray Fluorescence (XRF), Scanning Electron Microscope (SEM), Energy Dispersive Spectrometer (EDS), Electron Probe Micro-Analyses (EPMA), Laser Ablation Microprobe (LAM)-ICPMS

Yu-Ming Lai, Assistant Professor
Department of Earth Sciences
Lab of Magmatic and Volcanic Processes
ymlai@ntnu.edu.tw

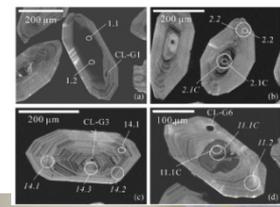
Background:
PhD in Department of Geosciences,
National Taiwan University, Taiwan

Funding: Ministry of Science and Technology



Study area:
Northern Luzon Arc
Western Sunda-Banda Arc
Focus on:
Magma evolution
Petrogenesis
Cenozoic volcanism

Field survey and sample collection



Laboratory analysis →



Publications

- Zircon U-Pb and Hf isotopic constraints on the magmatic evolution of the Northern Luzon Arc. *Terrestrial Atmospheric and Oceanic Science*, 2018, 29 (2), 153-190.
- Age, geochemical and isotopic variations in volcanic rocks from the Coastal Range of Taiwan: Implications for magma generation in the Northern Luzon Arc. *Lithos*, 2017, 272-273, 92-115.



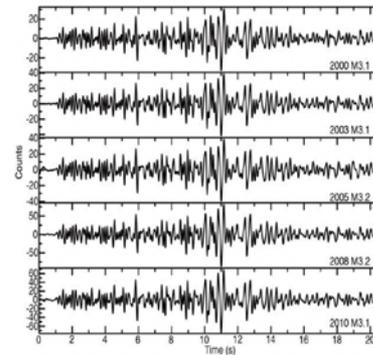
Research interest

My research is primarily focused on earthquake seismology, mainly the physics of seismological phenomena associated with different styles and mechanisms of slip in natural fault systems. The general goal is to better understand where, when, and how fault creeps. We have detected repeating earthquake, tectonic tremor, earthquake swarms in Taiwan and build catalogs as complete as possible, to understand their spatiotemporal characteristics and physics behind.

Techniques used in study

Signal Processing

Repeating earthquakes



Creeping fault in eastern Taiwan



Kate Huihsuan Chen, Professor

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Background:

PhD in Earth Sciences, National Cheng Kung Univ., Taiwan

Funding:

Ministry of Science and Technology



Publications

- **Chen, K. H.,** Tai, H.J., S. Ide, T. Bryne, C. W. Johnson (2018), Tidal modulation and tectonic implication of non-volcanic tremors in Taiwan, *J. Geophys. Res.*, 123, 5945-5964, doi:10.1029/2018JB015663.
- **Chen, K. H.** and Burgmann, R. (2017), Creeping faults: Good news, bad news?, *Review of Geophysics (Commentary)*, 55, 10.1002/2017RG000565.



My major research interests include science education, e-Learning, interdisciplinary science learning and science communication, and I have authored and co-authored more than 120 articles.

Techniques used in study

My primary techniques are CloudClassRoom (ccr.tw), Board Games, NGS (next generation sequencing), and Extended Reality.

Interdisciplinary Science Learning



2013, Dr. Chang's catechol-O-methyltransferase (COMT) study was privileged with a report by the New York Times Sunday Magazine, as well as in the news featured on Association of Psychological Science website

E-Learning



In 2019, CloudClassRoom (CCR) mobile system, which was developed by him and his research team, has been selected as an exemplar institution in the 2019 EDUCAUSE Horizon Report.

Chun-Yen Chang, Director Science Education Center changcy@ntnu.edu.tw



Background: PhD in Science Education, The University of Texas at Austin, USA

Publications

• Chang, Y. H., Chang, C. Y.* & Tseng, Y. H. (2010). Trends of science education research: An automatic content analysis. Journal of Science Education and Technology, 19(4), 315-331. (SSCI, SCI-expanded)
• Yeh, T. K., Chang, C. Y.*, Hu, C. Y., Yeh, T. G. & Lin, M. Y. (2009). Association of catechol-O-methyltransferase (COMT) polymorphism and academic achievement in a Chinese cohort. Brain and Cognition, 71, 300-305. (SSCI, SCI)
• Wang, H. C.*, Chang, C. Y.* & Li, T. Y. (2008). Assessing creative problem-solving with automated text grading. Computers & Education, 51(4), 1450-1466. (SCI, SSCI)
• Chien, Y. T., Chang, Y. H., & Chang, C. Y.* (2016). Do we click in the right way? A meta-analytic review of clicker-integrated instruction. Educational Research Review, 17, 1-18. (SSCI)
• Rundgren, C. J., Chang Rundgren, S. N., Tseng, Y. H., Lin Pei-Ling, & Chang, C. Y.* (2012).
• Are you SLiM? – Developing an instrument for civic scientific literacy measurement (SLiM) based on media coverage. Public Understanding of Science, 21(6), 759-773. (SSCI).

