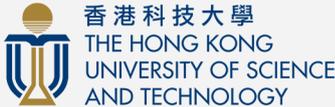




Newsletter 6

# State Key Laboratory of Advanced Displays and Optoelectronics Technologies



[WWW.SKLUST.HK](http://WWW.SKLUST.HK)

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## ““ About Us

The State Key Laboratory of Advanced Displays and Optoelectronics Technologies (hereafter SKL) is directed by Prof. Hoi-sing KWOK, Dr. William M W Mong Professor of Nanotechnology and Chair Professor in the Department of Electronic and Computer Engineering at the Hong Kong University of Science and Technology (HKUST). The SKL serves as a bridge connecting HKUST and research institutes and enterprises in mainland China to facilitate both local and national scientific development through close cooperation.

## ““ Our Objectives

- Become the leading display research center in China;
- Collaborate with the display industry and market to develop Advanced displays and optoelectronics technology;
- Generate intellectual properties on display and optoelectronics technology;
- Create a world-class platform for exchanges between Chinese and foreign researchers on display research.

The SKL's research focuses on exploring cutting-edge and highly industrial-applicable display inventions. The SKL explores five core aspects: (1) thin-film transistors (TFTs); (2) organic light-emitting diodes (OLEDs); (3) liquid-crystal displays (LCDs); (4) video information processing and circuit design; and (5) flexible, high-resolution silicon LED and nano-optoelectronic displays.

The SKL places particular emphasis on “green displays” such as active matrix OLED (AMOLED) displays, field sequential color LCDs (FS-LCDs) and bistable LCDs, all of which feature low power consumption. In addition to conducting research, the SKL also offers training and short courses for enterprises in mainland China, as well as organizes seminars and conferences with international research institutes.



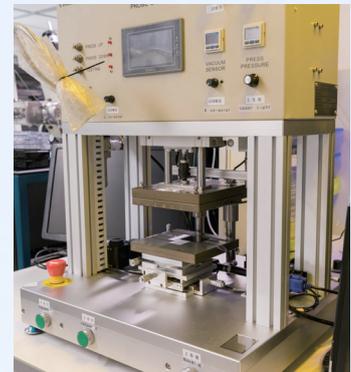
# Facilities

The SKL has unlimited access to some key facilities of HKUST: (1) the Centre for Display Research (CDR); (2) the Materials Characterisation & Preparation Facility (MCPF); (3) Organic Electronic Laboratory (OEL) ; and (4) the Nanoelectronics Fabrication Facility (NFF).

## Centre for Display Research

### CDR

The Centre for Display Research (CDR) at HKUST was established with seed funding from the Hong Kong Trade and Industry Department. The CDR provides technical support services for local LCD manufacturers, conducts research of advanced displays of value to the local industry and trains students with hands-on experience in LCD manufacturing for the local industry.



## Materials Characterisation & Preparation Facility

### MCPF

The MCPF is a central facility intensively serving academic researchers and postgraduate students at the School of Science and School of Engineering for the preparation, characterization and analysis of advanced materials. In addition to serving HKUST, MCPF also provides services to Hong Kong sister institutions and clients of government laboratories and regional industries. It has been an indispensable central facility at HKUST since the university's



## Organic Electronics Laboratory

OEL

The Organic Electronics Laboratory is a newly developed laboratory with space of 1,030 square meters and resides in Cheng Yu Tung Building. OEL is a brand new laboratory managed by Prof. Ching W. Tang, IAS Bank of East Asia Professor and Chair Professor in the Department of Electronic and Computer Engineering and a Research Team Leader of the SKL. Last year, a cluster tool has been newly installed. It comprises a central transfer chamber for substrate delivery and five detachable process chambers for device fabrication. OEL provides a platform for researchers to study how OLED materials degrade over time and to produce OLED devices with greater efficiency and longer lifetime.



## Nanoelectronics Fabrication Facility

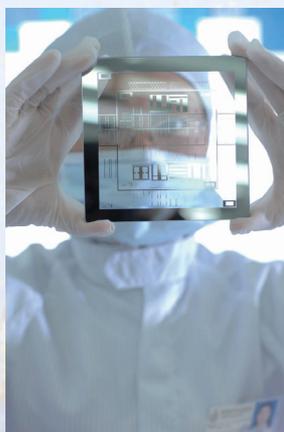
NFF

The Nanoelectronics Fabrication Facility (NFF) at HKUST is the first microfabrication laboratory at a tertiary institution in Hong Kong. The mission of the NFF is to provide facilities for HKUST faculty and students to conduct teaching

and research, particularly in new discrete semiconductor devices, novel microsensors and microactuators, advanced nanoelectronics process technology and application-specific integrated circuits (ASIC).



NFF



NFF





# Major Events & Milestones



# International Conferences & Seminars



<http://www.icfm.org.cn>

**International Conference on  
Frontier Materials 2022**

**国际前沿材料大会**

**Hybrid meeting: HKUST & Zoom  
May 28 - May 30, 2022**

**Novel Optoelectronic & Soft Electronic &  
Smart Sensing Materials and Devices (NSSMD)**

**Joint conference of ICFM symposiums C04 & C06**

**Venue: IAS Lecture Theater, HKUST  
Clear Water Bay, Kowloon, Hong Kong  
Date: May 28th, Saturday, 2022**

Supported by:

State Key Laboratory of Advanced Displays and Optoelectronic Technologies, HKUST  
Center on Smart Sensors and Environmental Technologies, HKUST



- ◆ 28-30 May 2022, International Conference on Frontier Materials (ICFM) successfully held via hybrid mode HKUST & Zoom



- ◆ **16-19 July 2022**  
**International Conference on Display Technology (ICDT)**

The International Conference on Display Technology (ICDT) is owned by Society for Information Display (SID). In 2022, ICDT attracted over 1,300 attendees, including 300 online attendees.



- ◆ **29 July 2022, The 1st Annual Workshop of Center on Smart Sensor and Environmental Technologies (CSSET) held in HKUST & Zoom**



# Visitors for Academic Exchange

## ▶ October 27, 2022 Visit from Huawei Technologies



## ■ January 17, 2023 Visit from Delegation of Shenzhen Science and Technology



January 19, 2023 Visit from Delegation of Suzhou Industrial



February 7, 2023  
Visit from Delegation of Jiangxia, Wuhan

February 23, 2023  
The President of Shenzhen University led delegation to visit



## Prof. Zhiyong FAN Awarded Xplorer Prize 2022



Prof. Zhiyong FAN was named an awardee of the Xplorer Prize 2022 (科学探索奖) in the field of advanced interdisciplinary studies. Supported by Tencent Foundation, the award encourages young scientists (aged 45 or below) in Mainland China, Hong Kong, and Macau to research unexplored

areas of basic sciences and frontier technologies. Prof. Fan is one of only two recipients from Hong Kong, among 50 awardees in 10 fields this year. Each awardee will receive RMB 3 million over a period of five years, which is among the highest in talent funding programs for young scientists in China.

Prof. Kei May LAU was selected as one of the 旭茉 JESSICA Most Successful Women in 2022



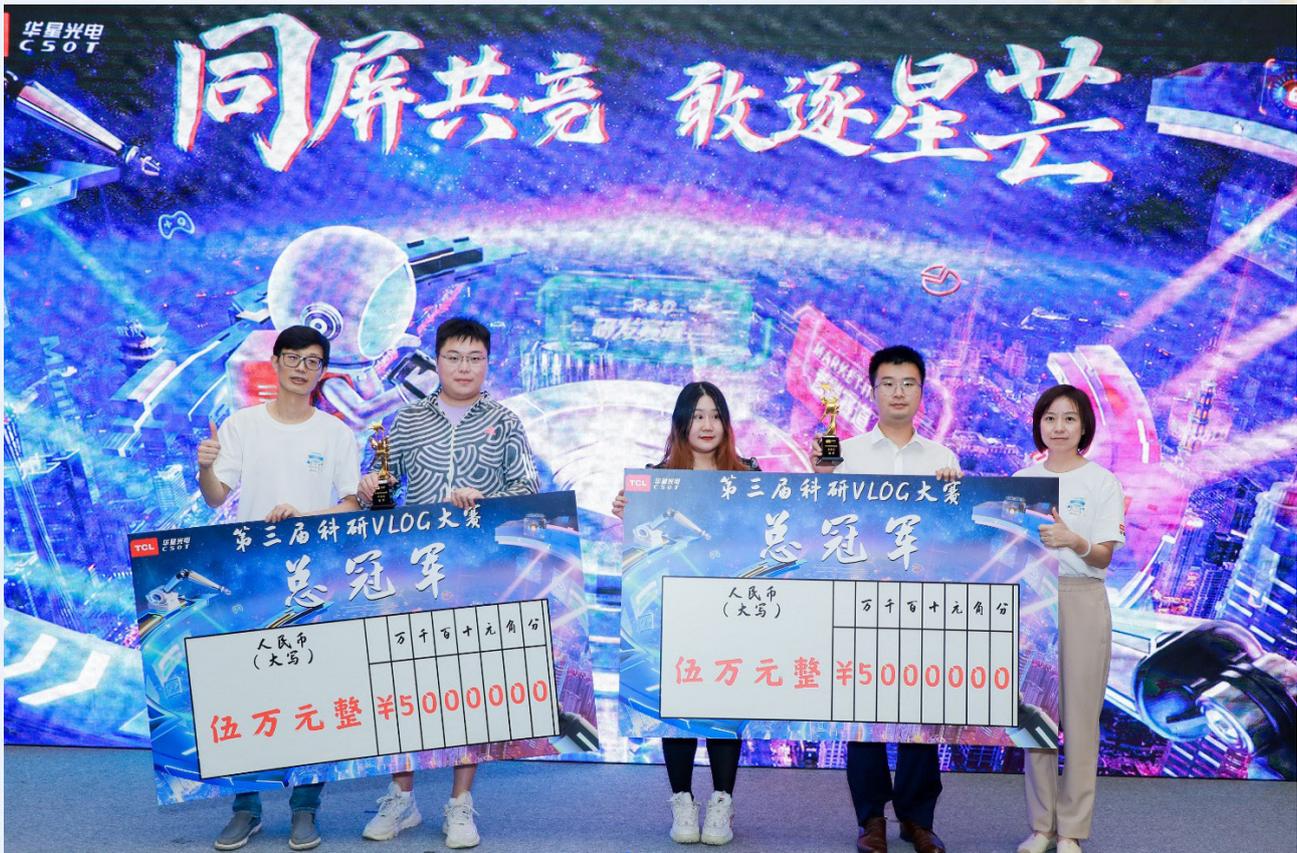
旭 茉 JESSICA is a monthly glossy magazine launched in 2000 in Hong Kong, aim-ing to serve the needs of the city’ s executive women in the new millennium. Its annual Most Successful Women Award honors women who have contributed to their respective industries, sectors, and the society of Hong Kong and

Greater China. Each nominated woman was evaluated by the jury, and finally stood out as an awardee. The award recognizes Prof. Lau’ s outstanding leadership, position, and presence, all of which have played an influential and significant role in our society.

**Prof. Abhishek SRIVASTAVA and Prof. Shao Qiming were awarded ECE Faculty Teaching Excellence Appreciation Awards 2021-22**



## A Research Team Led by Prof. Abhishek SRIVASTAVA Awarded Champion in the TCL Scientific Research Vlog Competition 2022



TCL organizes this competition every year and invites students working on displays to present their works. This year, the research team includes members Jianxin SONG (Hamilton), Zebing TCL LIAO (Leo) and Chengbin KANG (Eric), led by Prof. Abhishek SRIVASTAVA, had presented their research work on

polarized LED using quantum rods mini LED backlight from edge-lit to direct-lit display. The team was awarded Champion and received RMB50,000 cash prize. There were 463 research teams representing leading universities across the globe to compete the awards.

## PhD student Feng Feng wins Outstanding Student Paper Award at ICDT 2022



## PhD student Zhengnan Yuan received JSID's Outstanding Student Paper Award and JSID Cover of 2022



## 4th “Distinguished Master Accomplished Students” Mentorship Programme



## April 28 Graduates of 2022





**TEAM  
TALENTS**

**Research Team  
& Collaborations**

# International Exchange

## International Advisory Committee

The SKL has invited scholars of Advanced display and optoelectronics technologies from around the world to serve on the committee. Committee members participate in biannual meetings that aim to review and comment on the SKL's research progress.

Post	Name	Current Employment
Chairman	Prof. Stephen Forrest	Vice President for Research, University of Michigan
Members	Prof. S Y Yu	Professor Sun Yat Sen University
	Prof. Xiaolin Yan	Chief Technology Officer TCL Group
	Prof. Xiaowei Sun	Professor Southern University of Science and Technology of China
	Prof. Shin-Tson Wu	Pegasus Professor of Optics University of Central Florida
	Prof. Han-Ping D. Shieh	Emeritus Professor National Chiao-Tung University
	Prof. Yong-Seog Kim	Professor Hongik University, Seoul

## Visiting Scholars

The SKL regularly invites experts on display technology to pay short visits to HKUST. These experts are intended to complement and reinforce our research activities. Some of the visitors are self-funded. Some are supported by SKL. We also have regular visitors from our official collaborators: SYS University (Guangdong) and Fuzhou University. We have signed collaboration agreements with the following Universities:

1. Sun Yat Sen University
2. Fuzhou University
3. Belarusian State University of Informatics and Radioelectronics

Experts	Research Institution
Dr. Vashchenko Valerii	State Scientific Institution "Institute for Single Crystals" of National Academy of Sciences of Ukraine
Dr. Vashchenko Olena	State Scientific Institution "Institute for Single Crystals" of National Academy of Sciences of Ukraine
Dr. Oleksandr Semenenko	State Scientific Institution "Institute for Single Crystals" of National Academy of Sciences of Ukraine

# Technology Transfer

## Companies founded by SKL Members



### Hong Kong Innovative Display Technology Limited (i-Display)

i-Display is a diversified technology company focusing on improving people's lives through innovation in the areas of Display Technology, Consumer Electronics and Retail Technology by providing novel display products, consumer electronics and retail technology solutions. The products can be produced in conventional factories and is relatively affordable and durable.



### Shenzhen NED Optics Co., Ltd

NED Optics was established in January, 2015. It was founded by Huajun Peng, who received his PhD in flat panel display and optoelectronics in HKUST. They have profounded technology accumulation in information display and visual imaging optics, and focus on AR/VR/MR headsets.



### Hangzhou ToupTek Photonics Co., Ltd

ToupTek was founded in 2010. For years, ToupTek dedicated all effort to provide the best cameras and services to our customers. By now, ToupTek has the most complete product portfolio, including USB2.0 camera, USB3.0 camera, HDMI camera and WI-FI camera.



### Shenzhen Sitan Technology Co., Ltd

SiTan is a leading information display company. SiTan was founded in 2018 by Dr. Chengfeng Qiu, Dr. Xiaowei Sun, and Dr. Zhaojun Liu. The target of SiTan is to realize mass production of semiconductor displays and provide total solution for mobile displays, AR/VR, and large screens.



### LiPHY Communications Limited

LiPHY Communications is a system solution provider for indoor positioning and interactive LED-based advertisement signage using its proprietary visible light communication (VLC) technology combined with Bluetooth Low Energy (BLE).

## Industrial Collaborators

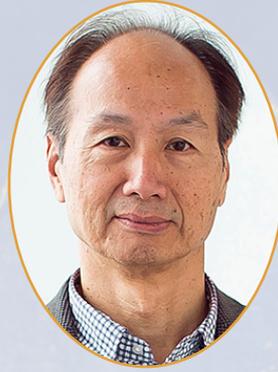
The SKL collaborated with the following enterprises in 2022:

- Altizure 
- ASTRI 
- AUO 
- Chung Nam Watch 
- Shenzhen Dalton 
- Elec & Eltek 
- Integrated Circuit Design Center 
- In-Tech Electronics Ltd 
- Solomon Systech Ltd 
- Tinwell Technology Ltd
- K&P Electronics Ltd 
- Truly 
- Varitronix Ltd 

# Research Team



**Prof. Man Wong**  
Director



**Prof. Hoi-Sing Kwok**  
Executive Director



**Prof. Ching W. Tang**  
Former Director

## Faculty Members

- Prof. Zhiyong Fan
- Prof. Hnin Yin Yin Nyein
- Prof. Yen Hung Lin
- Prof. Andrew Poon
- Prof. Chi Ying Tsui
- Prof. V. G. Chigrinov
- Prof. Kam Sing Wong
- Prof. Ken Tseng
- Prof. Abhishek Srivastava
- Prof. Jonathan Halpert
- Prof. Man Hoi WONG
- Prof. Mansun Chan
- Prof. Jie Yuan
- Prof. Che Ting Chan
- Prof. Ricky Lee
- Prof. Shoucheng Dong
- Prof. Patrick Yue
- Prof. Long Quan
- Prof. Kei May Lau
- Prof. Kevin Chen
- Prof. Ping Sheng
- Prof. Zhaojun Liu
- Prof. Shihe Yan
- Prof. Zhihe Xia

## Research Staff

- Mr. KM Fung
- Dr. Vincent Chen
- Dr. Lei Lu
- Dr. Wanlong Zhang
- Dr. Sunbin Deng
- Dr. Zhibo Sun
- Mr Addison Cheung
- Mr. Howard Chiu
- Mr. Hoi Chun Chan
- Miss Denise Tong
- Dr. Fion Yeung
- Dr. Guijun Li
- Dr. Jingwen Yao
- Dr. Sisi Wang
- Dr. Bryan Tam
- Dr. Zhengnan Yuan
- Miss Rita Ting
- Mr. Ka Wah Chan
- Mr. Pengcheng Liu
- Mr. Jacob Ho
- Dr. Thomas Tang
- Dr. Wei Zhong
- Dr. Xianda Zhou
- Dr. Wei Zhong
- Mr. Alex Cheung
- Mr. Terence Cho
- Mr. Jiye Yang
- Ms Yiyang Wang

## Students

### Ph.D. Candidates:

- ◆ Mr. Dunhang Quan
- ◆ Mr. Chengbin Kang
- ◆ Mr. Yushen Wu
- ◆ Mr. Yuqi Wang
- ◆ Mr. Cong Liu
- ◆ Mr. Xiyi Yu
- ◆ Mr. Prutha Nagaraja
- ◆ Ms. Ke Zahang
- ◆ Mr. Dequan Lin
- ◆ Mr. Feng Feng
- ◆ Mr. Weijiang
- ◆ Mr. Anran Li
- ◆ Mr. Zebin Liao
- ◆ Ms. Humengyuan Zhang
- ◆ Mr. Zhichao Zhou
- ◆ Mr. Runxiao Shi
- ◆ Mr. Guohong Xiang
- ◆ Ms. Xinying Xie
- ◆ Ms. Ming Cheng
- ◆ Mr. Mallem Kumar
- ◆ Ms. Zichun Li
- ◆ Mr. Xuchi Liu
- ◆ Mr. Yibo Lliu
- ◆ Ms. Yiyang Gao
- ◆ Ms. Tengteng Lei
- ◆ Mr. Jinxin Song

### M. Phil Students

- ◆ Mr. Kaiqi Chen
- ◆ Ms. Yuechu Chen
- ◆ Bibarys Mnaidar



## Contact Us

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