

ISA - EPIC/PIDA Online Technology Meeting on Mini/Micro LED

March 25th, 2021

Time: 16:00-19:00 (Beijing Time) (25 March 9:00 - 12:00 CET)

online events @ Zoom platform

link: <https://us02web.zoom.us/j/81348588620?pwd=dUNUeEZBWxzJS05yL3VCR0FVNDg2UT09>

Meeting ID: 813 4858 8620 Password: 029869

Simultaneous interpretation will be provided

Micro-LED will bring interruptive changes to many fields such as wearable/implantable optoelectronic devices, light communication/light interconnection, medical treatment, smart car lights, spatial imaging and so on, and become the mainstream product of the next generation of information display. In recent years, various research and development around Mini /Micro-LED manufacturing and application has been vigorously carried out, and a number of technical issues have been tackled continuously. Related applications in the fields of display, light-based data communication technology, biology and medical treatment have been gradually developed. ISA established the Micro-LED Committee in 2020, aiming promote innovation, exchange research and development results, promote the connection between upstream and downstream of this industry, wider rollout the latest applications, and contribute to form a global Mini / Micro-LED industrial chain as well as to foster a good industrial eco-system.

In order to strengthen the cooperation between China and Europe in Mini /Micro-LED manufacturing, learn from each other, exchange innovation results, promote complementary industrial advantages and seek business opportunities, ISA and EPIC will jointly hold the Mini /Micro-LED Industry Development (Online) Seminar. Experts from well-known companies in China and Europe will be invited to discuss practical technical issues and share their solutions in Mini/Micro-LED manufacturing and application.

The huge development potential and broad market of Mini/Micro-LED are attracting the interests of more industries and crossover applications. And more high value-added market segments are being explored and formed. I sincerely hope that more people will work together to advance this process.

Thank you for your support and contribution and I look forward to virtually meeting you on the 25th March.

Professor Qun YAN
Chairman of ISA Micro-LED Committee
Secretary General of SID (Society for Information Display)



About ISA

ISA is an international not-for-profit NGO, registered in Hong Kong, aiming to promote the sustainable development and application of Solid State Lighting (SSL) worldwide. ISA currently has 76 members with more than 4,000 associated members, representing 70% of the output of global SSL industry. ISA members consist of almost all the major players of the global SSL community, including leading industry, academic and application entities, such as Signify, Osram, Panasonic, Cree, Samsung, MLS, Epistar, San'an, Sansi, Unilumin, Aixtron, DISCO, etc.

About EPIC

EPIC is the world-leading industry association that promotes the sustainable development of organizations working in the field of photonics in Europe. EPIC fosters a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement. EPIC publishes market and technology reports, organizes technical workshops and B2B roundtables, supports EU funding proposals, advocacy and lobbying, education and training activities, standards and roadmaps, pavilions at exhibitions. www.epic-assoc.com

<p style="text-align: center;">Agenda of</p> <p style="text-align: center;">ISA - EPIC/PIDA Online Technology Meeting on Mini/Micro LED</p> <p style="text-align: center;">Zoom (March 25th, 2021) (Beijing Time)</p>	
Moderator	<p>Prof. Qun (Frank) Yan <i>Chairman of ISA Micro-LED Committee</i> <i>Secretary General of SID (Society for Information Display)</i></p> <p>Dr. Jose Pozo <i>CTO of EPIC (European Photonics Industry Consortium)</i></p>
16:00-16:05	<p>Welcome Address Prof. Qun (Frank) Yan <i>Chairman of ISA Micro-LED Committee</i> <i>Secretary General of SID (Society for Information Display)</i></p>
16:05-16:10	<p>Welcome Address Mr. Carlos Lee <i>Director General of EPIC</i></p>
16:10-16:25	<p>"The large screen display technology and Application of Am on Glass fine pitch Mini LED" Mr. Juncheng XIAO <i>Director of Technical Development, TCL China Star Optoelectronics Technology Co., Ltd., TCL CSOT</i></p>
16:25-16:30	Q/A
16:30-16:45	<p>"Forming microLEDs using micro transfer printing" Mr. Alexandre Chikhaoui <i>Business Development Director, X-Celeprint</i></p>
16:45-16:50	Q/A
16:50-16:55	<p>"Introduction of Taiwan Mini/Micro LED" Mr. Kenneth Tai <i>Chairman of PIDA Association</i></p>
16:55-17:10	<p>"MicroLED 2.0 - From display to heterogeneous micro-assembly system" Mr. Chia-Hsin Chao <i>Manager of Electronic and Optoelectronic System Research Laboratory, ITRI</i></p>
17:10-17:15	Q/A

17:15-17:30	<p>“The challenges facing the future development of Micro LED/ Mimi LED” Mr. Ke WANG <i>Director of Research Centre, BOE</i></p>
17:30-17:35	Q/A
17:35-17:50	<p>“Development of Micro LED Display and Future Opportunities” Mr. Falcon Liu <i>Marketing Director, Play Nitride</i></p>
17:50-17:55	Q/A
17:55-18:10	<p>“The opportunity and challenges of Micro LED Display for automotive application” Mr. Yuan DING <i>Director of R&D of Tian’ma Micro-electronics Co.</i></p>
18:10-18:15	Q/A
18:15-18:30	<p>“The latest challenges and possible solutions for Micro LED mass inspection” Mr. I-Jan Chen <i>Chairman/COO, Southport</i></p>
18:30-18:35	Q/A
18:35-18:50	<p>“Passivation of compound semiconductors – key enabler for high efficiency μLED devices” Dr. Jouko Lång <i>CTO, Founder, Comptek Solutions Ltd</i></p>
18:50-18:55	Q/A
18:55-19:00	Summary
19:00	Adjourn

Information of the Speakers



Qun (Frank) Yan, Ph.D.
Professor, Fuzhou University
SA Micro-LED Committee Chair
Secretary, SID
Director, SID Beijing Chapter
CEO, SID China

Moderator

Welcome and introduction

Short Bio:

Dr. Qun (Frank) Yan, a National Distinguished Expert, has established well-known reputation as an authoritative scholar and R&D scientist in the international display industry. Society for Information Display (SID) is the most authoritative technical organization of display industry. He is SID Fellow, SID Executive Committee member and Secretary of SID, CEO of SID China, Director of SID Beijing Chapter, and Chair of SID Display Technology Training School Committee. Due to his outstanding contributions to display technology, he won SID Special Recognition Award in 2013 and SID Fellow Award in 2017. He was the chief scientist for Changhong Electric Group and the chief research scientist at Panasonic Plasma Display Laboratory of America Inc. He has over 40 journal publications, 28 conference presentations, and over 20 display technology related patents in his professional career. He currently is full time professor at Fuzhou University at Fujian province in China, and he is also holding joint professorship at Xi'an Jiaotong University, and Southeast University. At present, he is dedicated to the research and development of highly integrated semiconductor information display (HISID) and interactive rich media area based on Micro-LED technology.



Mr. Jose Pozo
CTO
EPIC (European Photonics Industry Consortium)

Moderator

Short Bio:

Dr. José Pozo is Director of Technology and Innovation at EPIC (European Photonics Industry Consortium). As EPIC's CTO, he represents 650+ companies active in the field of Photonics. His job consists on actively engaging with them and provide them with tools to strengthen their position in the supply chain; such tools are the organization of technology workshops, provision of market intelligence and finding B2B leads. He has the vision that the future of optoelectronic manufacturing can take place in Europe to a large extent, and as part of that vision he is actively involved in the EU-funded pilot lines. He has 20 years' background in photonics technology, market knowledge, and a large network within the industrial and academic photonics landscape. Dr. Pozo holds a Ph.D. in electrical engineering from the University of Bristol, U.K., and a M.Sc. and B.Eng. in telecom engineering from UPNA (Spain) / VUB (Belgium). In addition, Dr. Jose Pozo has worked as post-doctoral researcher at the Eindhoven University of Technology (The Netherlands), EU proposal coordinator at TNO (The Netherlands), and Sr. Photonics Technology Consultant at PNO Consultants.

Speaker 1



Mr. Juncheng XIAO
Director Of Technical Development, TCL
China Star Optoelectronics Technology
Co., Ltd., TCL CSOT



Subject: The large screen display technology and Application of Am on Glass fine pitch Mini LED

With the increasing market demand for high resolution large screen display, CSOT actively deployed the AM on Glass fine pitch Mini LED technology. The technology strategy is carried out from four directions: Picture quality improvement, Appearance innovation, Capacity improvement and Energy conservation and emission reduction. The picture quality of display is comprehensively improved from drive compensation, optical algorithm compensation, led mixed bin and other technologies; seamless splicing technology is developed to realize Mini LED display appearance innovation; innovation and transfer technology of LED chip can improve production efficiency; and the improvement of LED light efficiency and device performance can achieve energy saving and emission reduction.

Juncheng Xiao, Technical Director of TCL CSOT. He has been working on the semiconductor display field since graduated from Harbin Institute of Technology in 2012 (Master Degree), and now is in charge of developing product and technology in TCL CSOT. He is proficient in novel product research of Mobile, Notebook, Monitor and TV: He developed a series of original display technologies, including the first GOA TV product in CSOT, the world's first products of LTPS 9 mask, IGZO 4 mask 8K 1G1D, 75 8k glass-based AM MLED screen and 142-inch IGZO fine-pitch MLED ultra-large display screen. He won the second prize of Hubei Province Science and Technology Progress (Ranked # 2).

Speaker 2

Subject

Forming Micro LEDs with Micro Transfer Printing Technology

Micro Transfer Printing extends Moore's Law beyond monolithic integration to true 3D Heterogeneous Integration. Very thin chips (also called X-Chips) are micro transfer printed from their source wafer to another substrate



Mr. Alexandre Chikhaoui
Business Development Director
X-Celeprint



and interconnected to form complete electronic systems, extremely thin with small form factors. Some systems can be comprised of light emitting components like micro-LEDs, coupled with their active driver and be used as an active pixel into a display, but not only ...

Short Bio

Business Development Director

joined X-Celeprint In 2015 and runs overall business development to enable the adoption of micro transfer printing technology. Over 20 years of experience in the semiconductor industry, at STMicroelectronics, then at Dialog Semiconductor, Alexandre defined, developed and marketed power management integrated circuits for mobile phone platforms, LED drivers, as well as display drivers for low power display technologies like Electrowetting, E-ink, Mems and OLED displays. Holds a Master/Engineering degree in Microelectronics Analog Design since 1998.

Speaker 3



Mr. Ke WANG

Director of Research Centre

Subject

Subject: The challenges facing the future development of Micro LED/ Mini LED

In recent years, as next generation display technology, Micro/Mini LED technology turn into the hottest tech. Panel makers, LED chip makers, LED encapsulation companies and so many newly established companies concentrate on it. But there are still challenges during the development of Micro/Mini LED, such as mass transfer, efficiency of LEDs, LED driving method and integration with substrate, cost and so on.



Short Bio

Ke Wang, technical expert of BOE. He has been working on semiconductor display technology R&D since graduated from Jilin University in 2007(Master Degree) and he was in charge of many oxide semiconductor tech development projects. Now he is focusing on Mini/Micro LED R&D, he has developed Mini LED B/L of glass substrate, and he is also in charge of the development of "0" gap splicing method at the same time.

Speaker 4



Dr. Jouko Lång
CTO, Founder
Comptek Solutions Ltd



Subject

Passivation of compound semiconductors – key enabler for high efficiency μ LED devices
Despite the unprecedented theoretical performance of μ LEDs compared to LCD and OLED for instance, the μ LED devices still suffer from poor efficiency and performance especially at small chip sizes and at low current densities, making the practical implementation challenging.

Due to high surface-to-volume ratio of the small μ LED emitters, the defect related non-radiative recombination phenomenon at the chip sidewalls has substantial contribution to the quantum efficiency when the pixel size is decreased, and thus efficient passivation methods are needed.

Comptek Solutions is a forerunner in III-V compound semiconductor passivation technologies and has developed state of the art processes applicable to μ LED devices, enabling the required performance for the next-generation μ LED applications.

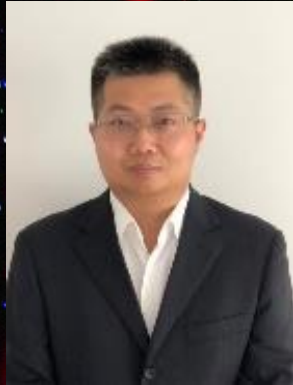
Short Bio

Dr. Jouko Lång is CTO and co-founder of Comptek Solutions and one of the inventors of its core Kontrox™ passivation technology. Lång obtained his doctoral degree in 2013 at the University of Turku, Finland from the field of surface/interface engineering of compound semiconductors for improved devices. After his PhD, Lång worked several years as a Principal Engineer at Nokia and Microsoft, developing new technologies for displays and touch sensors before co-founding Comptek Solutions in 2017. Dr. Lång has authored or co-authored +30 publications and +10 patents from the field of semiconductor and display technologies.

Currently he is leading the μ LED related technology development activities at Comptek which

has led Comptek of being selected as one of the 44 world top science- based spinoff companies and one of the only two from the semiconductor industry, in the inaugural Spinoff Prize competition organized by the prestigious Nature Research and Merck KGaA.

Speaker 5



Mr. DING Yuan

Director of R&D of Tianma
Micro-electronics Co.



Subject: The opportunity and challenges of
Micro-LED Display for automotive application

Micro-LED display, due to its almost perfect display characteristics, is likely to be the next-generation display technology after LCD and OLED. What's more, for the reason of its high performance, high reliability and high cost, the automotive field may be a breakthrough for AM-micro LED display technology. Tianma now is actively developing relevant technology; this report will introduce its progresses and challenges.

Short Bio

Graduated from Shanghai Jiaotong University with M.S. in physics, now is Director of Advanced Technology of Research Institute, Tianma Micro-electronics. Previously served in SVA-NEC and BOE Hefei, and has much experience in display industry, with outstanding results in products development, ranging from large-sized to small-sized products, such as TV, monitor, notebook, tablet, phone and wearable devices etc. Mr. Ding is in charge of the development of advanced display and interactive technologies, including uLED/mini-LED display, flexible/foldable OLED display, HTD (Hybrid TFT Display) technology, Force touch technology and 3D display technology etc.