THE METAVERSE AND THE DISPLAY INDUSTRY

Cautionary Note Regarding
Forward Looking Statements

This presentation contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and Private Securities Litigation Reform Act, as amended, including those relating to the Company's product development, market opportunity, competitive position, possible or assumed future results of operations, business strategies, potential growth opportunities and other statements that are predictive in nature. These forward-looking statements are based on current expectations, estimates, forecasts and projections about the industry and markets in which we operate and management's current beliefs and assumptions.

These statements may be identified by the use of forward-looking expressions, including, but not limited to, "expect," "anticipate," "believe," "estimate," "potential," "predict," "project," "should," "would," and similar expressions and the negatives of those terms. These statements relate to future events or our financial performance and involve known and unknown risks, uncertainties, and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include those set forth in the Company's filings with the Securities and Exchange Commission. Prospective investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this presentation. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise.

Reshaping the World of Electronics | OTCQB: SMTK

Disruptive TRUFLEX® Technology

A revolutionary semiconductor platform for Organic Thin Film Transistors (OTFTs).

TRUFLEX® is a full transistor stack design and process platform that produces transistors that are flexible, bendable, wearable, and lightweight.

Materials are solution deposited on low-cost plastic and glass at a low temperature (80°C) to make transistor circuits with performance significantly beyond amorphous Silicon (aSi).

TRUFLEX® materials are compatible with existing industry standard manufacturing infrastructure and next generation printing processes.

Monolithic display for AR & VR headsets.

The platform can be used in several applications including AMOLED displays, Quantum Dot displays, mini / microLED displays, and integrated logic circuits.

World Class Technology Team

48 full time employees with 200+ combined years industrial and R&D pedigree at ICI, Merck, Philips, Kodak, CDT, Motorola.

Extensive, Broad and Defendable IP Portfolio

>175 patents across 17 patent families – 125 granted and ~50 pending

40 codified trade secrets

Collaborations

2021 - JDA with RiTdisplay for the production of a full color demonstration AMOLED display.

2022 – JDA with Nanosys for new generation solution printed microLED and quantum dot materials for advanced displays.

2022 – Additional JDA for the development of a new generation of miniLEDs signage

Design & Prototyping Capability

Material supply scaled up at toll manufacturers.

EDA design tools available to enable customers to synthesize circuits.

Prototyping available on 4in, 8in, 12in and Gen 2 processes.

Monolithic display for AR & VR headsets.

Investor Confidence

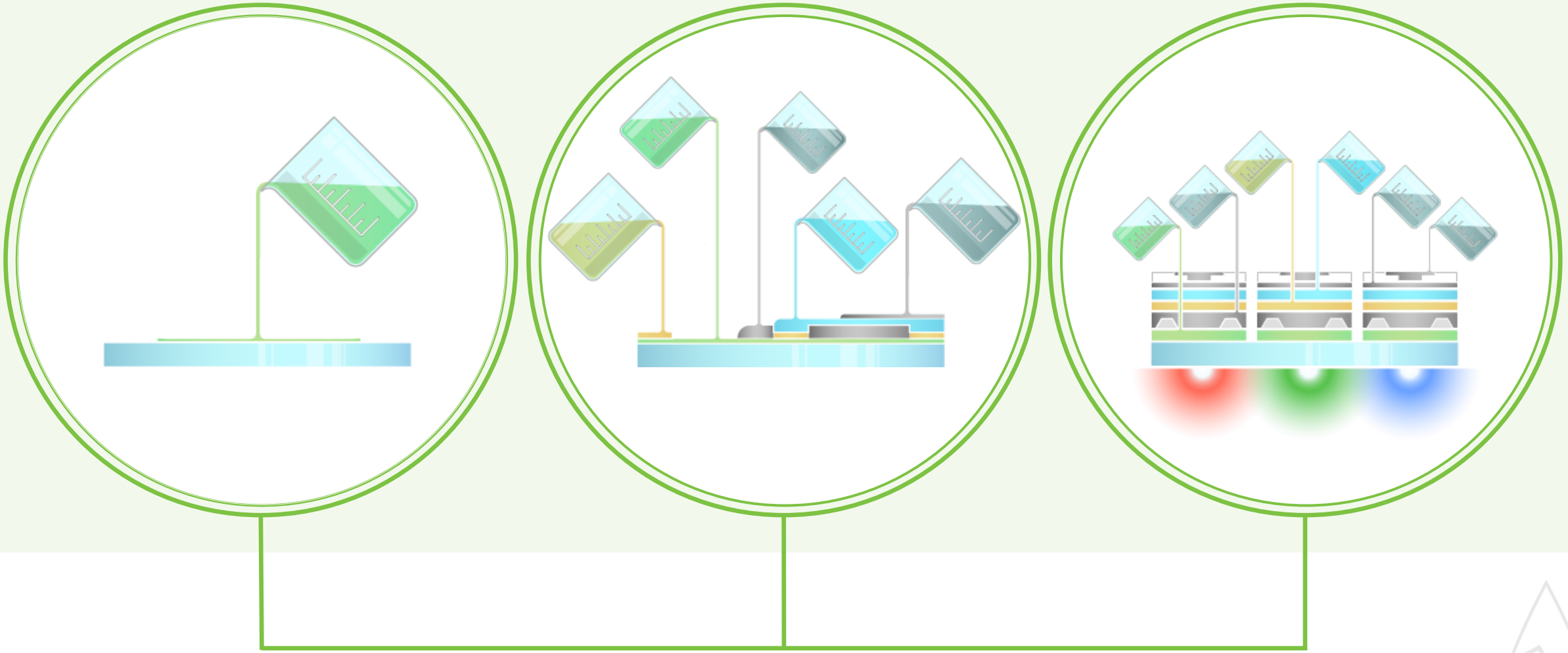
Funding History

In February 2021, SmartKem raised $24.6 million in gross proceeds through a private placement of common stock-only at $2.00 per share.

To date, over $60 million has been invested in SmartKem.

Institutional investors include AIGH, Octopus Ventures, Entrepreneurs Fund LP, and BASF Ventures.

SmartKem's TRUFLEX® Semiconductor Platform



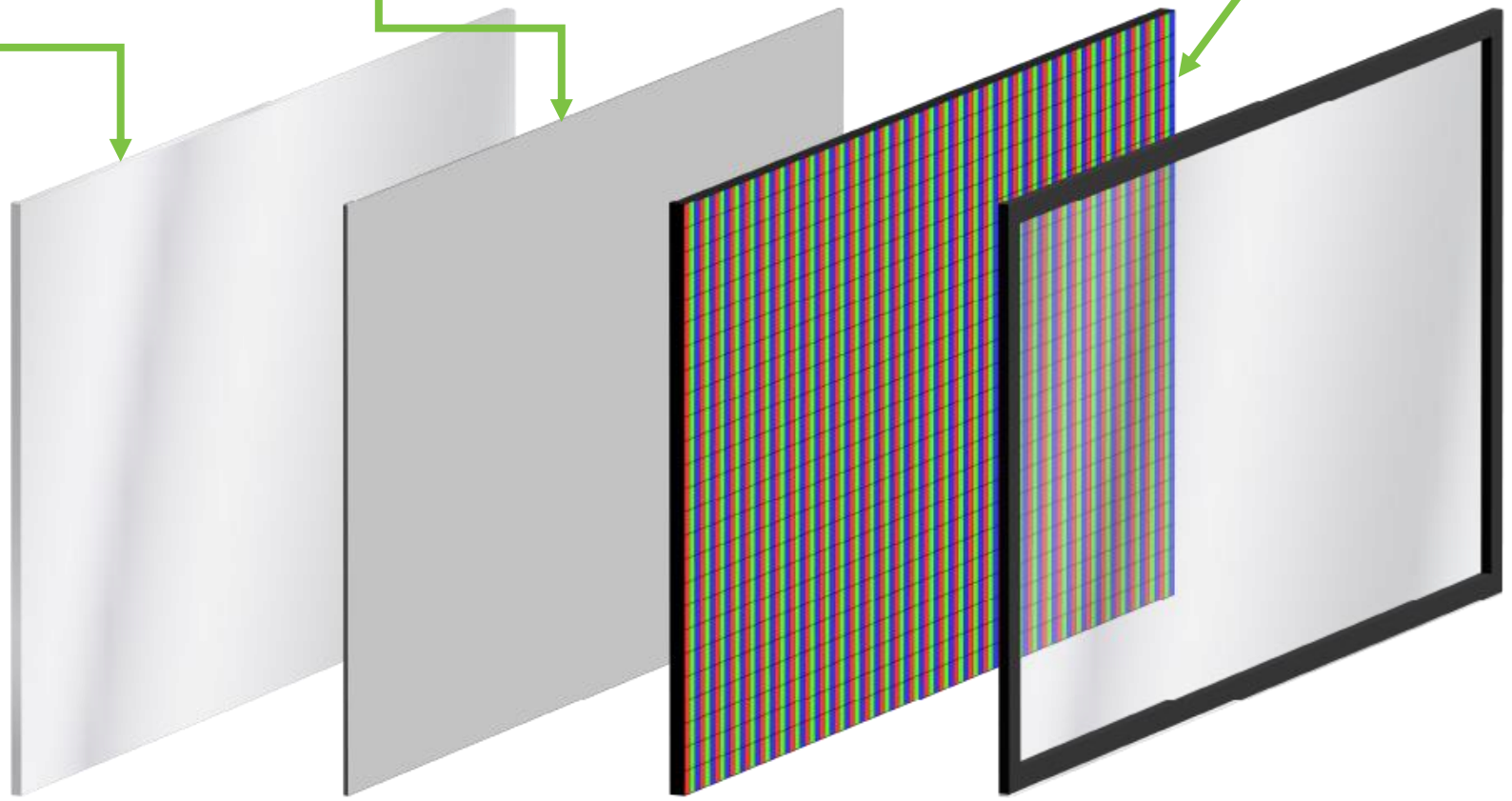
What is a Display?

It Depends!

But they all have two things in common

Backplane:
Substrate & Passive / Active
Transistor Array

Frontplane:
Electro Optic Conversion



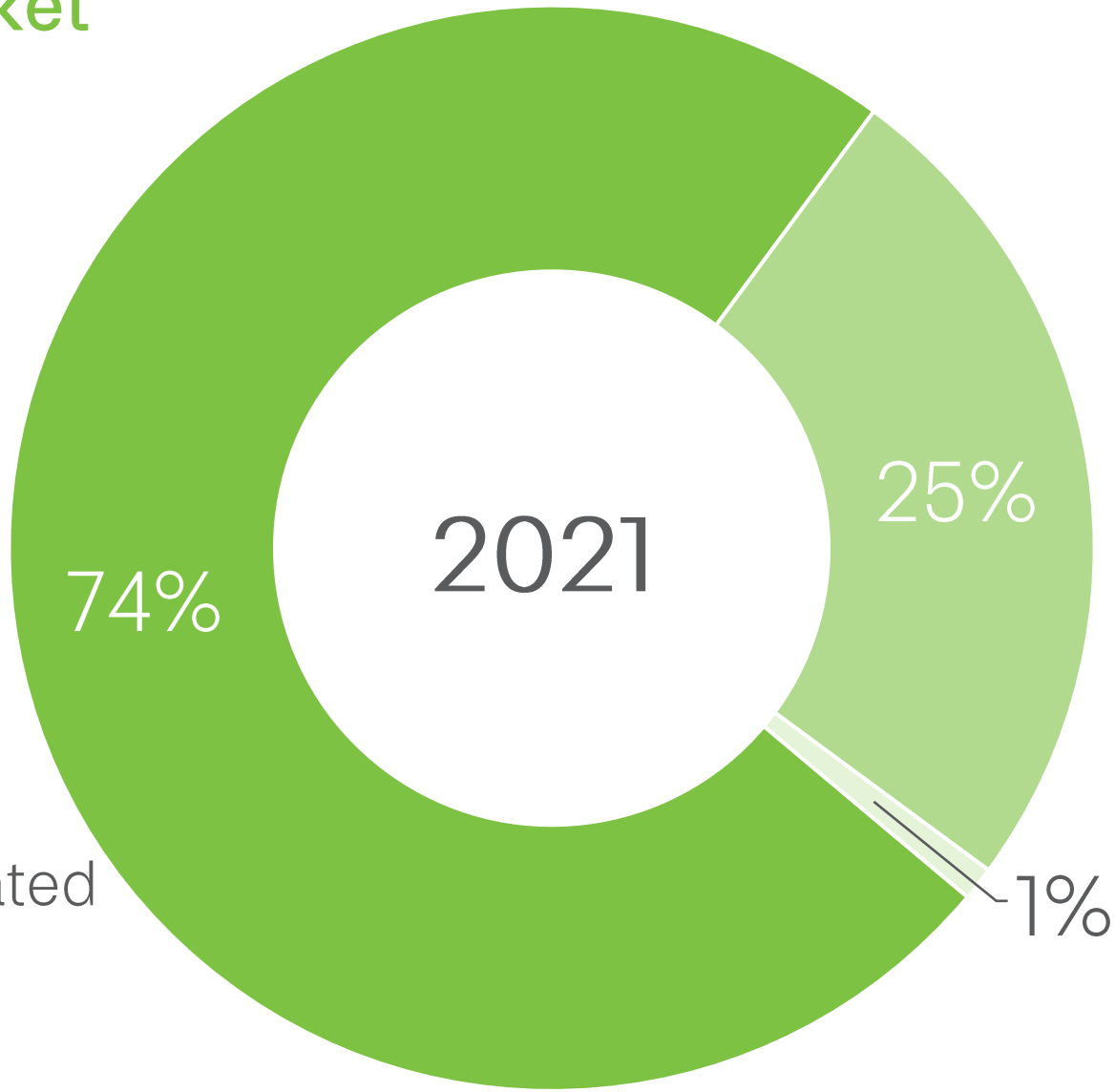
Glass OR Plastic

TFT: IGZO, LTPS,
a-Si, PCBs

OLED, QD, LED

Screen

The Display Market



LCD
$122.8B

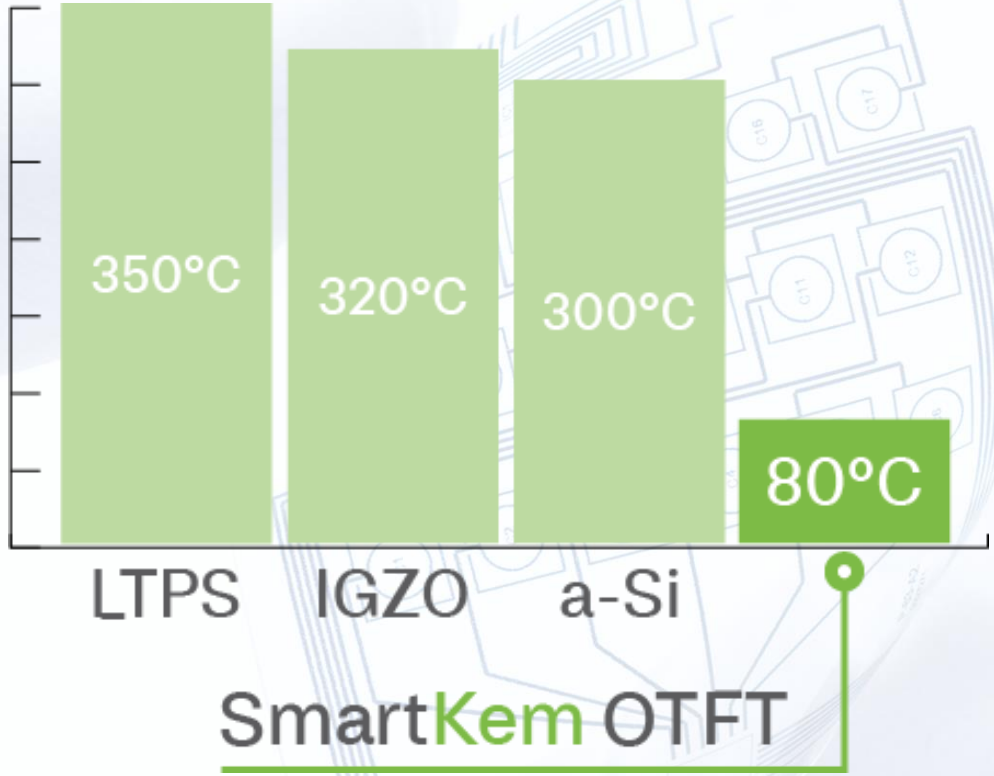
OLED
$41.6B

Other Tech
≈$1.66B

Market share is dominated by lowest cost of manufacturing infrastructure.

Today, there is no display solution available (large or small), at a low enough cost, to enable the ubiquitous adoption of the metaverse

What is needed?



Solution-coated (Printable) **frontplanes**, OLED and EQD

+

A manufacturing process compatible with amorphous silicon infrastructure with higher performance

+

Low temperature processing that enables **backplanes** that are solution-coated on low cost substrates

Market Entry Strategy

1
TRUFLEX®
Organic
Inks

Material Sales

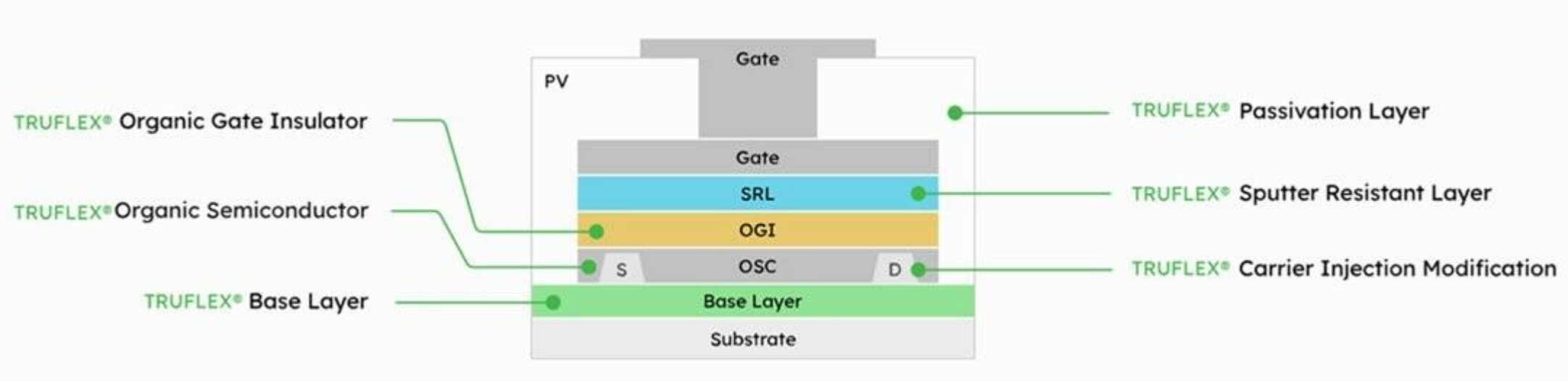
2
TRUFLEX®
Design
Tools

Software Sales

3
TRUFLEX®
Foundry
Services

Prototype sales, product sales and joint development agreements

1. SmartKem's TRUFLEX® Materials



Ease of Technology Transfer

Chemistry, process and stack owned

Solution processed At 80C

Formed on low-cost glass & plastic

Drop in technology for today's fab lines

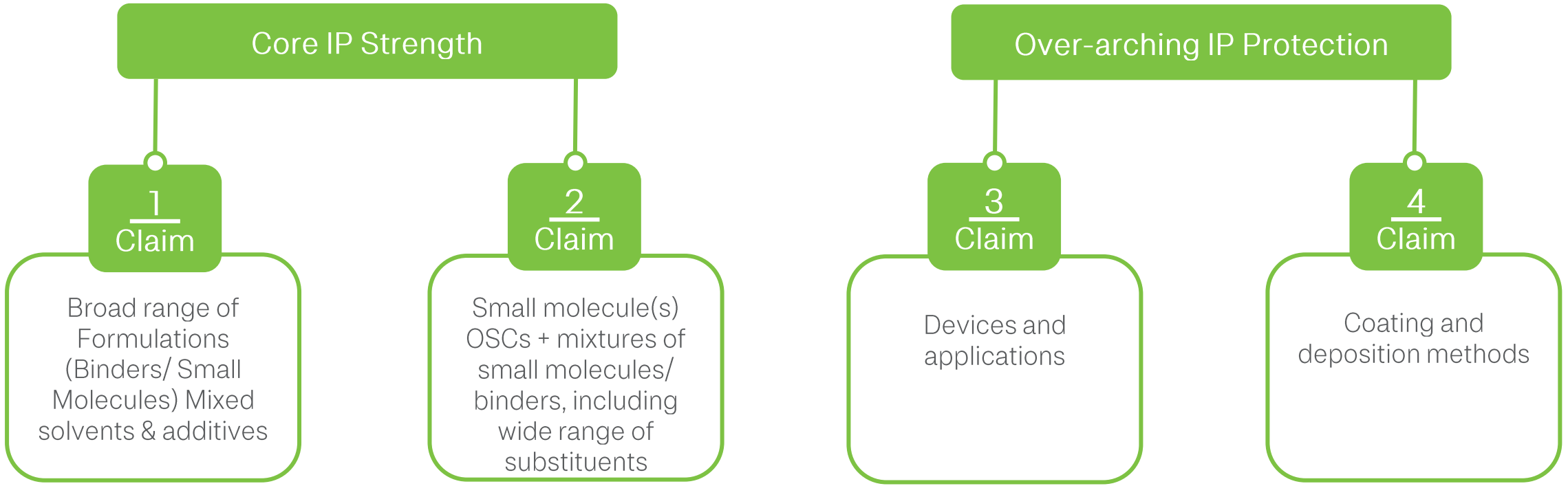
(and ready for next gen printing)

World leading electronic performance

Meets industry critical test standards

Outperforms market leader a-Si

Materials: Outstanding IP and Know-How



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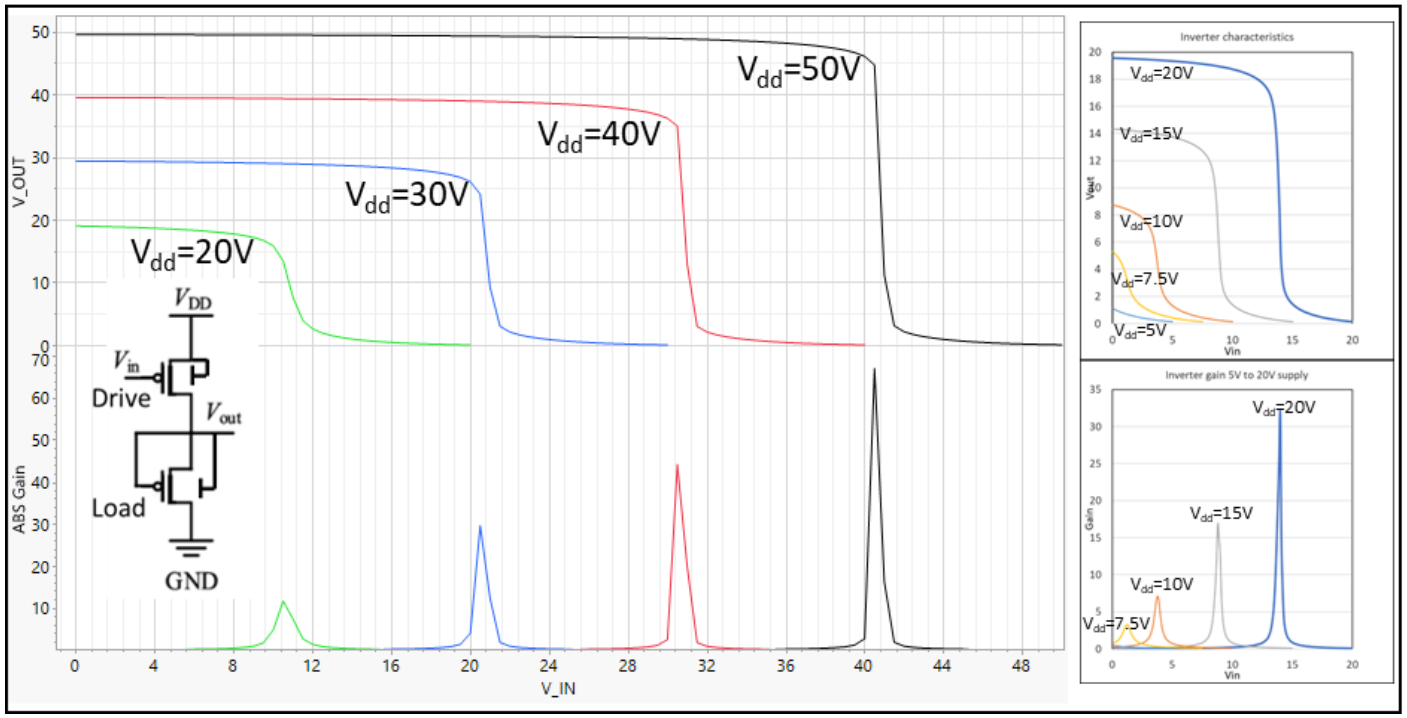
- 40 codified company trade secrets files and increasing…
- Strong Freedom To Operate position and no 3rd party licenses required

2. Electronic Design Tools

SmartKem is granting licence free access to its design tools to seed the market.



Cadence

Cadence scripting complete for single gate OTFT, circuits can be designed within the Cadence EDA system

Dual gate OTFT logic capable of operating at voltages <7.5V with high noise margin and gain

3. TRUFLEX® Foundry Services
Prototyping Sales & JDAs

Digital Lithography

Access to tool set at Centre for Process Engineering (CPI) in North-East of UK.

4in, 8in, 12in and Gen2 capability.

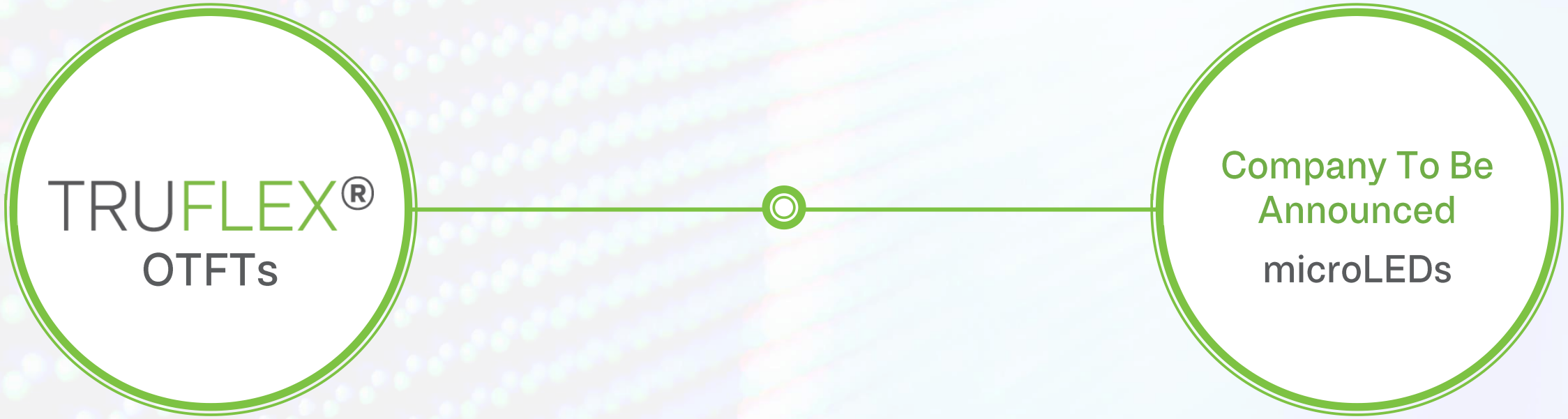
Using digital lithography for full-custom circuits – sheet to sheet initially and then roll-to-roll in the future.

Joint Development Agreement: RiTdisplay

Based in Taiwan RiTdisplay is a leading developer of optoelectronic solutions, visual displays and passive matrix OLED displays. This collaboration seeks to produce a full colour demonstration AMOLED display.

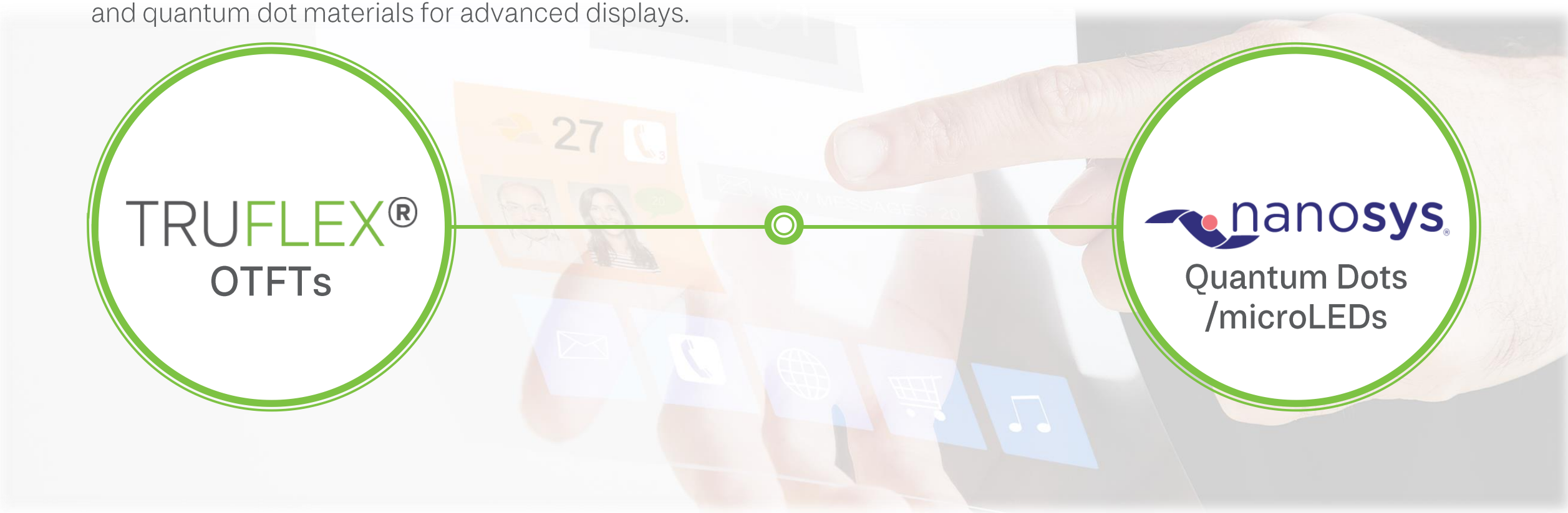
Joint Development Agreement: A. N. Other

Taiwan-based company is a leading manufacturer in the global LED industry. This collaboration is expected to lead to the development of a roll-to-roll process for the manufacture of large format LED displays, a means of significantly reducing their cost of production.



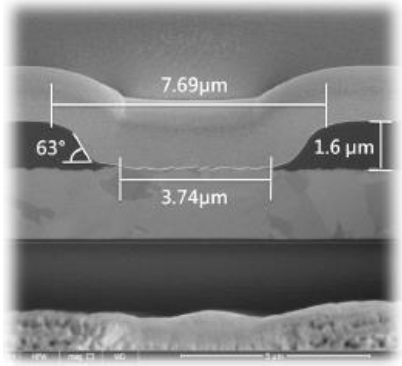
Joint Development Agreement: Nanosys

Silicon Valley-based Nanosys is the leader in developing and delivering quantum dot and microLED technology to the display industry. This collaboration seeks to produce a new generation of low-cost solution printed microLED and quantum dot materials for advanced displays.

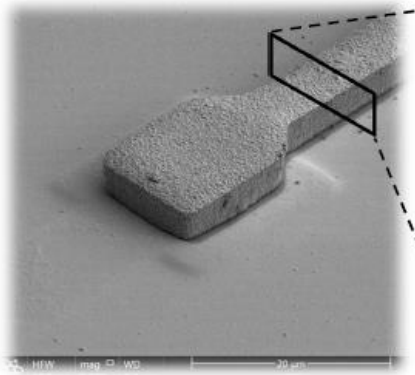


Materials: High Performance Computer Chip Interconnect

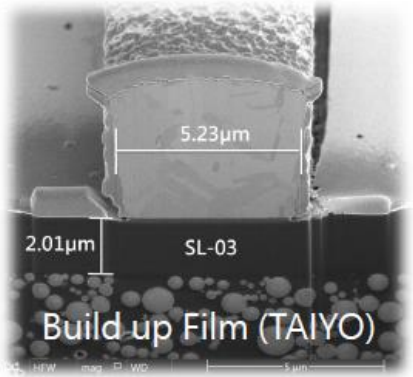
High resolution/Low-Cure/Fast throughput TRUFLEX® material to address $4.99b GHC market @2027 (CAGR 6.7%)



Via size of SL03 by DLT



Top-view : Trace on SL03



X' view of Trace on SL03

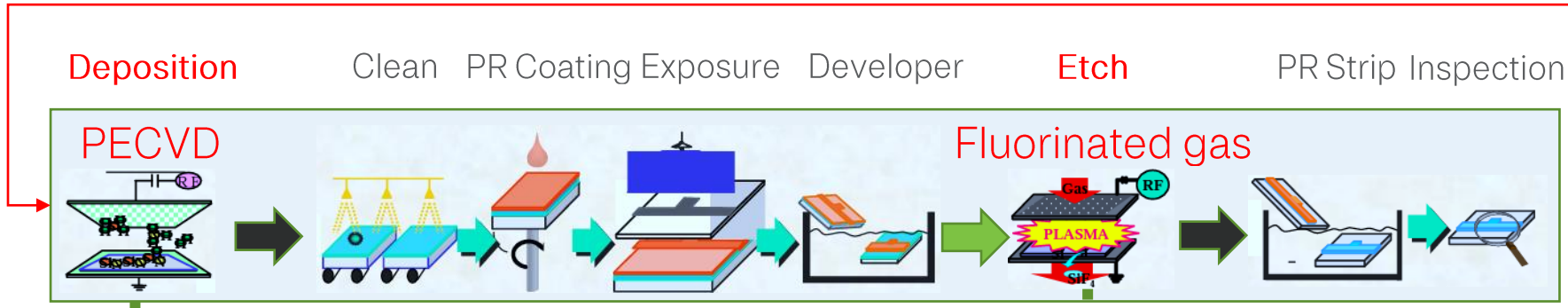
Items	This Tech.	Competitor
Photo Image Dielectric (PID) Type	Wet film (SL03)	Wet film (PSPI)
Dielectric Curing Temp.	150 °C	200 °C
PID Resolution	3.7 μm	5 μm
Exposure Dose	10 mJ/cm^2	> 200 mJ/cm^2

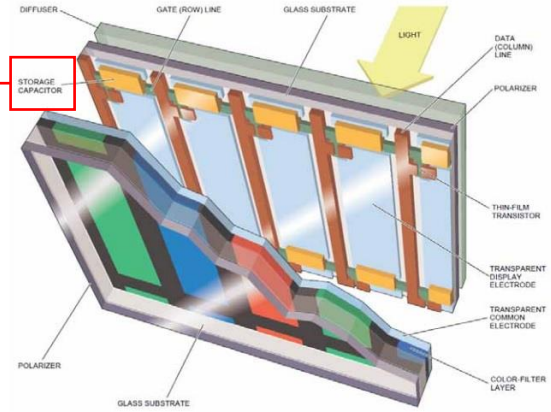
*H-Line compatible & Ultra-Low Exposure Dose

Materials: Eco-Friendly Silicon Nitride Replacement

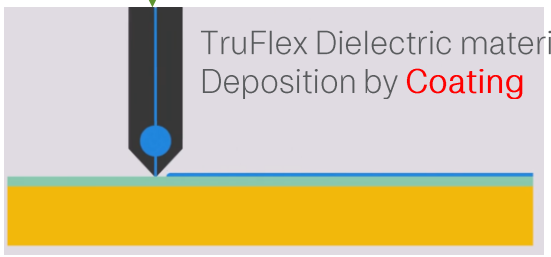
2023 CBAM
European Union CO_2 quote :
$60 to $70 per ton CO_2

Conventional TFT-LCD implemented lots of PECVD to build TFT backplane structure





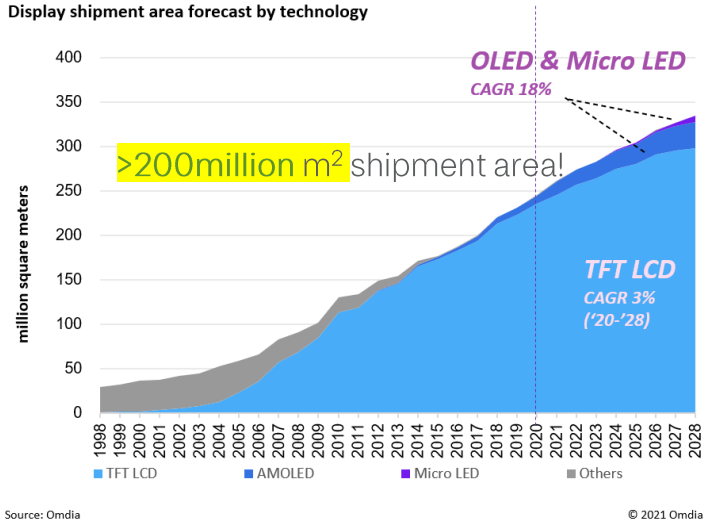
Saving >10% overall electricity



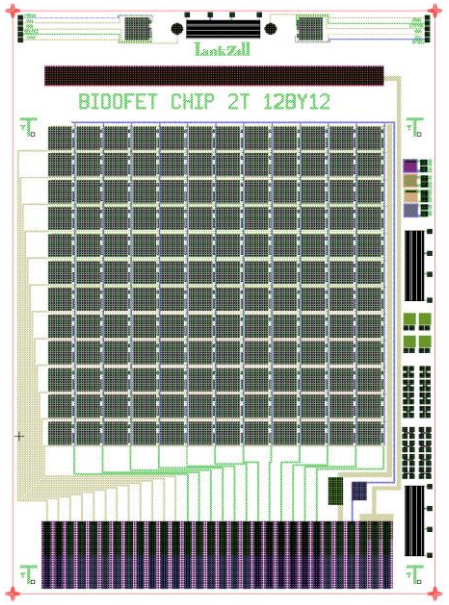
Dry etching gas for SixNy
SF_6 : 22.8k factor than CO_2
NF_3 : 17.2k factor than CO_2

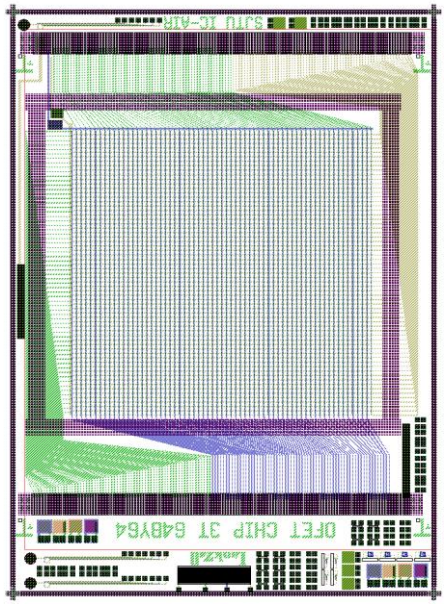
No global warming gas

Dry etching gas for TruFLEX
O_2 : 0 factor than CO_2

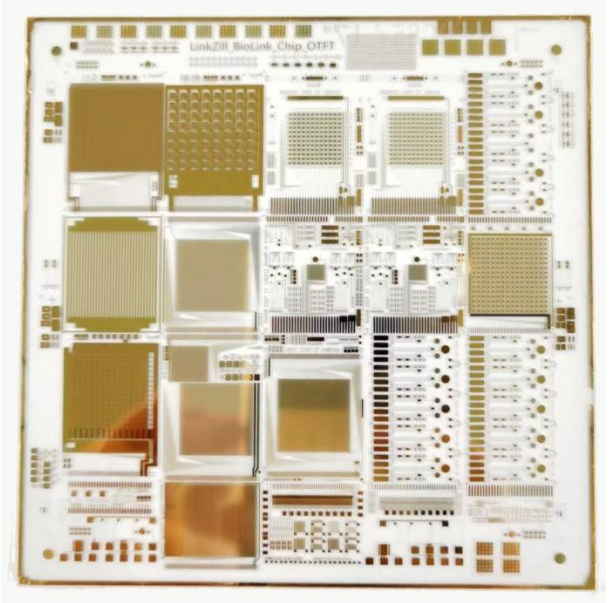


Prototyping Sales: OTFT-based Bio-sensing Chip

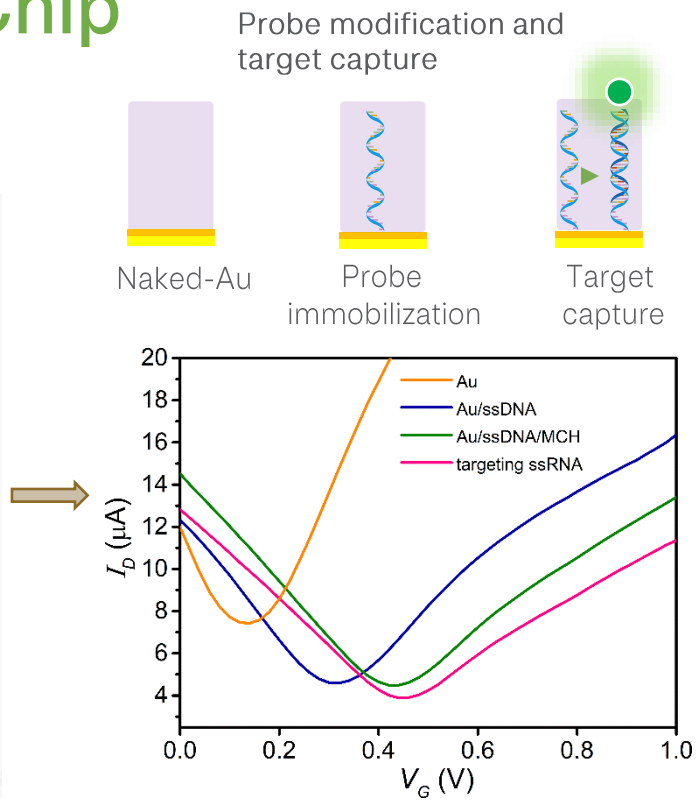




Pixel schematic diagram, and layout of the (a) 12*12 & (b) 64*64 nucleic acid/protein/ion biosensing array chip @LinkZill



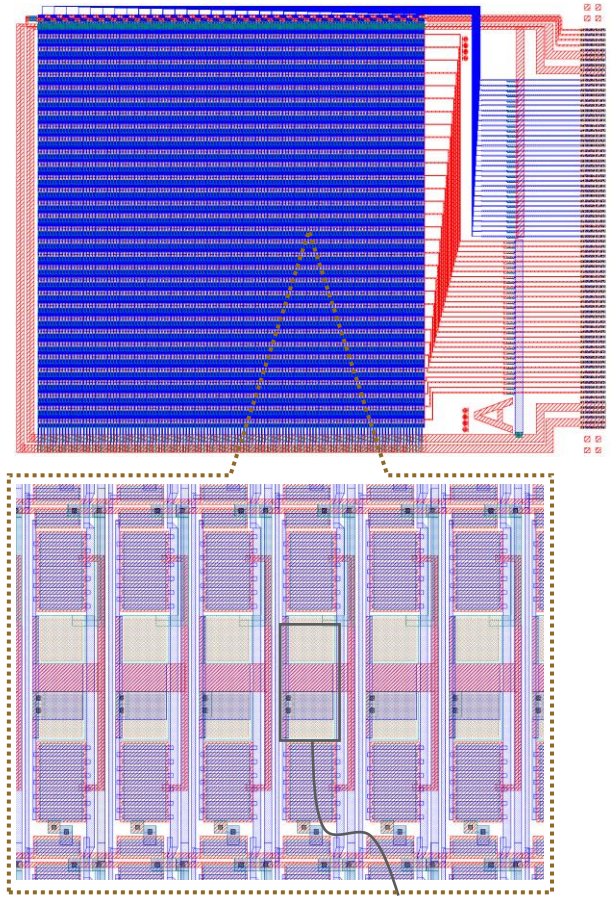
(c) Real sample of the OTFT device on the bio-sensing chips.



(d) Transistor sensors' output current to probe/target molecule reaction

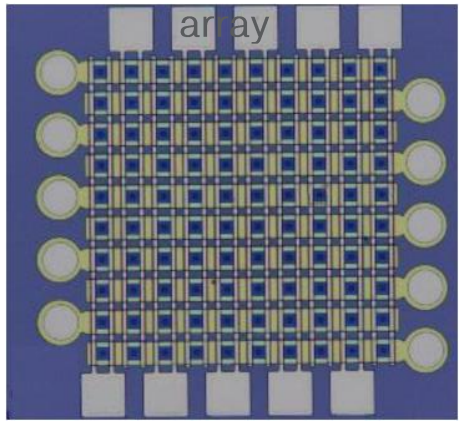
Types of OTFT bio-sensing arrays have been designed and manufactured to detect the changing electrical signals caused by nucleic acid in-situ hybridization or protein immune reaction, aiming at the IVD kits.

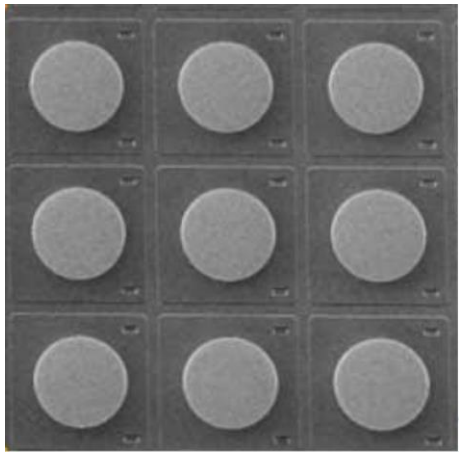
Prototyping Sales: OTFT-based in situ Synthesis Chip



Single Pixel

Photochemical array

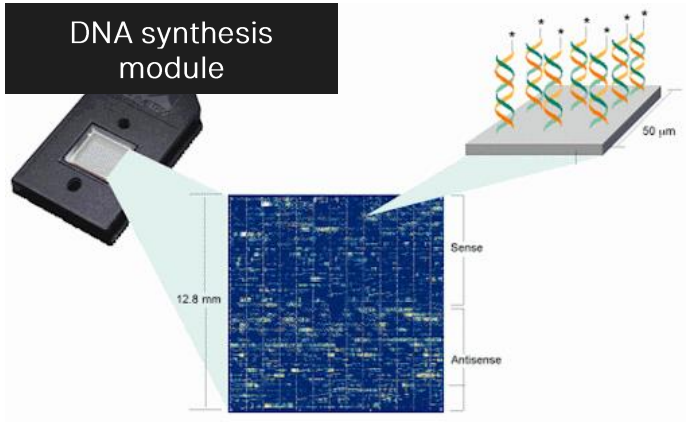




Microelectrochemical array

Oligo pool

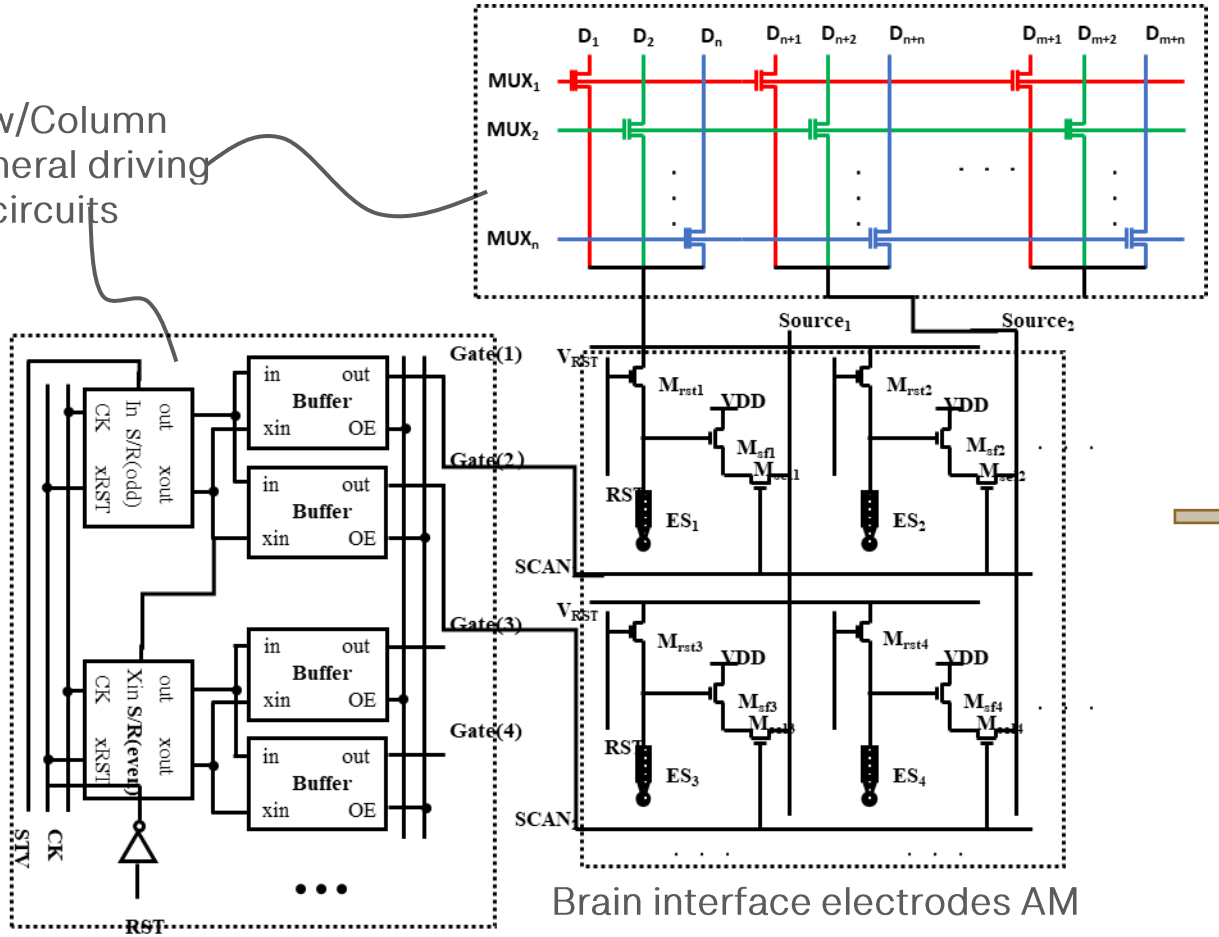
DNA synthesis module



Oligonucleotides synthesis array

We are progressing collaborations with our key partners on the OTFT-based photochemically/ electrochemically induced DNA synthesis applications through the tripartite cooperation model.

Prototyping Sales: OTFT-based Brain Machine Interface (BMI) Kits



Brain interface electrodes AM array

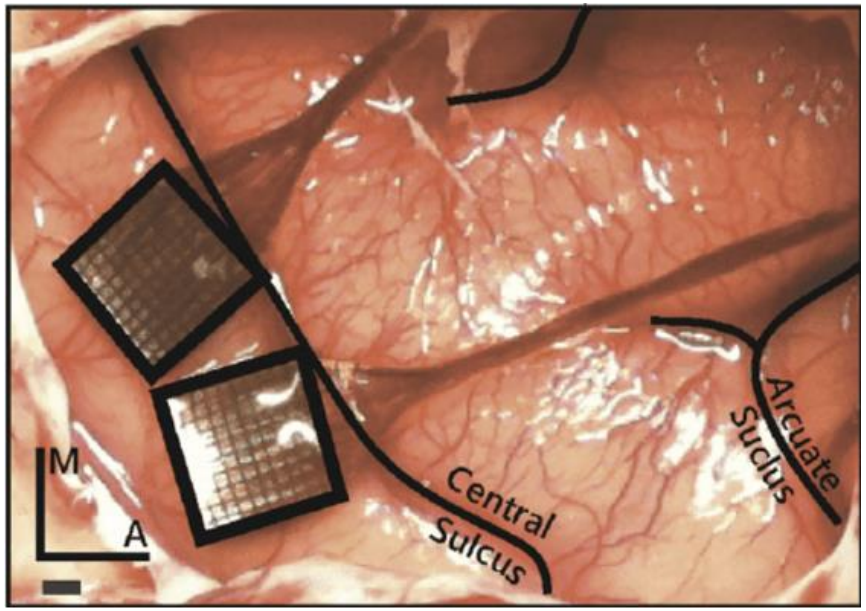
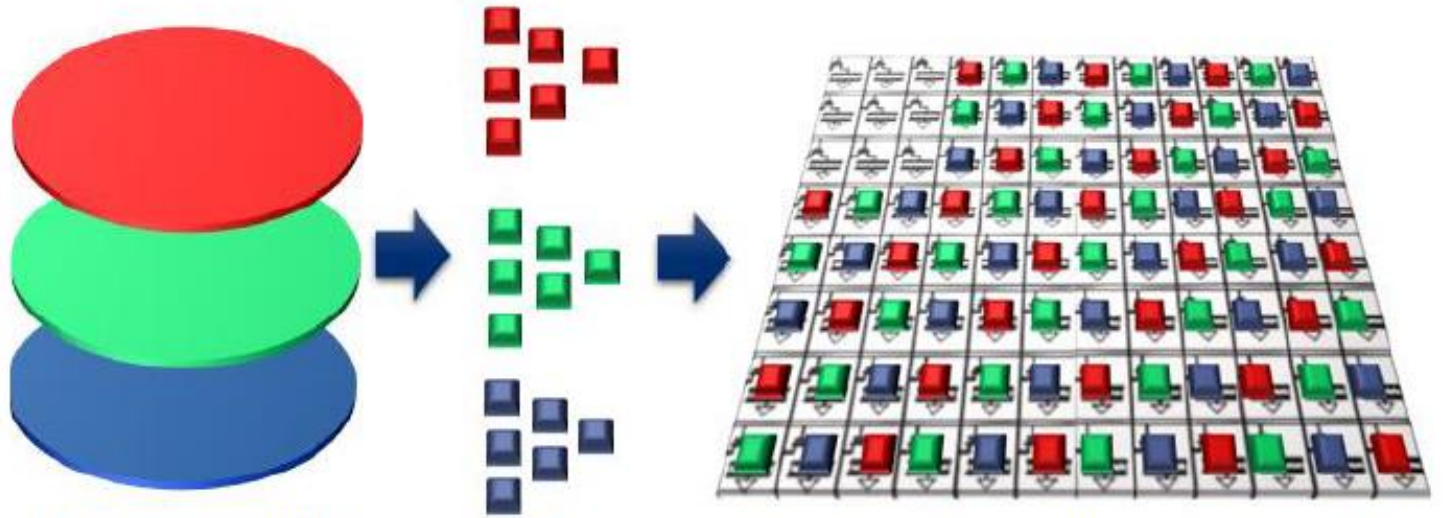


Illustration of the brain interface electrodes AM array

On the basis of the OTFT design & process development kit, we are carrying out a series of pilot research cooperations on flexible BMI array in the field of brain science.

Monolithically Integrated OTFT on MicroLED

- Transfer of LEDs from individual R G and B epi-wafers
- Yield of transfer is never 100% so costs are incurred for inspection and repair of faulty pixels



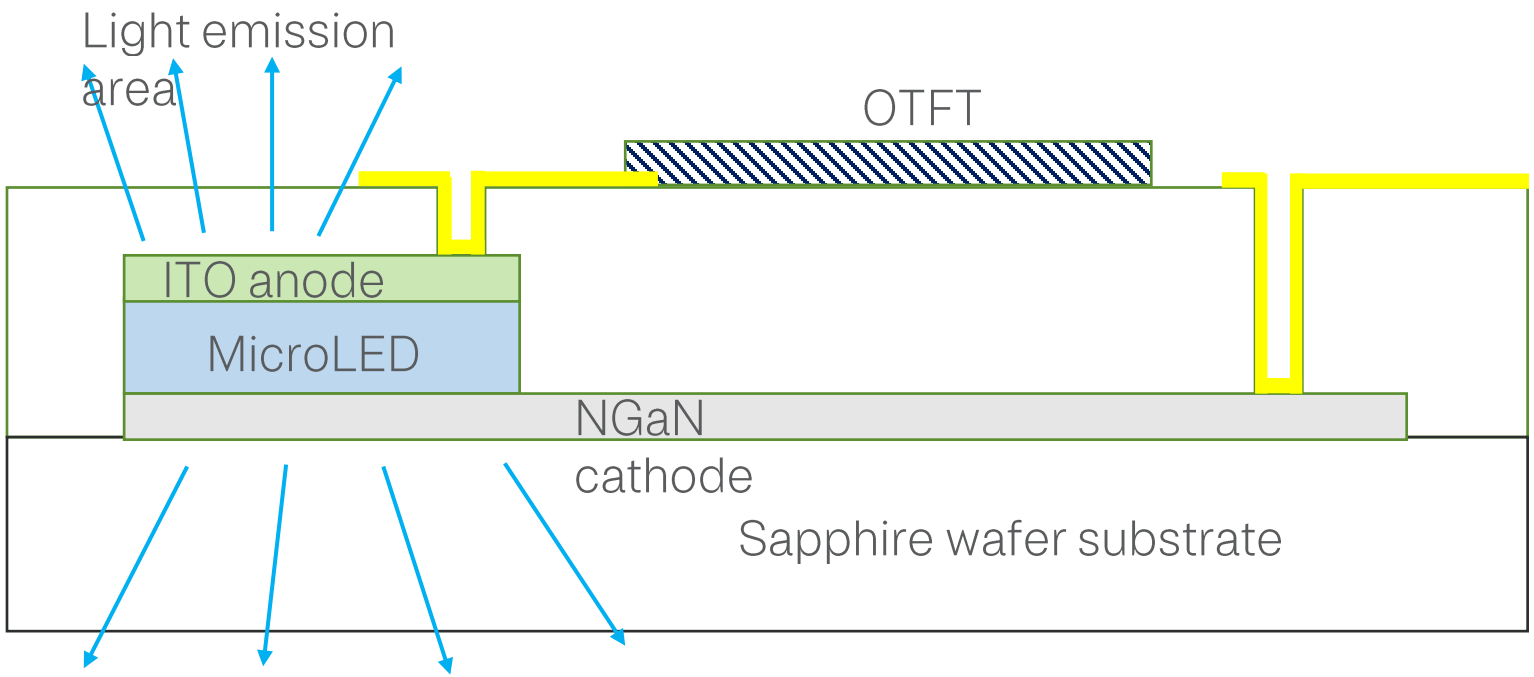
Red, green and blue LED epiwafers.

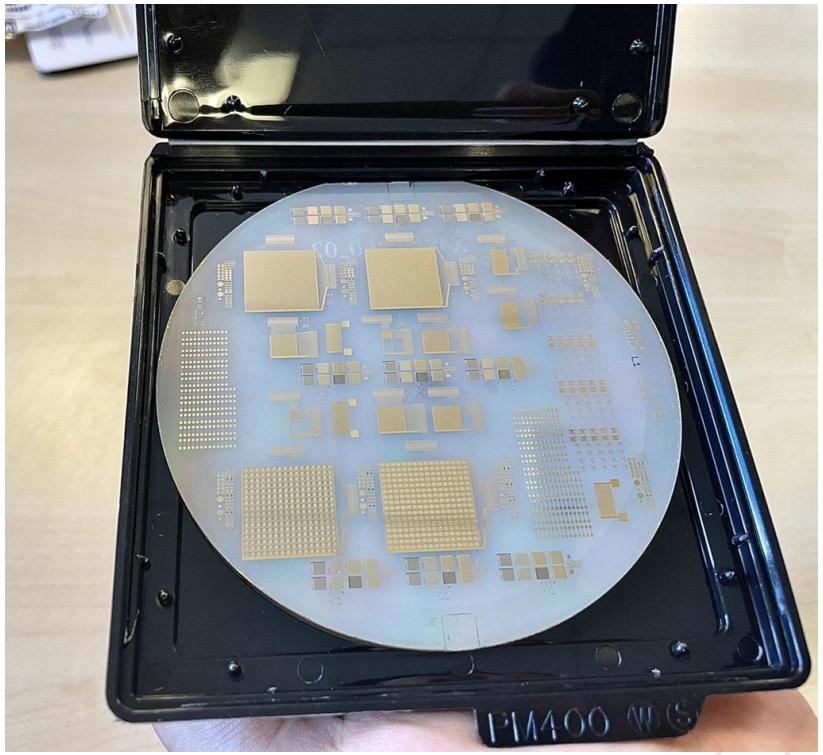
Chip singulation

Transfer and assembly: connection to the transistor matrix that controls individual pixels.

Monolithically Integrated OTFT on MicroLED

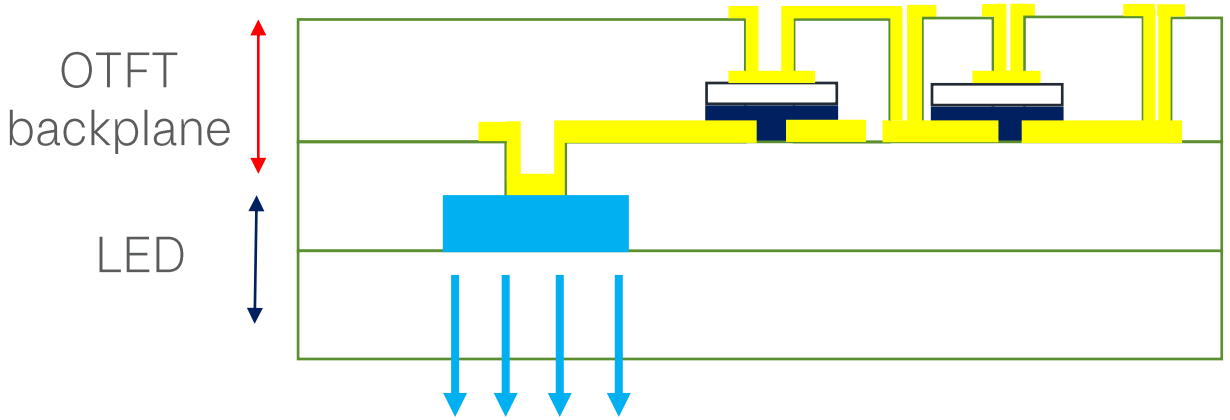
- Integrate OTFT backplane on top of u-LED array on Sapphire or Silicon wafer
- Monolithic integration means no transfer losses

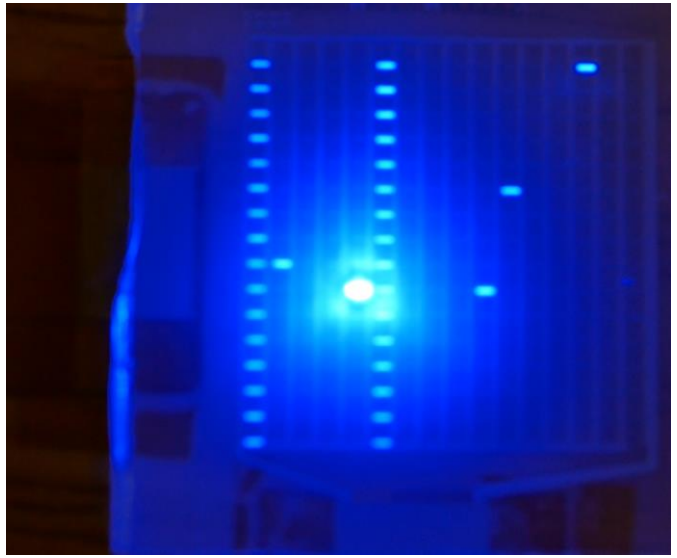


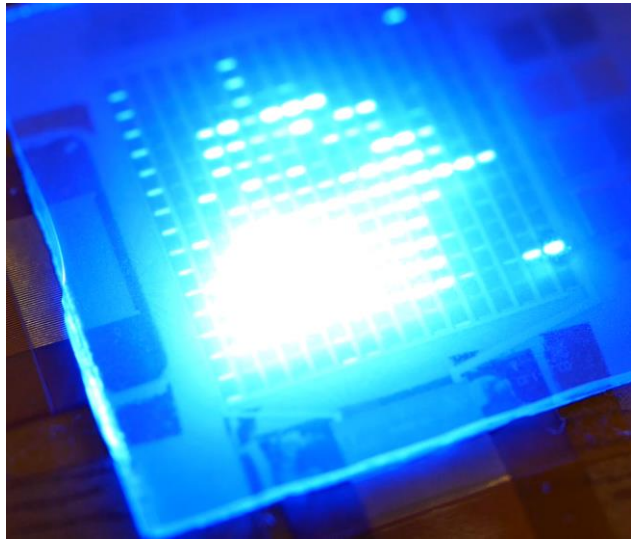


Monolithically Integrated OTFT on MicroLED

- Proof of concept design developed to show how OTFT can be processed on top of u-LED (no transfer so no transfer yield loss)
- Initial demos tested to >100K nits. Future potential for >500K nits with optimised design
- Process can be scaled from 10ppi to >1000ppi with appropriate lithography tools
- Colour can be integrated through the use of quantum dot colour conversion materials (printed or photopatterned)
- Most promising initial applications are projected to be smartwatches and VR displays







Looking forward...

Continued Improvement of Materials and prototyping

JOIN DEVELOPMENT AGREEMENTS

Early Revenues

SALES OF MATERIALS FOR TRANSISTOR STACKS

SALES OF SINGLE LAYER MATERIALS

SmartKem Officers

Ian Jenks
Chairman and Chief Executive Officer

Ian was formerly the president of Uniphase Inc, Chairman of Oplink Communications Inc which he took public on the NASDAQ and spent seven years as a partner of Crescendo Ventures llp Ian has been a director of Techstep ASA, Paysafe plc., and Brady plc.

Nigel Prue
Chief Accounting Officer

Prior to joining SmartKem in 2021 Nigel worked as Director of Finance at Global Eagle Entertainment Inc, a publicly traded company on NASDAQ. He was also a divisional finance director at construction companies Balfour Beatty Construction and Kier May Gurney. His early career includes public practice with PwC and controllership roles at AT&T. Nigel is a Fellow of the Institute of Chartered Accounts of England and Wales (ICAEW).

Dr. Beverley Brown
Chief Scientist

Beverley has worked in R&D at Imperial Chemical Industries Ltd. (“ICI”), Zeneca Group PLC and at the Avecia Group PLC. Beverley has worked in the field of organic semiconductor technology and in printable electronics for almost 20 years.

Dr. Simon Ogier
Chief Technology Officer

Simon has previously worked at Avecia, Merck, CPI and more NeuDrive Limited. He currently manages a team of 19 engineers and scientists using the equipment for SmartKem’s process development and prototype fabrication. Simon has co-authored 30 journal articles and has been co-inventor on 16 patent families.

Sri Peruvemba
Chief Marketing Officer

Previously Chief Marketing Officer for E Ink Holdings, Sri played a major role in transforming the $15M start-up to a $1B+ global company. With over 30 year’s experience in technology, Sri has held senior level positions at Sharp Corp, TFS Inc., Planar Systems and Novasentis.

SmartKem Board of Directors

Ian Jenks
Chairman and Chief Executive Officer

Ian was formerly the president of Uniphase Inc, Chairman of Oplink Communications Inc which he took public on the NASDAQ and spent seven years as a partner of Crescendo Ventures llp Ian has been a director of Techstep ASA, Paysafe plc., and Brady plc.

Klaas De Boer
Director

Klaas serves as the Managing Partner of Entrepreneurs Fund Management LLP. He served on numerous boards, including Lifeline Scientific Inc. and Heliocentris Energy Solutions AG. He currently chairs AIM listed Xeros Technology Group plc, and General Fusion, Inc., and serves on the boards of vasopharm GmbH and D3O Holdings Ltd.

Barbra Keck
Director

Barbra served as the Chief Financial Officer of Deverra Therapeutics, Inc., a developer of cell therapies. She held positions of increasing responsibility at Delcath Systems, Inc., an interventional oncology company, starting as Controller and ultimately becoming a senior vice president in March 2015 and chief financial officer in February 2017.

Dr. Steven DenBaars
Director

Steven is a Professor of Materials and Electrical and Computer Engineering as well as the Executive Director of the Solid State Lighting and Energy Electronics Center at the University of California, Santa Barbara. Steven has previously worked at the Hewlett-Packard Optoelectronics team. He has been a Director on the Board of several startup companies which include Soraa Laser Diode, Akoustis Technologies and Aeluma Inc.

Reshaping the World of Electronics | OTCQB: SMTK

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Monolithic display for AR & VR headsets.

Smartkem

OUR TRANSISTORS YOUR ADVANTAGE

THANK YOU

For more information contact us:

Manchester Technology Center
Hexagon Tower, Delaunays Road,
Blackley, Manchester M9 8GQ UK

+44 (0) 161 721 1514
enquiries@smartkem.com