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Heraeus, SigmaSense, & Xymox Showcase PEDOT, Flexible Touch Sensor

Large size PEDOT sensors with industry breakthrough sensitivity demonstrated at C-Touch & Display 2019

SHENZHEN, China – November 20, 2019 – [SigmaSense LLC](http://www.sigmasense.com), a pioneering market leader in Capacitive-Imaging, and Xymox Technologies announce the industry's first 3mm channel width touch sensor using Heraeus Group's PEDOT technology. Now, large size, flexible sensor support driven with voltages as low as 0.73 Volt are possible. Hand hover over one inch is achieved with only a 2.2 drive Voltage. The sensor utilizes a standard PEDOT film process without any complex and costly metallization additions often previously required to enable capacitive touch sensing on large PEDOT film sensors. SigmaDrive™ technology is capable of driving PEDOT sensors with channel resistance greater than 300K ohms where alternative capacitive sensing methods have fallen short of required signal-to-noise (SNR) and sensitivity. Now, lower cost optically clear, large size PEDOT:PSS sensors are available to OEMs as an alternative to many other conductive transparent films, including indium tin oxide (ITO).

"Heraeus' conductive polymers Clevios™ PEDOT:PSS are flexible and durable touch sensor materials that enable foldable and rollable touchscreens. Applied by wet coating, they offer cost-effective touch solutions," said Dr. Armin Sautter, Global Head of Technical Service for Displays at Heraeus Epurio. "Scaling Clevios™ -based touch sensors to large sizes, such as 43 inches or bigger, has long been a challenge for touch controllers. SigmaSense's SigmaDrive™ touch controller technology has overcome past barriers, enabling precise touch solutions regardless of sensor size. We are thrilled about this leap for our industry."

This Changes Everything

SigmaDrive™ technology provides robust performance with all large sensors, even with channel resistance greater than 300K ohms. Traditional capacitive imaging controllers cannot support these demanding specifications with reliable performance. SigmaDrive has broken nine industry records utilizing a signal-to-noise (SNR) ratio unmatched in the industry. SNR at a given drive voltage, normalized for time, is over 340X superior to results possible today. This

breakthrough capability enables sensitivity and the use of new flexible large display size sensor materials that were previously thought to be impossible. Lower power consumption, higher performance is achieved without the tedious, lengthy and costly tuning process common in the industry. SigmaDrive tuning requires minutes or hours instead of the weeks or months that are commonly required.

“Thanks to SigmaSense’s Capacitive Imaging Technology, size is no longer a limiting factor for us, opening new markets and exciting opportunities,” said Dean Hotvet, Director of Business Development for Xymox Technologies. “We’ve developed industry leading capabilities to chemically process Kodak Estar HCF film into crystal clear projective capacitive sensors suitable for today’s large displays. The higher surface resistance of Clevios PEDOT:PSS based sensors limited their application with traditional touch controllers. SigmaSense removes that hurdle, making a great technology available to a much larger market.”

Horizontal Interactive Displays Now Possible.

SigmaVision™ capacitive imaging of the entire screen provides a 300Hz data representation of objects and touches on or near the touch sensor. The image data is provided for AI based object categorization which enables a superior user experience and a perceptive display. Perceptive displays are the next wave in user experiences entering the market. Touch sensing on large horizontal displays up until now was not successful due to technical hurdles such as interference created by objects, liquids on the display surface or the environmental and system noise that was always present. SigmaSense’s high SNR provides sensitivity that overcomes these limitations through SigmaVision capacitive-imaging on the entire display surface. Liquids and a variety of objects on the surface are no longer barriers to the applications that require a reliable touch solution on horizontal surfaces. Interactive kitchen tables, coffee tables, workspace desks, game tables and classroom desks are now feasible, delivering a more effective and responsive Human Machine Interface (HMI). This breakthrough capability is a boon to OEMs that target high growth new market segments. This performance achievement is still another industry first in an ever-increasing list of SigmaSense breakthroughs.

“SigmaSense is enabling interactivity for tabletops, student desktops, countertops, coffee tables, work-surfaces, white boards, flexible TVs, and even windows. Our SigmaVision™ capacitive imaging technology provides the combination of capabilities that is truly a game changer for markets that have been waiting for the technology to catch up with market needs,” said Rick Seger, CEO, SigmaSense. “Our Capacitive-Imaging technology breakthrough tears down barriers and enables new markets that were simply not possible before.”

The demonstration will be showcased at the Heraeus booth, Hall 1, V01, Shenzhen Exhibition and Convention Centre, 21-23 November 2019.



About SigmaSense® LLC

SigmaSense, the global leader in touch sensing performance, is changing the world of traditional analog sensing solutions with a new advanced digital approach. We are pioneering a comprehensive sensing technology that delivers an order of magnitude improved performance that was previously not possible. SigmaVision™ capacitive imaging technology provides both touch and object detection on or in proximity to the sensing surface, thus enabling a new generation of perceptive devices that are interactive and engaging. Products that utilize sensing surfaces ranging in size from small wearables to surfaces larger than 100 inches can now adopt a superior sensing experience that reduces costs and lowers design risk. Headquartered in Austin, TX, SigmaSense provides semiconductor and board level products with development tools and support.

About Xymox Technologies

Xymox Enables the Power of Touch by creating innovative flexible circuit designs for the integration of electronics into everyday life. Our primary focus is on providing an exceptional user interface experience with PEDOT PCAP sensing technology and traditional membrane switches. Based in Milwaukee, WI, Xymox has been in business since 1979 and strives to be the recognized expert in the field of Printed Electronics with a focus on providing exceptional user interface experiences for Original Equipment Manufacturers (OEM's).

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