

Synkera Technologies Inc. develops, manufactures, and markets innovative devices based on a combination of nanotechnology, micro and nanofabrication, and advanced materials science. The company is focused on developing chemical sensors and nanostructured ceramics.

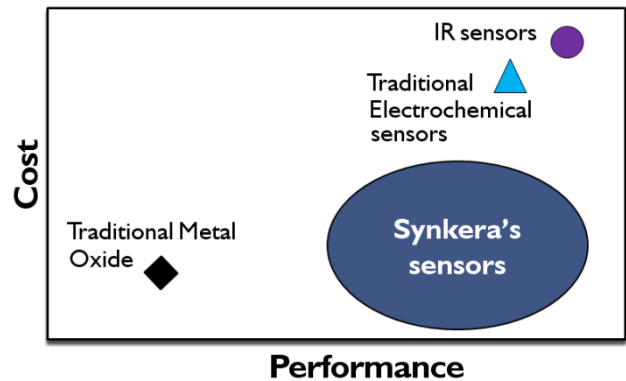
CURRENT SENSOR PRODUCTS

Metal oxide and polymer composite sensors provide an inexpensive, rugged and reliable option for alarm detection of a variety of toxic and flammable gases. These sensors are based upon NanoMOS™ technology, incorporating complex blends of nanostructured semiconductor materials along with proprietary dopants and catalysts. The sensors feature better sensitivity, stability and selectivity than competing devices.

Sensors are available on both the original ProKera™ platform, (offered since 2003), and the new, lower power MikroKera™ platform, introduced in 2010. Evaluation circuitry is available for users who want to easily measure sensor response.

Gases detected include:

ProKera™ Hydrogen (trace)	H ₂	P/N 701
ProKera™ Hydrogen (LEL)	H ₂	P/N 703
ProKera™ Ammonia	NH ₃	P/N 705
ProKera™ Nitrogen Oxides (trace)	NO _x	P/N 706
ProKera™ Volatile Organics	VOC's	P/N 707
ProKera™ Flammable Gases		P/N 711
ProKera™ Nitrogen Trifluoride	NF ₃	P/N 712
ProKera™ Hydrogen Sulfide	H ₂ S	P/N 714
MikroKera™ Hydrogen	H ₂	P/N 724
MikroKera™ Volatile Organics	VOC's	P/N 725



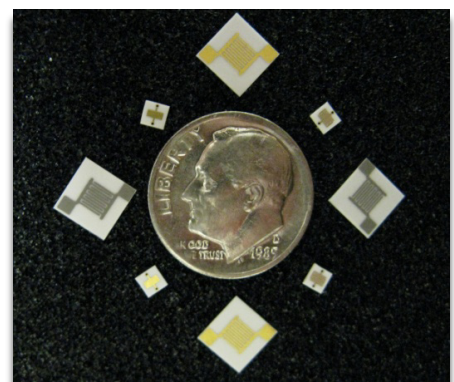
MICROELECTRODES

Synkera offers a rugged, affordable line of electrodes for materials characterization and electrochemical analysis. Platinum interdigitated electrodes in a robust ceramic body (capable of withstanding temperatures in excess of 1000°C) are available in a standard configuration of 5 μm width and 15 μm gaps. Planar interdigitated electrodes are available in multiple sizes and spacing configurations. The interdigitated electrodes have been widely used as a substrate for materials characterization, while both platinum and gold dash and band microelectrodes have been used for electrochemical detection of heavy metals in aqueous solutions.

ADDITIONAL INFORMATION AND ORDERING

Data sheets for all products are available on the Synkera website:
<http://www.synkera.com/Products/docs.html>.

For more information, or to place an order, contact Synkera at info@synkera.com or 720-494-8401.





SYNKERA SENSOR PRODUCT OVERVIEW

BROCHURE

CURRENT SENSOR PROTOTYPES

MicroKera™ Platform

Synkera has developed and patented a unique, micromachined and nanostructured ceramic sensor platform. H₂ and VOC's are currently available and any other ProKera™ sensors can be fabricated on this platform, resulting in significantly reduced power consumption and high reliability.

Synkera is continually developing sensors for new gases to expand our product line. Prototype sensors now available on the MikroKera™ platform include:

- Chlorine (Cl₂)
- Hydrogen Sulfide (H₂S)
- Ammonia (NH₃)
- Ethylene Oxide (C₂H₄O)
- Hydrogen Cyanide (HCN)

Many other toxic gases are in the product pipeline. Please call or email to learn more.

Solid State Electrochemical Sensors

Synkera has developed a unique solid-state amperometric sensor for the detection of Hydrogen Sulfide (H₂S), featuring a novel, patent pending polymer electrolyte unaffected by either low or high humidity levels. With performance that matches or exceeds conventional liquid electrolyte sensors at a competitive cost and small size, these sensors are ideal for portable sensing applications. Carbon Monoxide (CO), Ethanol and Ozone (O₃) sensors are also under development.

Humidity Sensors

High performance humidity sensors are available on the MikroKera™ platform. These sensors feature high performance at temperature and humidity extremes, including balloon-borne atmospheric measurements. The onboard heater offers the possibility of regeneration and advanced operating modes, while the nanoporous architecture offers an extremely high sensing area. These advanced operating modes have the potential to significantly increase sensor performance, including stability and reliability.

Availability

Prototype sensors are available to select customers and partners in limited quantities. For more information please contact Synkera at info@synkera.com or 720-494-8401.

PRODUCTS UNDER DEVELOPMENT

Listed below are a few of the exciting sensor research projects ongoing at Synkera Technologies. To learn more about projected sensor availability, or to inquire about custom sensor development, exclusivity or partnering arrangements, please contact Synkera at 720-494-8401 or info@synkera.com.

Catalytic Sensors

Catalytic gas sensors for combustible gas measurement based upon Synkera's patented MikroKera™ sensor platform are under development. These sensors will feature low power consumption along with high reliability and sensitivity due to the unique nanoscale porosity. Partners for sensor and catalyst development are actively sought.

Advanced Chemiresistor Sensors (MikroKera™ Ultra)

Synkera is developing the next generation of metal oxide sensors to take advantage of the ultra-high surface area afforded by the nanoporous MikroKera™ platform (as much as 1,000 times the surface area of a flat substrate). These sensors will feature not only very low power (<5 mW), but also improved sensitivity and selectivity due to the precise control of sensing material features at the nano-scale. Detection limits at the ppb level have already been demonstrated for many target gases.

Sensor Arrays

Synkera's ability to perform high precision and high aspect ratio micromachining in anodic alumina has enabled the development of a variety of sensor arrays, based upon integration of the technologies described herein. These arrays are being developed for select applications with up to 4 sensors included in a single TO-8 or SOIC package. Other combinations and smaller configurations are possible. Arrays of multiple electrodes within a ceramic body are also available for electrochemical analysis.

Support Electronics

Microprocessor-based sensor support modules are under development to support calibrated outputs, more sophisticated sensor operating modes, sensor data management and wireless communications.

SYNKERA TECHNOLOGIES, INC.

2605 Trade Centre Ave., Ste. C, Longmont, CO 80503 www.synkera.com info@synkera.com tel 720-494-840 fax 720-494-8402

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