



IEEE SF Bay Area MEMS and Sensors Chapter

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Zero-Power Sensors for the Trillion Sensor Universe



Speaker: Joseph R. Stetter, KWJ Engineering, Inc., SPEC Sensors, LLC.

Date/Time: Wednesday, June 17th, 2015, 6:00 - 8:00 PM.

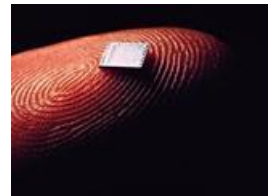
Location: Texas Instruments Building E Conference Center, 2900 Semiconductor Dr., Santa Clara, CA 95052.

Food: Complimentary Pizza and beverages starting at 6:00 pm.

Sponsorship: Opportunities are available.

Contact sfba-mems-officers@listserv.ieee.org

Abstract: An emerging GDP revolution based on fusion of computing, communication, and sensing will bring a state of “abundance” and create the largest bull market in history. Technical global tides including the Internet of Things (IoT), Mobile/Wearable electronics, Digital Health, and context computing are driving the need for billions of sensors. Healthcare will require 50 or more sensors on the body and will shift emphasis in healthcare from diagnosis of disease to the business of wellness. Products are being introduced in wearable electronics validating this new market segment and acknowledging its rapid growth. The IoT with cloud and fog computing is planning to use trillions of sensors for “crowd” monitoring of our health, safety, and security. The disruptive characteristic of the needed gas sensors always includes low power but the technology must also be low cost and scalable to high volumes in order to be successful in high volume applications. These restrictions also usually come with the need for high performance and small unobtrusive packaging! The smallest amperometric sensor for environmental and health measurements yet made [4x4x1mm, at right] and the performance with a virtually zero power requirement is discussed as an example of the contribution of Printed electronics. A tiny thermal MEMS sensor with the stability of more than 30 billion measurements and microwatt power use is discussed as exemplary of the revolution of gas sensors for mobile platforms and infrastructure. [www.Tsensors.org and www.spec-sensors.com].



Bio: Joseph R. Stetter is the President and Chief Technology Officer at KWJ Engineering, Inc. and also at his new startup, SPEC-Sensors, LLC. KWJ manufactures instrumentation and related products that provide solutions for real-world gas detection needs. SPEC Sensors is a sensor component company making disruptive ultra-low power, ultra-low cost, high-performance tiny gas sensors for high volume markets in industrial, medical, and consumer wearable, infrastructure, and wireless applications. Dr. Stetter is a visiting scholar at Georgia Institute of Technology, adjunct professor, and has won awards for his work in technology development, sensor research, and product commercialization such as 2002 Entrepreneur of the Year award by TMAC. Sensor products created by Dr. Stetter are in use today protecting human health and the environment and most recently crossing over into consumer products. Joe earned his Ph.D. from the State University of New York at Buffalo in 1975. He is the author of over 200 articles, books, and conference proceedings, holds more than 40 patents, has chaired national and international meetings and served on the boards of several startup companies. He has edited journals, been a plenary speaker at conferences, given invited and endowed Lecture Series, and is active in professional societies and is a Fellow of the Electrochemical Society. His experience spanning science, technology, and business are leading to new products in Sensors, MEMS, Printed Electronic and he continues his work building the things that enable the internet of things, wearable products, smart cities, and promote the health and wellbeing of people and our planet.