FOR IMMEDIATE RELEASE

RASIRC Presents Novel Source for Oxidation and Nitridation for Atomic Layer Deposition

Describes anhydrous hydrazine and hydrogen peroxide surface functionalization and passivation

San Diego, Calif – May 31, 2016 –RASIRC today announced that Chief Technology Officer Dan Alvarez, PhD will present today *Novel Oxidants and Sources of Nitrogen for Atomic Layer Deposition* at the 229th Electrochemical Society Conference. The conference, held May 29-June 2, 2016 in San Diego, California, is a forum for sharing the latest scientific and technical developments in electrochemistry and solid state science and technology.

The RASIRC presentation describes how development of novel metal precursors for atomic layer deposition (ALD) has been driven by the need for improved high-K materials and low temperature deposition for metal nitride films. These metal precursors in turn require novel oxidant and nitrogen sources that are more reactive than water and ammonia but less aggressive than ozone and plasma methods. Alvarez will present data on how anhydrous hydrogen peroxide and anhydrous hydrazine have shown feasibility in ALD.

"The challenge for using anhydrous hydrogen peroxide and anhydrous hydrazine in commercial application has been that they are both difficult to deliver safely in a consistent and stable concentration," said Alvarez. "RASIRC has developed and tested a method that overcomes these problems, making it practical for industry to use these reactive chemicals with new materials in ALD."

The RASIRC formulation for delivery of highly reactive chemicals uses an inert organic solvent and membrane delivery system that delivers anhydrous gas from liquid sources. This maintains precursor vapor pressure at levels viable for ALD and raises the solution flash point, reducing risk of explosion. The RASIRC presentation will share results from experiments focused on SiGe(110) surface nucleation by anhydrous hydrogen peroxide

and passivation by low temperature nitride growth. Nucleation studies on SiGe showed a five-fold improvement in hydroxyl nucleation density for anhydrous hydrogen peroxide versus water. XPS showed that SiGe(110) can be passivated using hydrazine as a low temperature nitride source.

“The results of these experiments are very positive for the use of BRUTE Peroxide and BRUTE Hydrazine in surface functionalization and passivation with novel metal precursors,” said Jeff Spiegelman, RASIRC President and Founder. “As researchers continue to experiment with these new molecules, we expect to enable new materials and device structures in many other applications.”

For more information, request a copy of the poster. Additional information is also available for BRUTE™ hydrogen peroxide and BRUTE™ hydrazine.

About RASIRC

RASIRC specializes in products that generate and deliver gas to fabrication processes. Each unit is a dynamic gas plant in a box—converting common liquid chemistries into safe and reliable gas flow for most processes. First to generate ultra-high purity steam from de-ionized water, RASIRC technology can now also deliver hydrogen peroxide and hydrazine gases in controlled, repeatable concentrations. RASIRC gas delivery systems, humidifiers, closed loop humidification systems, and steam generators are critical for many applications in semiconductor, photovoltaic, pharmaceutical, medical, biological, fuel cell, and power industries. Call +1(858)259-1220, email info@rasirc.com or visit http://www.rasirc.com.

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