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RASIRC Utilizes Novel Safe Hydrazine Delivery System to Enable Low Temperature Group III Metal-Nitride Deposition

Company presents AlN deposition results at International Conference on Nitride Semiconductors

San Diego, Calif – July 8, 2019 – [RASIRC](#) will discuss the benefits of anhydrous hydrazine as a nitrogen source at the [13th International Conference on Nitride Semiconductors](#) (ICNS-13) in Bellevue, WA on July 7–12. RASIRC Chief Technology Officer Dr. Daniel Alvarez will present “*Low Temperature Aluminum Nitride Deposition Enabled by Hydrazine*” during the event’s poster session on Tuesday July 9. The poster will compare growth characteristics and film properties for TMA/Brute Hydrazine versus TMA/Ammonia.

“To date, low temperature III-Nitride deposition has been plagued by low growth rates and unwanted residual carbon and hydrogen remaining from precursor materials. Utilization of hydrazine is thermodynamically more favorable due to the reactive nature of the N-N bond,” says Alvarez. “Hydrazine has been around for many years, but is only now ready for III-Nitride manufacturing thanks to safety and contamination issues addressed by RASIRC.”

RASIRC President and Founder Jeffrey Spiegelman adds, “The use of hydrazine will enable our customers to have larger process windows while reducing costly precursor consumption found with sources like Indium.”

ICNS-13 will present high-impact scientific and technological advances in materials and devices based on group-III nitride semiconductors, and will feature plenary

sessions, parallel topical sessions, poster sessions and an industrial exhibition. The ICNS-13 Exhibit offers the most direct access to researchers from around the world who are seeking technical solutions to their challenges.

Dr. Alvarez will be available at ICNS-13 to discuss the RASIRC precursor chemistry product line-up, which includes hydrazine, hydrogen peroxide and more. Information about RASIRC products will also be available in the Matheson Gas exhibition booth.

About RASIRC Products

BRUTE[®] Hydrazine enables uniform nitride deposition for Silicon and Group III metals at low temperature. BRUTE Hydrazine may also be used as an atomic hydrogen source, where metals such as Ru, Cu, and Co may be cleaned and reduced. Hydrazine gas is generated in situ and is virtually water free. Brute Hydrazine has been formulated for a relatively high flash point for safer handling.

BRUTE Peroxide is a novel oxidant that improves nucleation density at film interfaces when compared to other oxidants. Surface functionalization is more dense and initiation is faster using anhydrous hydrogen peroxide gas compared with alternatives. This enables better selectivity and less damage to metal surfaces in ASD processes.

RASIRC Peroxidizer[®] provides high volumes of reactive H₂O₂/H₂O mixtures for high throughput ALD. This reactive gas generator is ideal for roll-to-roll ALD coatings that require high speed deposition at reduced temperatures.

Additional RASIRC products include the RainMaker[®] Humidification System (RHS) and the Hydrogen Peroxide Steamer (HPS). The RHS generates water vapor for oxidation applications and the HPS provides surface cleaning, preconditioning, wet thermal oxidation and residual carbon removal.

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 safer and reliable gas flow for most processes. RASIRC technology delivers water vapor, hydrogen peroxide gas and hydrazine gas in controlled, repeatable concentrations. RASIRC gas delivery systems, humidifiers, and closed loop humidification systems are critical for many applications in semiconductor, photovoltaic, pharmaceutical, medical, biological, fuel cell, and power industries. Call 858-259-1220, email info@rasirc.com or visit <http://www.rasirc.com>.

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