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## FOR IMMEDIATE RELEASE

### **Leading Optical Wave Guide Manufacturer completes Thermal Oxide Retrofit with RASIRC Steamers**

*Reduced annual costs by \$100,000 & increased TOx capacity 17% per furnace tube*

**San Diego, Calif. – September 24, 2008** – **RASIRC**<sup>®</sup>, the steam purification company, announces that a major manufacturer of optical wave guides has installed a third RASIRC Steamer, completely eliminating pyrolytic torches for growing thick oxides (TOx) via wet thermal oxidation. After the retrofit was completed, the customer reduced annual costs by \$100,000 per tube, increased TOx capacity 17% per furnace tube, and achieved return on investment only three months after qualification. The TOx cost with the RASIRC Steamer was found to be 6% of the cost of using a pyrolytic torch when including the infrastructure for hydrogen and oxygen.

The TOx layer forms the base under-cladding for the wave guide manufacturer's advanced nano device chip fabrication. The RASIRC Steamer produces ultrapure steam by boiling de-ionized water, which is inexpensive and widely available. Water contaminants, including dissolved gases, are removed, metallic impurity sources are eliminated, and particle sources are greatly reduced for purity equal to or better than that created by burning oxygen and hydrogen. The RASIRC products deliver ultrapure steam that increases growth rate and decreases operating costs.

“Growing TOx on a 10-15 micron thick film typically takes up to 500 hours of process time,” said Jeffrey Spiegelman, president of RASIRC. “The RASIRC Steamer provides a 100% water vapor environment that minimizes cost and significantly increases throughput.”

The RASIRC steamer replaces the pyrolytic torch method of generating water vapor, which has been the industry standard for TOx growth. This method combines high purity hydrogen and oxygen gas to form steam that then diffuses oxygen into the silicon wafer, forming the TOx layer. Significant increases in the cost for hydrogen over the past few years, plus excessively

high costs to install bulk hydrogen and oxygen systems, have made the pyrolytic torch method cost prohibitive. The RASIRC Steamer only requires de-ionized water.

The RASIRC Steamer qualification required by the optical wave guide manufacturer included thickness targeting, thickness uniformity, low stress (low bow)/stress uniformity, and refractive index (RI) uniformity (within wafer, within batch, and batch-to-batch). These were all found to be equal to or superior to TOx grown via pyrolytic steam.

Contact RASIRC at 858-259-1220 or [info@rasirc.com](mailto:info@rasirc.com) for additional details on the cost analysis or for more information on creating a cost comparison for another facility.

### **About RASIRC**

**RASIRC** products purify and deliver ultra pure liquids and gases. RASIRC technology is the first to generate ultra high purity (UHP) steam from de-ionized water. It reduces cost, improves yield, and improves safety. RASIRC dryers, humidifiers, and steam generators are of critical importance for many applications in the semiconductor, pharmaceutical, medical, biological, fuel cell, and power industries. Custom systems are available upon request. Call 858-259-1220, e-mail [info@rasirc.com](mailto:info@rasirc.com), or visit [www.rasirc.com](http://www.rasirc.com).

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