



Contact: Karen Hackett  
310/328-0299

## *Dialogue*

*with Kiyu Toma, president, Advanced UV, Inc.*

### **1. What does Advanced UV, Inc. do?**

Advanced UV, Inc. was originally founded as the manufacturing arm of PHOTOSCIENCE Japan Corp., the number one supplier of ultraviolet (UV) water purification equipment to the microelectronics industry in Asia. Now Advanced UV, Inc. and Photoscience are the world's largest manufacturers of UV water treatment equipment for pure and ultrapure applications.

The founders were adamant about furthering the science of UV technology and began an extensive and ongoing research and testing program for a variety of industries including microelectronics, bio-pharmaceutical, food and beverage and power generation.

### **2. How does UV water treatment work?**

A typical UV unit irradiates water at a specific UV light wavelength within a stainless steel reactor chamber. In a short period of time, the water flowing through the chamber is exposed to a dose of energy that is lethal to most living microorganisms.

### **3. What are the advantages of UV Water Treatment?**

UV light is an increasingly popular method of disinfection of water because it purifies without altering the water's color, odor, taste, pH or flavor. Disinfection by UV is a non-chemical form of water treatment that does not produce any harmful by-products.

UV is also effective for TOC reduction. TOC (total oxidizable carbon) can be considered as micro-particles that serve as food for bacteria. Reducing TOC is imperative for microelectronics and pharmaceutical applications. For example, residual TOC in semiconductor rinse water can leave a film over the wafer surface that will contaminate and lead to product defects. Utilizing UV technology in an ultrapure water application can help companies achieve today's very strict water quality standards where TOC is virtually undetected at levels <1 ppb.

### **4. What are Advanced UV, Inc.'s key technologies?**

Ultraviolet light behaves differently in water than in air. One of Advanced UV, Inc.'s key advantages is that we fully understand how to maximize a lamp's output in water. This is significant, as most manufacturers today are not fully aware of what happens to UV in water. Even with recent advancements in technology, dose calculations and capacities are still based on UV output in air. Since Advanced UV, Inc. is in the water business, all of our dose calculations are based on UV output in water — which differentiates our systems from our competitors.

Advanced UV, Inc. offers a matched power supply and lamp that optimizes UV output. Our increased output ranges from greater than 20% for like technologies to nearly twice the output

differential of our competitors' equipment compared to their standard low-pressure, low-output technology

Our engineers have developed a truly unique power supply that delivers the optimal output and is driven by the correct voltage and current requirements to deliver the performance that industry requires for tomorrow's applications.

**5. Describe Advanced UV, Inc.'s product line and key benefits.**

Advanced UV, Inc. offers a diverse line of high-performance products that can be sized to the requirements of any application.

The AUV-TOC Reduction Series uses the latest UV technology to decimate TOC levels in pure water applications. With a maximum output of UV at a 185nm wavelength, these high-output units are extraordinarily effective and energy efficient, which becomes especially apparent when you compare our standard product offerings to our competitors' off-the-shelf technology.

AUV-ST disinfection and ozone destruction equipment provides an efficient and chemical-free alternative to multiple applications that are sensitive to microbial contamination and oxidation by ozone.

All our units incorporate an integral electrical enclosure, which provides a high level of electrical protection while simplifying installation and operational management.

Our customized modeling software program allows us to size TOC reduction systems according to a customer's particular makeup and polishing loop specifications and requirements. Provided with few estimated operating parameters regarding the system, we will calculate the recommended number of lamps for each application and identify the necessary power consumption required to operate the equipment. Not only is our software program going to help size the required equipment, this data is based on actual real world data modeled after typical organics found in today's UPW systems...not an antiquated 3X, 6X or 10X over sizing model based on a 254nm wavelength

**6. Who are Advanced UV, Inc.'s targeted customers?**

Our potential customers are essentially every company in the world that requires pure and ultrapure water. These industries include Microelectronics, Pharmaceutical / Biotech, Medical, Food and Beverage. Pure water is also required for Cooling Towers, Chillers, Refineries, Aquaculture, Fountain Water and Reuse and we can help customers design a system for these non-traditional applications as well.

**7. What new products are in development?**

Advanced UV, Inc. is working on products for the swimming pool / spa industry as well as the wastewater / municipal water industries. All of these industries would benefit from the use of UV in their treatment processes, to decrease the need for harmful chemicals such as Chlorine.

[Note to Editors: This dialogue is presented as a resource from which to draw short quotations. For further elaboration, you may call Karen Hackett directly: 310/328-0299.]