Summer 2016

Process Solutions

Water and Process Fluid Purification

Excellence in Innovation!

Process Solutions, Inc. has been selected for a 2016 Technology Innovator Award by *Corporate Vision*!

In recent years, technology has almost completely transformed the way in which we all do business, paving the way for companies to operate in a more efficient, timely and cost effective manner. From instant communication to advances in product and service offerings, almost every aspect of modern business has been influenced by technology. The Technology Innovator Awards were designed to recognize the individuals and firms behind the developments that change the way we do business for the better. The award process consisted of being nominated by a third party, then being put through a rigorous analysis by *Corporate Vision's* research team, who passed their findings on to a judging panel to make the final decision.

We at ***Process Solutions, Inc***. always knew that our approach to providing solutions for our customers was unique in the water treatment industry. It's great to be recognized by an independent organization, as well as by our long-term customers. Thank you for your support; we couldn't have done it without you!

Under Construction!

Process Solutions, Inc. is getting a new website! This will be a completely updated entity with an all-new look and feel; and will be designed for access from mobile devices as well as from your desktop. The official launch date has not been set, but the current site is still available while the work is going on. Check back periodically at www.psiwater.com for the updated version!

About Our Organization...

At ***Process Solutions, Inc***. we're committed to being your full-service supplier of water treatment products, systems and services. We do this by providing our customers with high quality products, great service and *all at competitive prices.* Please feel free to call us with your feedback and suggestions as to how we can be of service to you.

AMTA!

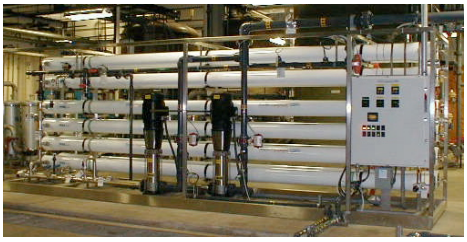
The AMTA Technology Transfer Workshop is coming to Columbus, OH!

Process Solutions, Inc. will be a sponsor for the American Membrane Technology Association (AMTA) Technology Transfer Workshop to be presented in Columbus, OH from October 25 – 27, 2016.

These workshops are designed for plant operators, engineers, water utility plant managers, designers, regulatory personnel, researchers, and others. This year's theme is *"Membrane Processes Present and Future in the Midwest"*. This AMTA Technology Transfer Workshop will focus on treating conventional water and waste waters using a range of membrane technologies. Attendees will learn about the present and future use of polymeric and ceramic based membranes to meet the needs of municipalities and industry. There will be plant tours of a local UF/MF clean water plant and MBR municipal waste water plant. The workshop will offer a review of membrane plants in Ohio and five membrane plant case studies. It will also cover a variety of topics ranging from how to select a MF/UF, a review of EPA and state regulations, strategies to avoid lead contamination, compounds of emerging concerns, a new RO process for difficult waters, and how to keep your RO running. The workshop will have tabletop exhibits by suppliers for these applications and several networking opportunities.

If you would like additional information on this event, please contact your ***Process Solutions, Inc.*** sales representative!

Reclaim, Recover, Reuse!



Recovering the concentrate from your RO system makes good environmental and economic sense!

With the rising costs of city water and sewer, users of pure water are looking to get the most "bang for the buck" and to minimize their utility costs. In many cases, the byproducts of primary water purification processes can be reclaimed and re-used, and returned to the inlet of the existing process, or directed to other applications in the plant. Not only does this reduce sewer costs, but by re-using this water there is less makeup water purchased from the supplier. In many cases, the product quality from the reclaim process is better than the raw water and actually improves the quality of the feedwater to the primary water purification system. Not only does reclaiming this water make good economic sense, but it's a major step toward most organizations' sustainability goals.

One of the keys to being able to reliably operate a reclaim process is doing a thorough job of characterizing the stream to be recovered. It also requires a *consistent* quality to avoid upsets. It generally makes more sense to isolate a specific stream (e.g. the concentrate from a primary RO unit) and have a smaller recovery system than to try to treat a composite waste stream from a plant.

Even in cases where further treatment is required to reclaim a waste stream, the economics are becoming increasingly attractive. To evaluate the feasibility and economics of possible reclaim applications for your facility, please contact your ***Process Solutions, Inc.*** sales representative for a consultation.

Ozone Disinfection!

It's a technology that has been around for a long time, primarily in the electronics and pharmaceutical industries, but it's now becoming prevalent in a large variety of applications – disinfection using ozone!

Ozone has a greater disinfection effectiveness against bacteria and viruses than chlorination. However, ozone is unstable and degrades over a time period ranging from a few seconds to 30 minutes. Because of its short half-life, it has to be generated on site by either corona discharge or electrolytic ozone generators. The primary benefits of ozone for disinfection are that it is effective over a wide pH range and rapidly reacts with bacteria or viruses in water; and it has a strong oxidizing potential with a short reaction time. The process does not produce any taste or odor, and does not add chemicals to the water.

Corona discharge ozone generators are the most common, due to their more economical capital cost and more general application effectiveness. A corona discharge system typically consists of the ozone generator itself, an ozone contactor, air or gas conditioning, and off-gas destruction (typically UV destruction). Ozone is created by applying an electrical charge to the air/gas which splits oxygen (O_2) molecules into individual atoms, which then combine with another oxygen molecule to form ozone (O_3). These systems can use either ambient air or oxygen gas canisters as a feed source. With a corona discharge ozone generator, ambient ozone in air monitoring is required to detect leaks.

Corona discharge ozone systems

Electrolytic ozone generators are typically used in high purity applications, as they generate ozone from the oxygen present in the water without interference from other contaminants. This method does not generate as high of a concentration of ozone, and it dissolves more readily in water. Therefore, it does not create the off-gassing that the corona discharge method does. The primary disadvantage of this type of generator is the initial cost of the equipment.

Electrolytic ozone generators

Because ozone is such a strong oxidizer, it is extremely effective against a wide variety of pathogens: bacteria, mold spores, fungi, viruses, yeasts, and algae. It can also degrade your system hardware, so be sure the materials of construction in your water treatment system are ozone-compatible. Ozone will degrade many elastomers (O-rings, seals, gaskets, etc.) as well as many plastic piping materials, RO membranes and ion exchange resins; so it's important to review the materials of construction in your system before implementing ozone as your disinfectant.

If you would like additional information on ozone generators, application or design considerations, please contact your ***Process Solutions, Inc.*** sales representative at **513-791-3338**.

Who Says It's Not Easy Being Green ?

If you would prefer to save a tree and receive our newsletter electronically, please email us at sales@psiwater.com and we'll add you to our electronic distribution list. Thank you!

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