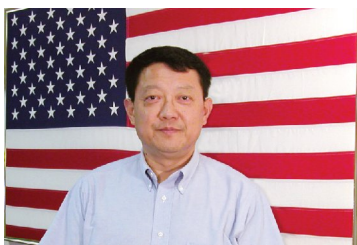


ASI TODAY

A newsletter for customers of Analytical Sensors & Instruments Ltd. Fall/Winter 2009

From the GP's Desk



Peter Cai, GP & CFO

Dear Customers and Friends:

Like many of you, we are looking forward to ending the year 2009 and have much higher expectations for the new year ahead. 2009 presented many companies around the world with new challenges. We feel fortunate to close the year within our targets.

At ASI we have been able to adjust our costs and spending to make the best of the down economy. Even with this careful eye on costs, we were still able to expand our headcount in some key growth areas like sales, R&D and engineering. 2010 is expected to be a stronger year than 2009 and our new staff, together with other employees, will enable us to develop some exciting new products, capabilities, and sales opportunities in years to come. In fact, we are setting the groundwork for many of these projects right now. We look forward to telling you about these new projects very soon!

Since the last ASI Today Newsletter, I was able to meet many new and current customers around the world. In the beginning of September, ASI exhibited at the Japan Analytical Instrument Manufacturers Association (JAIMA) Trade Show. This Tokyo, Japan show is very much like Pittcon in the USA. I was pleased to develop some new business opportunities in Japan and the surrounding region. We were even able to meet new US businesses at this show. Please do not hesitate to contact me personally if you have interest in attending this show next year and would like to know more about it.

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Process Electrodes for a Variety of Mission Critical Applications



Process, or “in-line” electrodes are a large part of ASI’s product offering. While much of our production includes proprietary designs, we do offer a wide assortment of process electrodes to meet applications from general purpose to industrial process monitoring to harsh or difficult measurement challenges.

Whether you are looking for a lower cost alternative to an existing design, or a new design to address a unique situation, ASI can assist you with your business objectives. The design elements that are important to the performance, durability and ease of maintenance are varied but typically include:

Mounting method and insertion specifications - If you are planning on measuring the solution inside a pipe or vessel, a threaded fitting such as 1/2-inch NPT or 3/4-inch NPT are some of the common mounting methods. If sufficient space is not available, or it is preferred to have a faster method or one that does not require a tool, there are other methods to consider such as twistlock or mounting adapters that uses o-ring seals. It is critical to ensure the sensing end of the electrode is properly positioned within the sample and will not obstruct, or be damaged by it. The electrode needs to be installed in a way that ensures the reference junction functions properly (gravity fed electrolyte) and that the sensing end does not allow the formation of

Process Electrodes continued on page 3...



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pH Electrodes continue to be one of the most widely used instruments for water analysis and the basis of the glass sensor technology is essentially the same as it was decades ago.

However, problems with the pH electrode can still be difficult to understand and troubleshoot. Some general guidelines to consider in troubleshooting a pH electrode include:

Environmental interferences - it is not unusual for areas with high electrical noise to cause erratic electrode readings. Much like an FM Radio antenna, the electrode and its cable can be a receiver for these electrical fields. ASI uses high quality cables with shielding to avoid such issues but these interferences could overwhelm the meter or even the best cable shielding. Use a Faraday cage or otherwise isolate the meter and electrode from such electrical noise to determine if it is having an effect on the system.

Improper storage or conditioning - The glass sensor pH electrode is a very reliable and accurate measurement system when properly cared for. Probably the most common problem that causes an electrode to have slow or unstable readings is an electrode that was stored improperly. The outer portion of the glass pH sensor has a "hydration layer" that, when in good condition, is the active part of the sensor. If it is allowed to dry out, or it is stored in a solution that leaches its active components, it may take much longer to respond or stabilize. In extreme situations or if this condition is prolonged or frequent, it may not be recoverable and would need to be replaced. The reference junction also benefits from hydration, since a dry junction could allow the formation of precipitates or crystals that could slow the salt bridge function. Proper storage and conditioning can vary by application but a general guideline is to ensure the electrode sensor is kept hydrated in a solution that contains sufficient salts to prevent leaching glass components but does not contain impurities or biologics that could contaminate or foul the membrane. Never store the electrode in DI Water! ASI ships all its pH electrodes with a soaking solution around the sensor. This solution is available for purchase or contact ASI's technical support for other solutions that can be used for storage situations.

Improper cleaning - Many pH electrodes can go their entire life without cleaning. In fact, cleaning should be done only when the electrode is known to have come in contact with dirty samples. Improper procedures or cleaning solutions can be detrimental to the electrode. Contact ASI's technical support for the proper procedures and solutions for cleaning.

...GP Letter continued from page 1

In October, I attended the Piscina (Pool & Spa) Exposition in Barcelona, Spain. While this industry was also hit hard in 2009, they too are looking forward to a stronger 2010. This show was also very encouraging for new business opportunities.

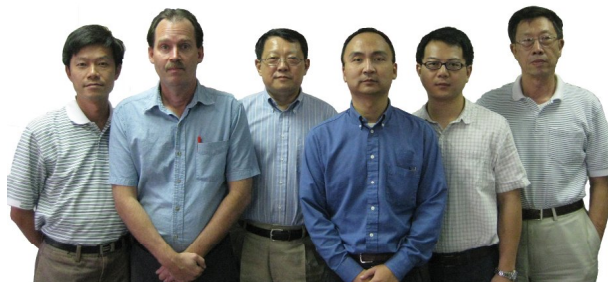
I look forward to meeting with even more of our customers in 2010. Our next exposition will be Pittcon in the first week of March, 2010 - please let me know if you will be there.

Thank you again for all your long time support. I would like to continuously praise the Lord even in this critical time.

Peter Cai
GP and CFO



ASI's DuoCheck pH a & ORP Tester is an invaluable, but under utilized tool for anyone that has questioned whether their electrode or meter is functioning properly. This simple device can be connected to your pH/ORP meter and will generate a set mV reading so the user can check the performance of the meter. Alternatively, you can connect your pH or ORP electrode to the DuoCheck, and determine if its mV output is in the expected range. Contact your ASI Account Manager to learn more about adding a DuoCheck to your order!



ASI's R&D Department has had a very busy 2009 and the new year will be even busier. This department is a collection of talents from our chemistry, engineering, and production areas and is headed by ASI's founder, Peter Cai. The scope of our R&D efforts includes improvements to existing technologies as well as the development of new ones. Some of the key individuals are:

Dr. Hua Mo received his Bachelor's degree from the Beijing Institute of Light Industry, and his Masters Degree in Analytical Chemistry from Tsinghua University in Beijing - one of the most recognized institutions in China. Afterwards, Hua worked in the Institute of Chemistry, Chinese Academia of Science as research fellow. After arriving in the U.S. he earned his Ph.D. Degree in Organic Chemistry from Rice University. Hua has five years of experience in process and research chemistry before he joined ASI in 2009. (photo position 4)

David Jin completed the five year undergraduate program in Beijing Electrical Power University where his focus was in Electrical Engineering: field of plant, network & electrical systems. Before coming to the U.S., David gained extensive experience in the design of petroleum and chemical plants. David has been with ASI for more than 10 years and has been involved in the design of many of ASI's core products. (photo position 6)

Don Bradshaw studied in Mechanical Engineering and has extensive training and over 25 years of experience in the plastic industry. His prior work with quality systems and experience at Toyota has been an asset to ASI's R&D efforts. Don joined ASI in 2008 and ensures manufacturability and production concerns are addressed in R&D projects. (photo position 2)

Drew Zhu received his bachelor's degree from Sichuan University, China. After coming to the U.S. with Lamar University in Beaumont Texas, he earned his Master of Science in Chemistry. Drew joined ASI in 2006 and actively manages the ASI lab alongside his R&D roles. (photo position 5)

Kevin Lin - Kevin earned his Master of Science in Bio-Industrial Mechanical Engineering from the National Taiwan University in Taipei, Taiwan. He has highly skilled research engineering experience in mechanical design and extensive experience as a mechanical, optoelectronics and process development engineer. He joined ASI in 2009 and is leading a couple of strategic new technology projects. (photo position 1)

...Process Electrodes continued from page 1

an air bubble within the sensor or around it. While most electrodes can withstand intermittent submersion, it is critical to define this situation including depth, duration and mounting. Typically the cable is the vulnerable point for water intrusion and needs to be waterproof or otherwise protected by a pipe or other method. Waterproof cable can be an expensive proposition. All electrodes will need to be calibrated or otherwise maintained so it is important to be able to shut off the sample stream during this process, or to consider a "hot-tap" insertion that allows you to isolate the electrode without interrupting the sample stream flow.

Electrode construction - Process electrodes are oftentimes exposed to harsh environments such as extreme temperatures, high pressure, or chemical compatibility issues. Materials such as Ryton body housings, porous teflon reference junctions and robust seals, and the use of gelled reference electrolytes are examples of methods that are employed to design robust electrodes.

Solution grounding - Some sample types may generate interferences due the flow or chemical properties of the solution. A solution grounding feature may be needed in these situations to overcome the interferences.

Cabling and distances - Many process electrode applications occur in environments with significant RF or EMF interferences that require a heavily shielded cable. Generally speaking, when the distance from the sensor to the meter will be greater than 25 feet, a signal amplifier (preamp) may be required to relay the electrode output accurately.

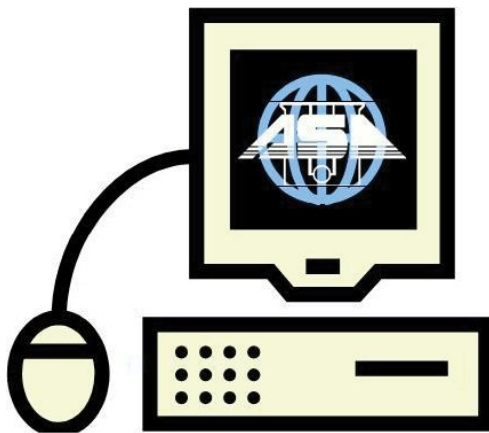
ASI can assist you with your process electrode application challenges and provide a design proposal that will overcome the problems. Contact your ASI Account Manager to learn more about our capabilities.



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Find ASI on the web!

Analytical Sensors & Instruments, Ltd can be found on the world wide web at our website:
www.asi-sensors.com

On our website you can find our company overview and contact information, technical resources, product information, Material Safety Data Sheets (MSDS), catalog downloads, our newsletter archive, and a wealth of other information. Check back often to catch the latest updates and new product information.

Later this year you will also be able to find us on the popular GlobalSpec website:

www.globalspec.com

GlobalSpec is the leading specialized vertical search, information services and e-publishing company serving the engineering, manufacturing and related scientific and technical market segments.

At the GlobalSpec site you will find many of our standard electrode models specified in the popular GlobalSpec format to make it even easier to find what you are looking for - either in standard configuration or customized to your needs.

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