

For Immediate Release

PendoTECH Single Use Process Sensors Reduce The Environmental Impact Of Critical Bioprocess Operations

There is an increasing trend in the biopharmaceutical manufacturing industry toward the use of disposables (e.g., flexible tubing and disposable bioprocess containers) in both clinical and commercial production. The polymer components found in PendoTECH's single-use sensor offer a stainless steel replacement that can drastically shrink carbon footprints. According to BioPharm International's *The Environmental Impact of Disposable Technologies*, disposability frees the user from the constant sterilization between batches and releases them from the high use of water and chemicals that can dramatically decrease water consumption by 87%.

While cumbersome pressure gauges and stainless steel pressure transmitters have been traditionally used in bioprocessing for pressure monitoring which in turn facilitates either manual or automated process control by making process adjustments based on the process pressure data.; consuming and heating large volumes of water to clean and sterilize stainless-steel equipment is more energy demanding than producing single use sensors. The pressure sensing chip installed in the PendoTECH plastic flow-through devices is manufactured using a silicone micromachined piezoresistive element in a Wheatstone bridge circuit. Having a sensor embedded into the wall of the fitting enables PendoTECH's Single Use Pressure Sensors to have an unobstructed flow path.

In addition to significantly reducing the risk of contamination, these plastic sensors can have a second life as an energy source after being used. With a heat value that is actually higher than coal, the plastic used in PendoTECH's Single Use Pressure Sensor waste is ideal for cogeneration. According to the U.S. Clean Heat and Power Association, cogeneration systems decrease energy use by almost 1.3 trillion BTUs/year. When single-use systems are incinerated, significant amounts of heat energy is produced. Rather than have the unused heat escape to the atmosphere, universities and hospitals are capturing waste heat and using it to make electricity onsite for their manufacturing facilities or to heat facility boilers. Pharmaceutical companies have also taken notice of the impact of waste on the environment and operational expenses. The rapid success of Bayer's Green IT Program (<http://www.bayer.com/en/climate.aspx>) and Pfizer's Environmental Sustainability Program (http://www.pfizer.com/responsibility/protecting_environment/environmental_sustainability.jsp) shows how the pharmaceutical industry's sustainability efforts are evolving. Shrinking operational expenses while conserving resources, companies are using new technology to make the seamless transition to green practices in even the smallest ways.

About PendoTECH

PendoTECH is committed to providing value-added products and services to companies in the biopharmaceutical industry for enhanced development and production of products derived mainly from biological systems. As the number of biologicals produced by cell culture increases and the industry matures, new technologies and process approaches are available for comparison to the existing ones for evaluation of enhanced production output and reduced cost of goods. Contact us at <http://www.pendotech.com/> or 609-799-2299 for more information.