



ATMI Introduces New Single-Use Bioreactor Systems for Improved Performance and Efficiencies in Manufacturing Cell-Based Products

Integrity(TM) Xpansion(TM) Systems Enable Large-Scale Cell Expansion and Recovery

DANBURY, Conn., Nov. 30, 2011 (GLOBE NEWSWIRE) -- [ATMI, Inc.](#) (Nasdaq:ATMI) today launched a new technology for enabling large-scale, cell-based manufacturing as the company unveiled its Integrity™ Xpansion™ Bioreactor Systems at the Cell Therapy Manufacturing Conference in Brussels, Belgium. The new line of bioreactors are part of the ATMI LifeSciences Integrity family of single-use technologies and have been especially developed for fragile adherent cell culture applications (such as stem cells) on a large scale. The Integrity Xpansion product line represents the first commercially-available bioreactors that support safe and cost-efficient large-scale (large volume) production of traditional two-dimensional (2-D) cell cultures with the advantage of cell culture parameter controls.

"It is essential that cell therapies can be made efficiently and effectively on a large scale for them to reach the market. Yet, it can be a challenge to achieve GMP standards during large-scale production because of a lack of efficient cell culture technologies — many of which can lead to bottlenecks and prohibitive costs," says Jose Castillo, the global director of cell culture technologies for ATMI LifeSciences. "The Xpansion bioreactors represent a solution for process industrialization for cell therapies. Both patient safety and GMP compliance have been factored into the system's design, as has operational simplicity. Space and cost requirements have been drastically reduced, enabling the user to operate in a manner that existing large-scale technologies cannot match."

The 2-D multiplate design of the Xpansion bioreactors offers the same cell environment as standard multitrays technology, but adds the benefit of a closed system for increased protection from potential contamination. In addition, critical cell culture parameters do not change using Xpansion systems, successfully mitigating risk during process scale-up for large clinical studies. It is these features that enable easy transfer from existing technologies to Xpansion systems at any stage of a clinical study. Moreover, Xpansion bioreactors offer quick scale-up to process design for flexibility and speed in both upstream and downstream processing. By also dramatically reducing the number of operations needed, safety is maximized and cost of goods can successfully be reduced by up to 40%.

Xpansion bioreactors are made up of stacked polystyrene plates within a closed system. Up to 180 of these plates can be stacked to produce a unit with a surface area of 11m². As the plates are close together, just 1.6mm apart, the entire bioreactor is about 60cm high and is 35cm in diameter, resulting in a completely closed, single-use bioreactor from vessel to sensor. The process is also successfully secured throughout the design, ensuring sterility and reducing the risk of contamination. The cell culture parameters, including pH, DO and temperature, are read using real time controls in order to allow process reproducibility and traceability. Xpansion bioreactor systems also monitor and control temperature, dissolved oxygen, pH, and media flow rate. The cell morphology and density could be monitored by digital holography.

Xpansion bioreactors integrate with the full line of ATMI technologies, including the Integrity™ brand of single-use technologies ranging from mixers to bioprocess vessels and bags. The Integrity platform provides dedicated technologies to support each step of cell therapy manufacturing from cell culture to cell concentration into a closed system. To learn more about the Xpansion Bioreactors and Integrity products, please click [here](#).

About ATMI

ATMI, Inc. provides specialty semiconductor materials, leading-edge materials development science, and high-purity materials handling and delivery solutions designed to increase process efficiencies for the worldwide semiconductor, flat panel, and life sciences industries. For more information, please visit <http://www.atmi.com>.

The ATMI, Inc. logo is available at <http://www.globenewswire.com/newsroom/prs/?pkgid=5254>

About ATMI LifeSciences

ATMI LifeSciences is a leader in single-use technologies, products and systems for mixing, storage, bioreactors, cell culture technology, fluoropolymer-based products, and custom-engineered, flexible packaging solutions. The company's cleanroom

manufacturing experience, combined with its fundamental knowledge of bioproduction — especially within cell culture — help drive development of specific single-use technologies that are well-adapted to process operations. All products comply with internal, industry and regulatory standards and many of their products are completely animal derived components free (ADCF). All ATMI manufacturing facilities house ISO Class 5 cleanroom conditions, follow European current Good Manufacturing Practices (cGMP) and are ISO9001/2008 certified. For more information, please visit www.atmi-lifesciences.com.

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