

November 11, 2020



Pressure BioSciences Awarded First U.S. Patent for Revolutionary Ultra Shear Technology Platform

Patented UST Platform, with Unique Ability to Prepare High Quality Commercial Scale Nanoemulsions, Expected to Significantly Impact PBI's Growth and Profitability in 2021

SOUTH EASTON, Mass., Nov. 11, 2020 /PRNewswire/ -- Pressure BioSciences, Inc. (OTCQB: PBIO) ("PBI" or the "Company"), a leader in the development and sale of broadly enabling, pressure-based instruments, consumables, and platform solutions to the worldwide life sciences and other industries, today announced the award of the first U.S. patent for its revolutionary Ultra Shear Technology™ (UST™) platform entitled "System for High Pressure, High Shear Processing of Fluids." This new patent (US 10,823,159) brings the Company's Intellectual Property ("IP") estate to a total of 26 issued patents.

UST was created to revolutionize the processing of immiscible liquids - usually processed into macro/micro emulsions - into high quality, highly profitable nanoemulsions. Emulsions are mixtures of two or more liquids (e.g., oils in water) that typically cannot be blended into each other without the addition of chemicals called emulsifiers (e.g., surfactants). Emulsions are used in thousands of products in everyday use, including food, medical products, pharmaceuticals, nutraceuticals, cosmetics, industrial lubricants, and even cannabis oil extracts (e.g., CBD). Scientific data indicate that improved absorption, higher bioavailability, greater stability, lower surfactant levels, and other advantages (such as more reliable dosing control) are better achieved with high quality nanoemulsions.

Dr. Edmund Y. Ting, Sr. Vice President of Engineering of PBI and the inventor on this patent, said: "Nanoemulsions have long been shown to exhibit improved absorption, higher bioavailability, and greater stability, while often requiring lower levels of emulsifiers than macro/micro emulsion products. Because of these significant advantages, nanoemulsions are currently the focus of numerous research efforts worldwide. However, cost-effective scale-up of high quality nanoemulsion processing at a commercial level continues to be quite challenging. Importantly, we believe that PBI's innovative and now patented UST platform can provide the key to commercial success for nanoemulsion products."

PBI's first UST-based processing system (the BaroShear K45) is planned for commercial release in the second quarter 2021. As previously disclosed, the Company has received pre-orders for 12 BaroShear K45 systems: deposits on these orders are due in the first quarter 2021. The Company believes that following its release, the patented UST processing platform could play a significant role in the creation and improvement of medical, consumer, and industrial products through its unique ability to prepare highly stable, high quality, water soluble nanoemulsions at a reasonable cost, and at industrial scale.

Dr. Alexander M. Lazarev, Chief Science Officer of PBI, commented: "We believe there are significant opportunities for room-temperature stable, economically-scalable nanoemulsion products worldwide. These include pharmaceuticals (such as drugs and vaccines) and premium dairy and other high-volume food products (like salad dressings), as well as cosmetics, nutraceuticals, and industrial materials (such as paints, coatings, and lubricants). We believe that PBI's vast experience and expertise in harnessing the power of high pressure, coupled with our new and growing UST Platform IP estate, has positioned us to be uniquely qualified to lead in this much-needed and important new area of commercially-viable nanoemulsification processing that blends otherwise immiscible fluids."

Mr. Richard T. Schumacher, President and CEO of PBI, said: "We are accelerating discussions with U.S., Canadian, and other companies, academic organizations, and government agencies that have expressed a strong desire to collaborate with PBI and acquire access to our patented UST platform. We are on course to establish collaborative development projects with several of these companies and research groups addressing different product and market opportunities. These programs should lead to revenue-generating products in 2021. We believe there are many industries that can benefit from UST-produced nanoemulsions and that UST will be an area of rapid and sizeable growth for PBI moving forward."

About Pressure BioSciences, Inc.

Pressure BioSciences, Inc. (OTCQB: PBIO) is a leader in the development and sale of innovative, broadly enabling, pressure-based solutions for the worldwide life sciences and other industries. Our products are based on the unique properties of both constant (i.e., static) and alternating (i.e., pressure cycling technology, or PCT) hydrostatic pressure. PCT is a patented enabling technology platform that uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels to control biomolecular interactions safely and reproducibly (e.g., cell lysis, biomolecule extraction). Our primary focus is in the development of PCT-based products for biomarker and target discovery, drug design and development, biotherapeutics characterization and quality control, soil & plant biology, forensics, and counter-bioterror applications. Additionally, major new market opportunities have emerged in the use of our pressure-based technologies in the following areas: (1) the use of our recently acquired, patented technology from BaroFold, Inc. (the "BaroFold" technology) to allow entry into the bio-pharma contract services sector, and (2) the use of our recently-patented, scalable, high-efficiency, pressure-based Ultra Shear Technology ("UST") platform to (i) create stable nanoemulsions of otherwise immiscible fluids (e.g., oils and water) and to (ii) prepare higher quality, homogenized, extended shelf-life or room temperature stable low-acid liquid foods that cannot be effectively preserved using existing non-thermal technologies.

Forward Looking Statements

This press release contains forward-looking statements. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed, implied or inferred by these forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "could," "would," "expects," "plans," "intends,"

"anticipates," "believes," estimates," "predicts," "projects," "potential" or "continue" or the negative of such terms and other comparable terminology. These statements are only predictions based on our current expectations and projections about future events. You should not place undue reliance on these statements. In evaluating these statements, you should specifically consider various factors. Actual events or results may differ materially. These and other factors may cause our actual results to differ materially from any forward-looking statement. These risks, uncertainties, and other factors include, but are not limited to, the risks and uncertainties discussed under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, and other reports filed by the Company from time to time with the SEC. The Company undertakes no obligation to update any of the information included in this release, except as otherwise required by law.

For more information about PBI and this press release, please click on the following website link: <http://www.pressurebiosciences.com>

Please visit us on Facebook, LinkedIn, and Twitter.

Investor Contacts:

Richard T. Schumacher, President and CEO, (508) 230-1828 (T)

Alexander V. Lazarev, Ph.D., Chief Science Officer, (508) 230-1829 (F)

Edmund Y. Ting, Sc.D., Sr. VP Engineering

📄 View original content: <http://www.prnewswire.com/news-releases/pressure-biosciences-awarded-first-us-patent-for-revolutionary-ultra-shear-technology-platform-301171028.html>

SOURCE Pressure BioSciences, Inc.