Hamilton, Ontario, Canada | Aubagne, France, August 23, 2021

McMaster, Sartorius Stedim Biotech team up to advance biomanufacturing processes with next-gen tech

Sartorius Stedim Biotech, a leading international partner of the biopharmaceutical industry, has entered into a partnership with McMaster University to improve manufacturing processes of antibody and virus-based treatments for diseases such as COVID-19, cancers, and genetic disorders.

Using a state-of-the-art multi-column chromatography system provided by Sartorius Stedim Biotech, the McMaster team will "perfect" a process for the purification of therapeutic viruses that is more effective and cheaper than those currently available. This will pave the way for new and more affordable treatments to reach patients with a variety of needs. "Teaming up with Sartorius Stedim Biotech is an exciting opportunity for McMaster Engineering. This research will push the envelope in leading advanced, cutting-edge research in bio-manufacturing," says John Preston, associate dean, research, innovation and external relations in the Faculty of Engineering. "Establishing industry-friendly, collaborative environments is critical in solving real-world problems."

This work aims to support the Sustainable Development Goals (SDG) set out by the United Nations, designed to give our people and planet a better future. More effective bio-manufacturing can make advanced biotherapeutics cost-effective and available to more people globally. "This partnership with McMaster University will lead to impactful research that will make important treatments available at a greater scale. We see this as a way to expand our research development and bring SDG-aligned pharmaceuticals to Canadian and global markets," says Brandon Corbett, research scientist at Sartorius Stedim Biotech.

David Latulippe, associate professor of Chemical Engineering, and Prashant Mhaskar, professor of Chemical Engineering and Canada Research Chair in Nonlinear and Fault-Tolerant Control, are leading this project with Sartorius Stedim Biotech. The collaboration will initially run for four years.

What is chromatography?

Chromatography is an essential purification technology in biomanufacturing. To produce biotherapeutics, scientists use a bioreactor with specialized cell lines and customized growth media. Next, the biotherapeutic must go through a series of purification steps, often with duplicate steps to satisfy the requirements of regulatory bodies.

Sartorius Stedim Biotechs' multi-column chromatography system uses parallel processing strategies to make the process more resource and cost-efficient. "Our ultimate goal is to perfect the downstream chromatography process by combining detailed experimental work with advanced process modelling

concepts," says Latulippe. "This way, we can control the outcome and fix the processes on site, as production is happening, so everything is always 'on spec'." Currently, monoclonal antibodies are the leading biotherapeutic being used to fight against COVID-19.

Training the next generation

As part of the partnership, Sartorius Stedim Biotech will provide student training opportunities at their research and development facilities in North America and Europe. Ian Gough, a graduate of McMaster's Chemical and Bioengineering program, has already started working on this project. Gough is a former member of the Summer Studentship Internship program from BioCanRx, a Networks of Centres of Excellence program. Claire Velikonja, a recent chemical engineering graduate from the University of Toronto, will join the team in September.

Both Gough and Velikonja received a Canada Graduate Scholarship from Natural Sciences and Engineering Research Council of Canada (NSERC) to provide additional support for their first year of graduate studies.

Current image files

www.sartorius.com/en/company/newsroom/downloads-publications
https://macdrive.mcmaster.ca/d/3318978a764e4418bb9f/

A profile of Sartorius Stedim Biotech

Sartorius Stedim Biotech is a leading international partner of the biopharmaceutical industry. As a total solutions provider, the company helps its customers to manufacture biotech medications safely, rapidly and economically. Headquartered in Aubagne, France, Sartorius Stedim Biotech is quoted on the Eurolist of Euronext Paris. With its own manufacturing and R&D sites in Europe, North America and Asia and an international network of sales companies, Sartorius Stedim Biotech has a global reach. The Group has been annually growing by double digits on average and has been regularly expanding its portfolio by acquisitions of complementary technologies. In 2020, the company employed more than 7,500 people, and earned sales revenue of 1,910 million euros. www.sartorius.com

About McMaster University

Ranked among the world's top engineering schools, the Faculty of Engineering plays a significant role in helping McMaster University earn its reputation as one of Canada's most innovative universities. Our focus is on experiential, problem-based learning, and our interdisciplinary approach to collaboration results in smarter insights, groundbreaking ideas, and greater optimism. This approach is helping us create a Brighter World. www.mcmaster.ca

Contact

Sartorius
Timo Lindemann
Spokesperson
+49 (0)551.308.4724
timo.lindemann@sartorius.com

Follow Sartorius on Twitter **@Sartorius_Group** and on LinkedIn.