

Aston University and Mondelēz International Partner to Reimagine Food Engineering Technologies

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Aston University and Mondelēz International have launched a research and innovation partnership to develop filtration-based technologies that can fine-tune the flavours, nutrients and aromas of food.

The collaboration brings together membrane science experts in the Aston Institute for Membrane Excellence (AIME) with the global confectionery and snacks manufacturer's Bournville-based R&D team.

It will be the first time that AIME's expertise in biological and industrial membranes has been applied within the food sector. The team will explore a range of applications for next-generation filtration techniques to support new approaches in food engineering. These were originally developed at Aston University for water and waste processing through the BIOMEM and MEMetic projects.

Through PhD and research projects supported by Mondelēz, AIME researchers will focus on harnessing taste receptor proteins found on the tongue. These will be used to develop experimental techniques that can capture and filter specific compounds in food, like those responsible for flavour or aroma.

Once developed, the technology has several potential uses. These include capturing and enhancing highly desirable food aromas, or removing unwanted compounds during production, such as those responsible for bitterness, so high-cocoa chocolate can be made without the need for additional sugar.

The partnership between Aston University and Cadbury owner, Mondelēz, underscores both organisations' commitment to anchoring innovation in the West Midlands, supporting food enterprise in the region where Cadbury's legacy began. The research aims to advance food chemistry and engineering to transform how food and snacks are developed with highly distinctive flavour profiles.

Professor Alan Goddard, AIME training and industry lead at Aston University, said, "AIME's strong track record and technical capability in extracting, stabilising and engineering membrane proteins into new industrial technologies form the foundation of a collaboration that could fundamentally change how the properties of food are engineered. This partnership is the first to apply Aston University's advances in membrane science to pioneer commercially viable techniques in food manufacturing."

Leesha Edwards, R&D senior process engineer at Mondelēz International, said, "As a global company committed to driving breakthrough process technology in the food industry, we recognise the value of partnering with local hubs of scientific expertise and talent. By bringing together the world's largest chocolate R&D centre in Bournville with nearby Aston University experts, we will explore technological advances that benefit both our products and consumers and the local community in the West Midlands. Together, we look forward to developing ways to create exciting new flavours that cater to a range of different tastes."