

# Meet the scientists making plant-based foams more stable

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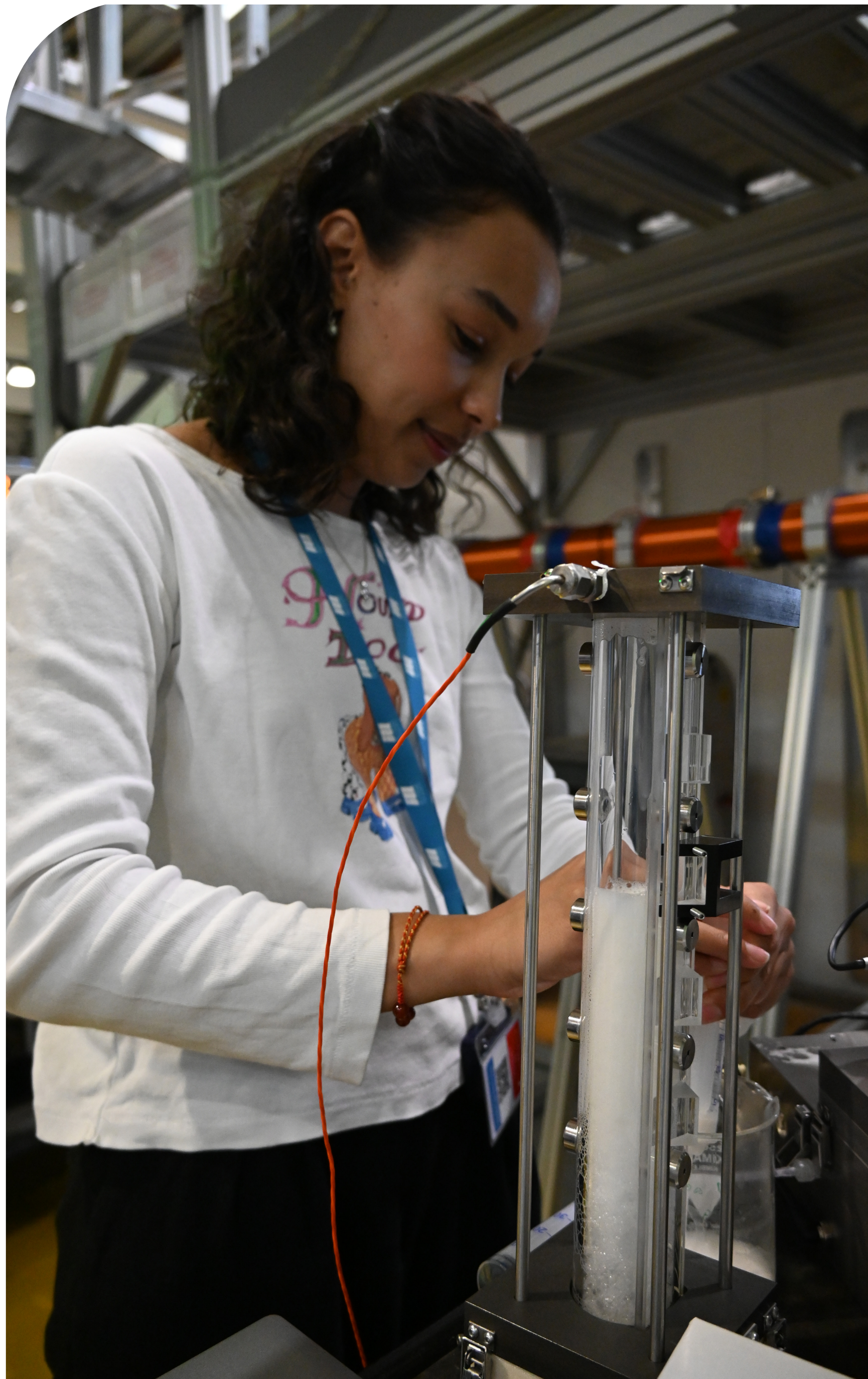
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From airy cakes to rich cappuccinos, food foams are essential to texture in many products.

As demand grows for more sustainable ingredients, scientists are investigating how plant-based proteins can make stable, appealing foams.



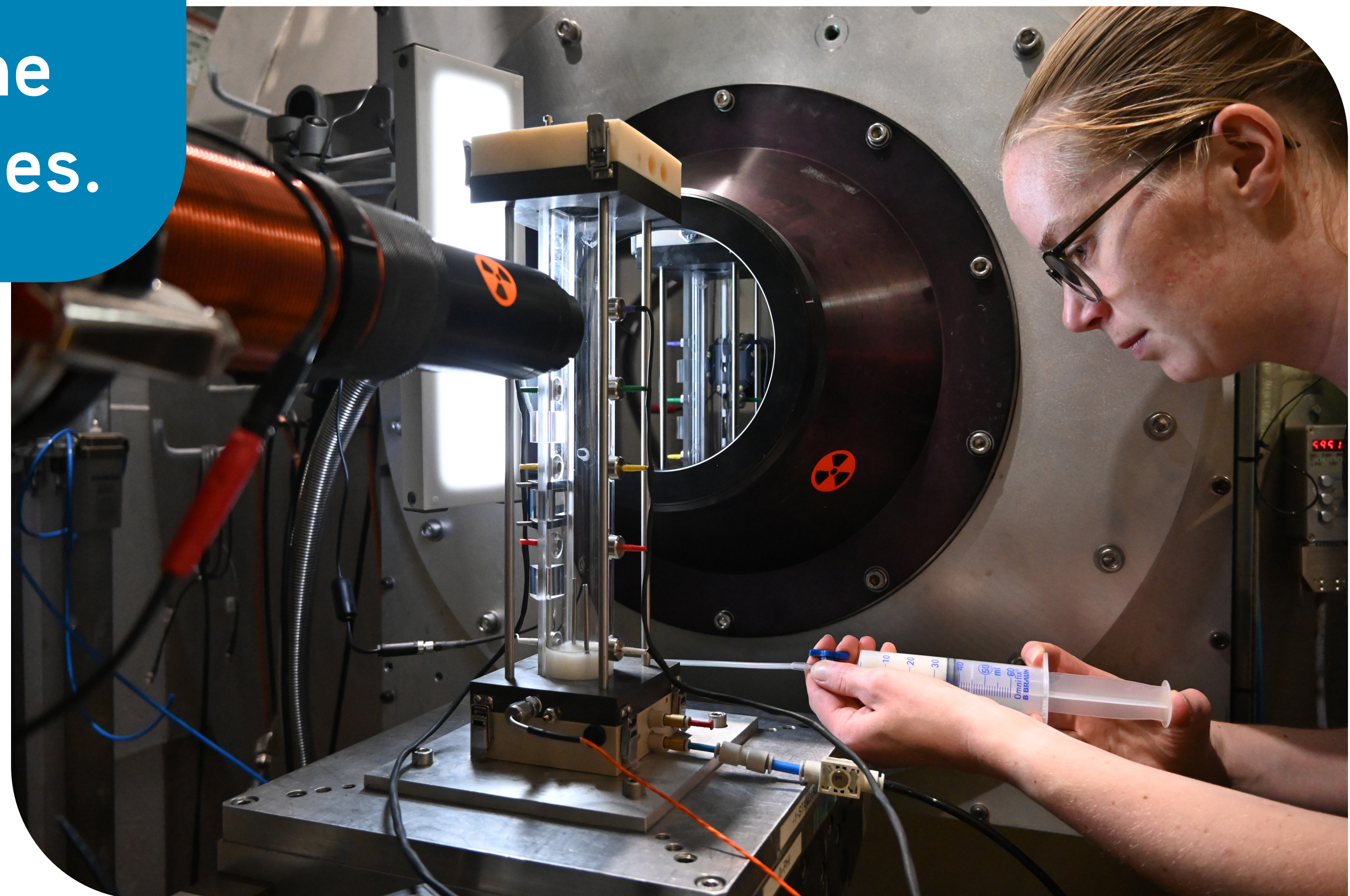


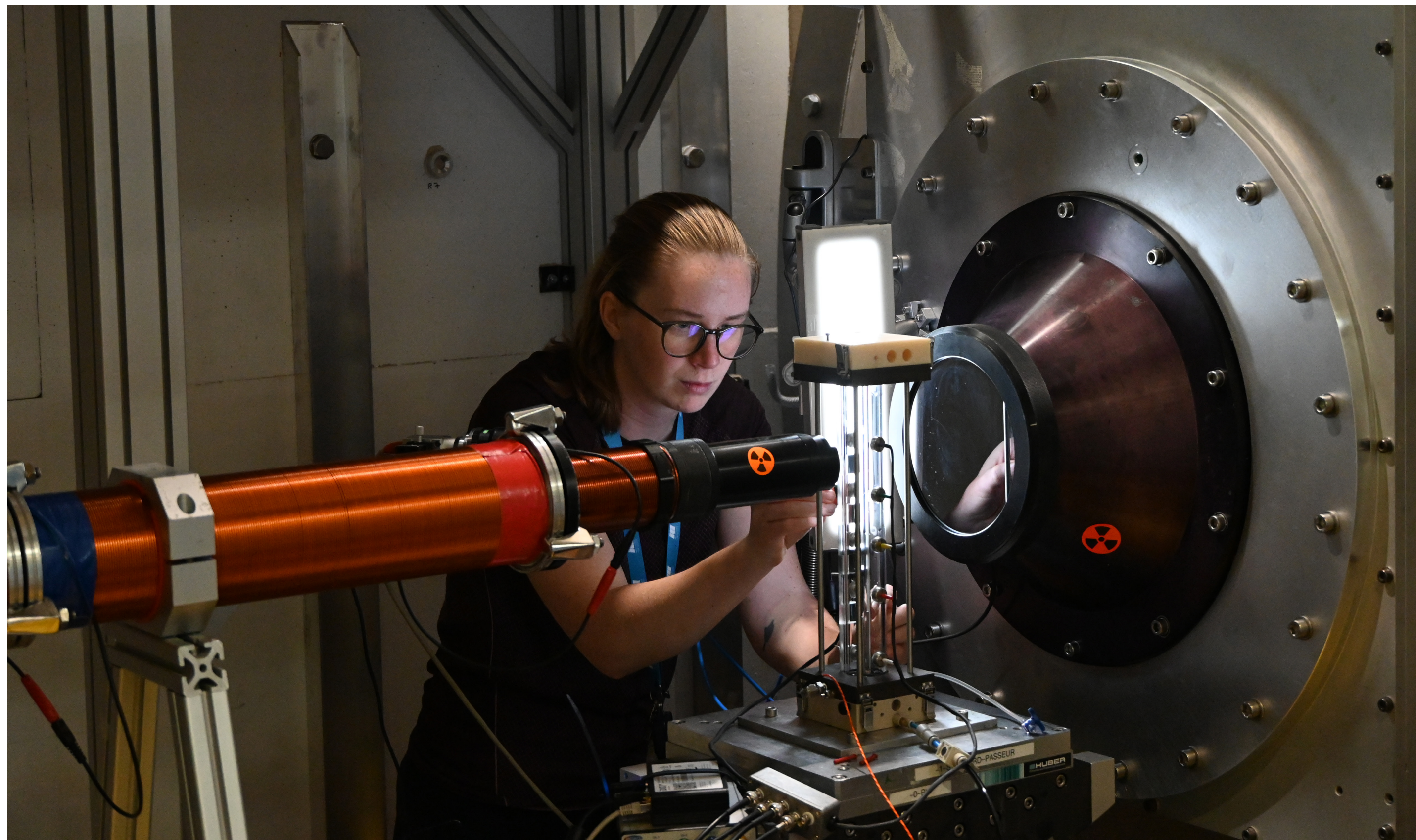
To understand what makes plant-based foams stable, the researchers compare faba bean protein with two animal-based references: egg white and whey.



Faba bean is nutritious and more sustainable, but its foams are harder to stabilise.

The question is what happens between the air bubbles as the foam forms, ages and collapses.



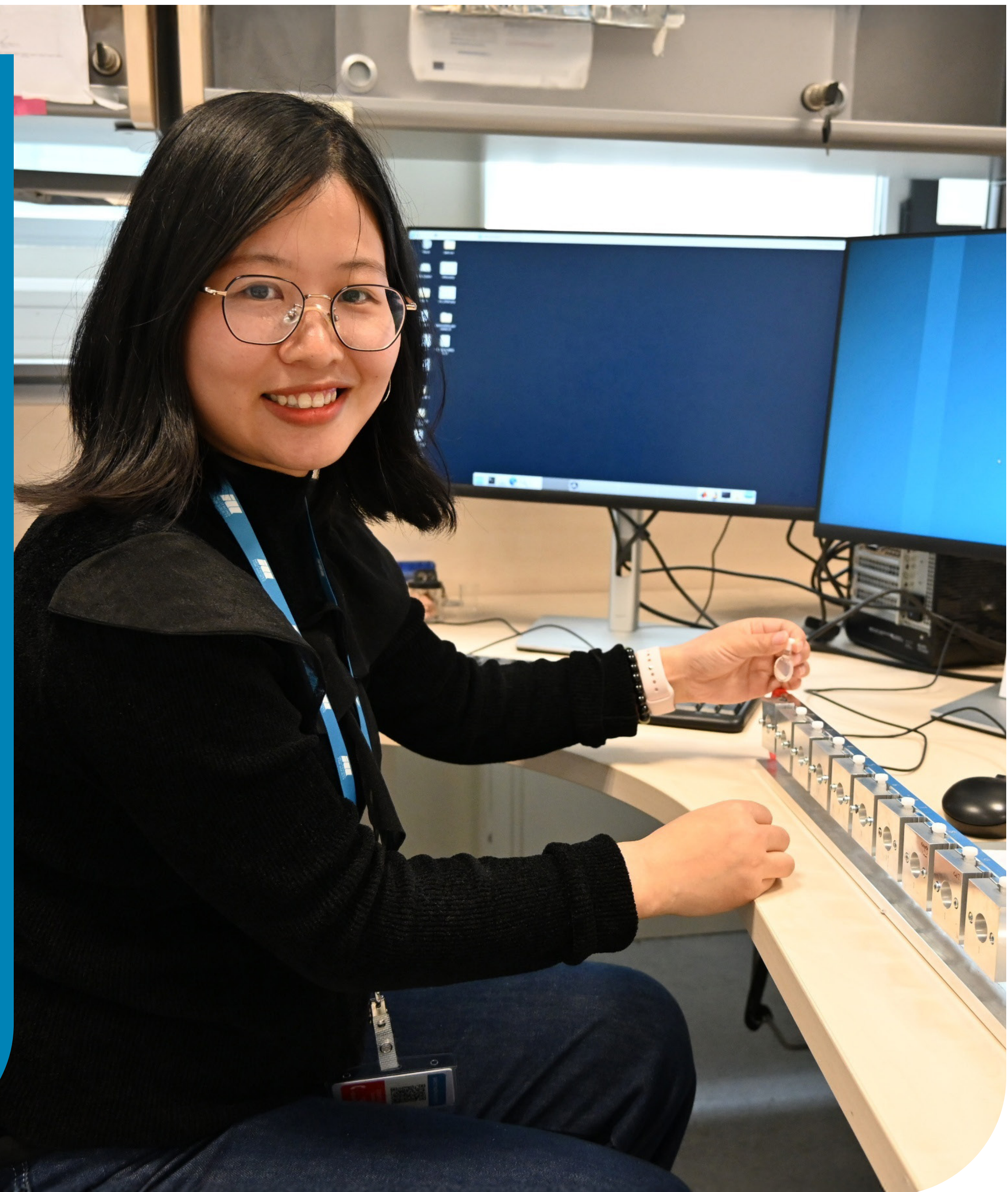


Foams are multiscale systems. Neutrons help scientists link the structure of a foam with how it behaves over time, revealing why some protein foams remain stable while others collapse.



“ D33 lets us follow foams as they form and collapse, in real time and across length scales. With SANS, we measure nanoscale liquid film thickness between air bubbles, while imaging helps us follow visible changes in the foam structure at the microscale and above. ”

Ruifen Li



The challenge is not only replacing ingredients for more sustainable alternatives, but also recreating the structure, stability and texture that make the food enjoyable.

Which recipe would you reimagine with plant-based ingredients?

