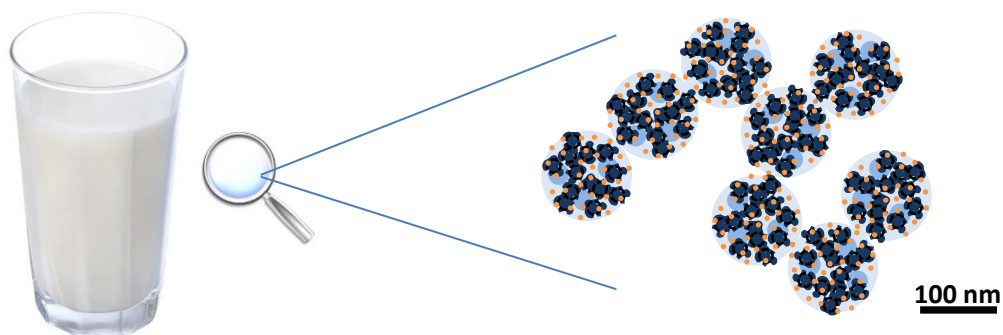


## Adding value and stability to fermented milk drinks

Fermented milk based protein beverages is a successful consumer product. However, these low-pH beverages are inherently unstable and subject to macroscopic phase separation. These undesired effects can be remedied by adding natural biopolymers as stabilizers. As a global company with strong emphasis on R&D, DuPont Nutrition and Health are at the forefront of understanding and providing natural food ingredients. Through neutron- and X-ray based small-angle scattering experiments (SANS and SAXS) performed under the NXUS project at leading large-scale facilities, the structure and interaction of molecular assemblies in fermented milk beverages have been investigated and characterized.



Protein particles (casein micelles) were investigated through the NXUS project, providing information down to the nanometer level on their size, shape, composition, aggregation and the effect of added stabilizers.

The combination of X-rays and neutrons has allowed NXUS scientists to describe how two different pectin stabilizers affect the milk protein particles in solution from the micrometer to the sub-nanometer scale. In turn, these results have enabled DuPont to further understand the mechanistic aspects of their stabilizers on a molecular level. Furthermore, the project has demonstrated the power and applicability of neutrons and X-rays to provide valuable knowledge for the food industry.



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