

Unilever teams with STFC to model innovative product R&D

Multi-scale modelling

At a glance

The computational science expertise of STFC Daresbury Laboratory is to play a key part in enabling global giant Unilever to research and develop innovative new products for their customers.

STFC scientists will be using their world-class capabilities in modelling and simulation to develop new software tools that will speed up the development of new and more efficient products across Unilever's personal care range.

John Conti Ramsden, Director of the KCMC said: "This project is a great illustration of the growing importance of modelling and simulation to product and process innovation in formulated products - and how the combination of modelling, with advances in experimentation, will enable new possibilities for product design."

Approach

The research, with Unilever's R&D team at Port Sunlight, will use the Laboratory's supercomputers to try to develop special software tools that can predict how the different ingredients will interact with each other.

It is hoped that this work will make it possible for product modellers to run simulations in a more timely fashion and increase their understanding of how different ingredients can be mixed and processed efficiently. If successful, this breakthrough will enable Unilever to improve products for consumers using environmentally friendly manufacturing methods.

Solution

The collaboration has been made possible by the Knowledge Centre for Materials Chemistry (KCMC), a national centre of expertise that aims to drive industrial growth for the UK chemistry-using industries through the co-ordination, development and exploitation of leading edge materials chemistry research.

Unilever spokesperson Dominic Tildesley said: "Product formulation is at the heart of our business and we are delighted to be working with one of the best computational modelling centres in the world to innovate more quickly and efficiently for our consumers."

Dr Richard Blake, Director of Computational Science and Engineering at STFC Daresbury Laboratory said: "We are delighted to be working with Unilever. STFC Daresbury Laboratory is well-known for its world-class computational science expertise in modelling and simulation. The personal care products we all use every day, such as shampoo and toothpaste, are actually very high-tech and are made up of a number of complex, structured materials...."

Benefits

"...The chemical industry is one of the UK's largest manufacturing sectors and it is vital for companies like Unilever to invest in research and development to be able to innovate and grow. We hope that the results of this research will pave the way for further advances in materials chemistry which will benefit consumers, the environment and the wider economy

