EPSOM & EWELL TIMES
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Current

ISSN 2753-2771

EPSOM & EWELL TIMES

From the Cosmos to Commerce: University of Surrey Leads the Way

12 January 2026

The University of Surrey has been showcasing a remarkable breadth of achievement in recent weeks, with major advances announced across fundamental science, international collaboration, digital trade policy and lifetime academic excellence.

From unlocking the origins of the universe's rarest elements, to shaping the future of UK trade infrastructure and celebrating world-leading research careers, the University's latest announcements underline its growing national and international impact.

Unlocking the universe's rarest elements

Surrey scientists are leading a new £215,100 international research project that aims to transform understanding of how chemical elements are formed during extreme cosmic events such as supernovae, neutron-star collisions and X-ray bursts.

Funded by the Royal Society's International Science Partnership Fund, the three-year project brings together researchers from Surrey, Kyushu University and Japan's world-leading RIKEN laboratory. The team will develop and deploy cutting-edge instruments capable of measuring some of the rarest and most unstable atomic nuclei ever studied.

These exotic isotopes do not exist naturally on Earth and can only be created briefly in advanced physics laboratories. By measuring their mass and decay rates for the first time, researchers hope to refine theoretical models of nuclear structure and gain new insight into how the heaviest elements in the universe are formed.

Experiments will take place at RIKEN's Rare-Radioactive Isotope Ring, a unique facility that allows repeated observation of these short-lived nuclei. Surrey researchers will play a central role, leading the design and testing of advanced detector and data-acquisition systems in the UK ahead of the experimental programme in Japan.

The collaboration is also expected to strengthen scientific ties between the UK and Japan and reinforce the UK's position at the forefront of nuclear physics research.

Warning over UK digital trade and border fragmentation

In a very different field, new research from Surrey Business School and the Centre for the Decentralised Digital Economy has issued a stark warning that the UK risks falling behind global competitors in digital trade unless urgent action is taken.

The study argues that the UK's digital border initiatives are fragmented, with no single organisation responsible for coordinating legislation, technology platforms and end-to-end border processes. As a result, businesses face repeated data requests, delays and uncertainty, increasing costs rather than reducing friction.

Researchers examined UK trade and border policies since 2017, including the 2025 UK Border Strategy, recent digital trade legislation and multiple government pilot projects. Drawing on international case studies and academic research, the team proposes a collaborative governance framework to guide reform.

The report calls for the government to give one body a clear mandate to orchestrate policy, digital platforms and data standards across departments. It argues that, with the right leadership, the UK has a window of opportunity to create a new digital "silk road" for trade, enabling trusted data sharing that benefits smaller firms as well as multinationals.

Lifetime achievement recognised in materials science

Surrey's excellence in research was further highlighted by the announcement that Professor Joseph Keddie, Professor of Soft Matter Physics, has been awarded the 2026 Sir Eric Rideal Award for lifetime achievement in colloid and interface science.

Jointly awarded by the Royal Society of Chemistry and the Society of Chemical Industry, the prestigious honour recognises sustained and distinguished contributions to the field. Professor Keddie is internationally known for pioneering work on polymer colloids, sustainable materials and so-called "living materials", with applications ranging from coatings and adhesives to wastewater treatment and bioremediation.

Over a career spanning more than three decades, he has authored more than 150 academic publications, holds multiple patents and co-authored the influential book *Fundamentals of Latex Film Formation*. His work at Surrey has previously been recognised by major awards from both the Institute of Physics and the Royal Society of Chemistry.

Professor Keddie will deliver the Rideal Lecture, titled *More than Watching Paint Dry*, on 8 April 2026, presenting highlights from his research including self-layering coatings and carbon-storing "living paints".

A university with global reach

Taken together, the announcements paint a picture of a university operating at the cutting edge across disciplines: advancing fundamental science on a global stage, influencing national policy debates, and nurturing research careers with lasting international impact.

For Surrey residents, the achievements reinforce the University of Surrey's role not only as a local institution, but as a centre of innovation and expertise with reach far beyond Guildford.

Sam Jones – Reporter