



L-R: Joshua Sisskin, First Secretary of the Embassy of the United Kingdom in Berlin, and Dr Ulugbek Azimov of Northumbria University

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Global recognition for groundbreaking green battery technology

A biodegradable battery developed by researchers at Northumbria University has won a major international prize for its potential to transform the future of sustainable energy.

The pioneering green battery, known as the BioPower Cell, has been awarded a prestigious [Green Product Award 2025](#), competing with around 2,000 applications from over 60 countries. The award celebrates sustainable

products and ideas that combine innovation, design and commercial potential.

Developed using fully biodegradable materials, the battery offers a clean, eco-friendly alternative to conventional energy storage. Unlike traditional batteries, it contains no lithium, cobalt, nickel or rare earth metals – materials that are often difficult to recycle and damaging to extract. Even more impressively, when the battery reaches the end of its life, it can be safely repurposed as a fertiliser, helping improve soil health and cutting down on waste.

The award was presented at a high-profile ceremony at the Swedish Embassy in Berlin, hosted by Green Product Awards Director Nils Bader and the UK Embassy's First Secretary, Joshua Sisskin. The judging panel praised Northumbria's project for its exclusive use of organic materials and its versatility, with potential applications in smart homes, green buildings and off-grid communities.

[Dr Ulugbek Azimov](#), Associate Professor in Mechanical Engineering and lead researcher, said: "We're proud to receive international recognition for our green battery technology. This innovation tackles two major challenges: reducing the environmental harm of traditional batteries and offering a genuinely sustainable solution for large-scale energy storage."

"By 2030, the world could face an overall shortfall of over one million tonnes of lithium. Recycling lithium-based batteries is expensive, energy-intensive, and environmentally damaging. Our battery is different – it's made entirely from organic waste, available globally, and can cut battery waste by 50%, energy costs by 80%, and carbon emissions by 60%. It's a step toward affordable, green energy for everyone."

Northumbria's success at the [2025 Green Product Awards](#) highlights its leadership in environmental innovation and design-led sustainability. This breakthrough reflects Northumbria's broader commitment to sustainable research and climate-focused solutions.

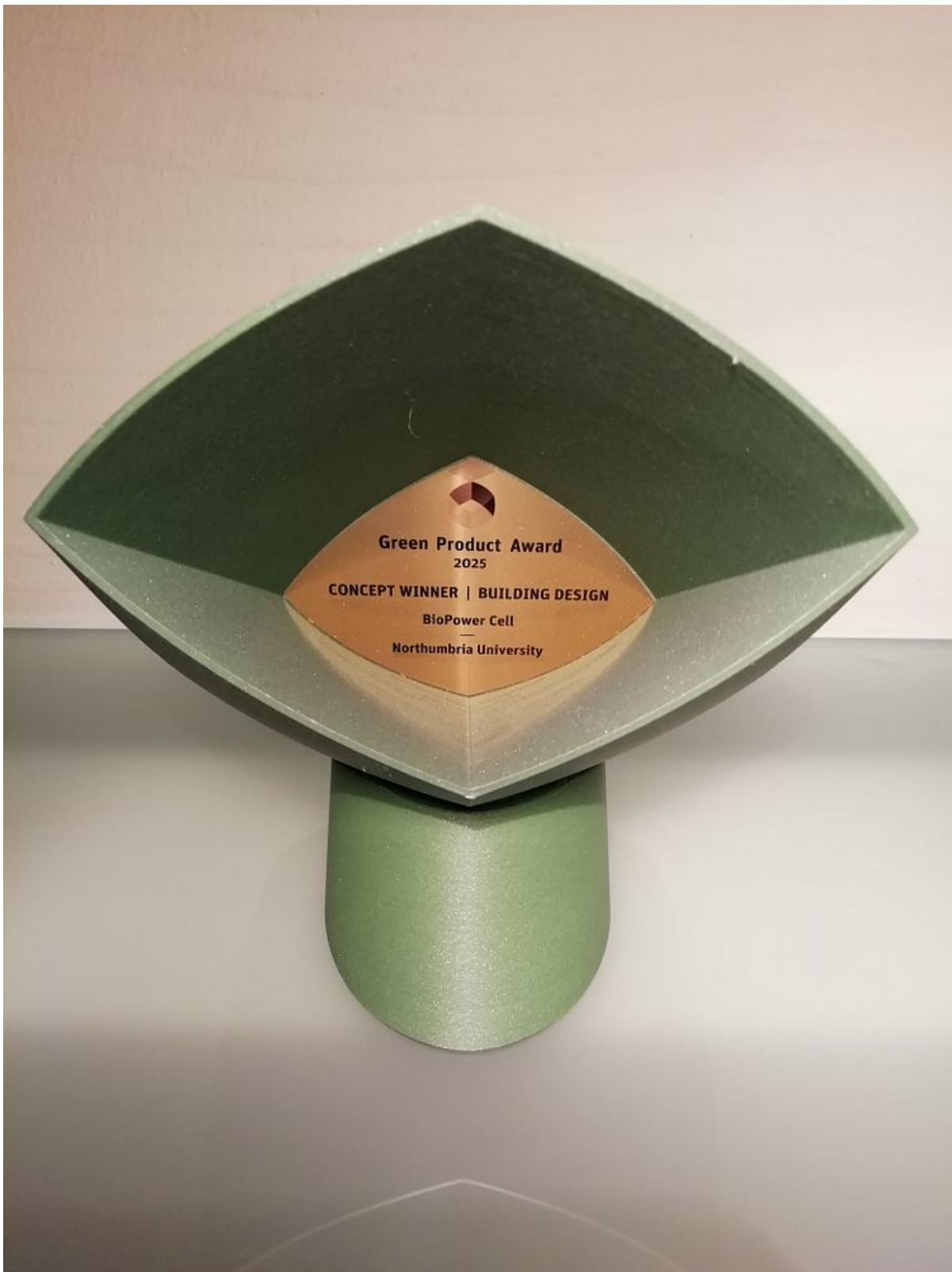
The Green Product Awards judges noted that the entries this year were of a very high quality and demonstrated high level of innovations. Speaking about Northumbria's BioPower Cell project they said: "The exclusive use of organic materials makes the batteries a sustainable alternative that operates without

rare earths and other critical materials. Due to their intended construction, the cells can be used flexibly, thereby multiplying the possible applications.”

Dr Azimov secured funding to through Northumbria University and a [Northern Accelerator](#) proof-of-concept grant to develop the battery prototype. Northern Accelerator is an innovative collaboration between the North East's universities to commercialise research and boost the region's economy.

The project has also been recognised by [Innovate UK](#), with Dr Azimov selected for their ICURe and ICURe Exploit programmes – competitive initiatives that support the commercialisation of university research.

Dr Azimov and his team are now working towards launching a spinout company to bring the BioPower Cell green battery to market.



UNIVERSITY OF THE YEAR 2022 (Times Higher Education Awards)

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Two thirds of Northumbria's undergraduate students come from the North East region and go into employment in the region when they graduate, demonstrating Northumbria's significant contribution to social mobility and levelling up in the North East of England.

Find out more about us at www.northumbria.ac.uk

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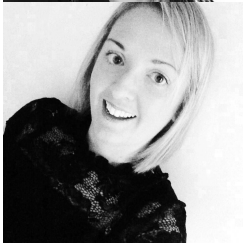


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