



## Nzomics: Northumbria researchers help large corporates improve their products

### Organisation Overview

Nzomics Biocatalysis

Nzomics Biocatalysis was set up over 10 years ago by Northumbria University researchers, and offers products, services and expertise to those companies looking to use industrial biotechnology to create sustainable, resource efficient and IP rich chemical processes. Nzomics is a supplier of custom-made enzymes using unique sequences harvesting from natural genomic resources which can be further optimised by the latest and most efficient directed evolution techniques.



### The Challenge

When compared with conventional catalysts, which are often based on precious or rare-earth metals, biocatalysts are based on naturally sourced enzymes and allow companies to run their processes at lower temperatures, lower pressures and in a less caustic environment. Enzymes also often react in a very specific way, enabling chemical companies to manufacture compounds that are not possible with more traditional means. The advent of genome sequencing and the invention of molecular biology tools have enabled the translation of primary amino acid sequence from a public database to pure expression in a cell factory in a matter of weeks. Researchers from Northumbria University realised the potential of enzyme technology as an economically viable solution to many chemical problems.

### Solution

Due to these advances in genome sequencing and molecular biology tools, plus the economic viability of the technology, researchers at Northumbria University's Department of Applied Sciences set up Nzomics as a service for businesses. The service has consulted widely to businesses around the world, it develops biocatalysts that enable pharmaceutical and chemical companies to run their processes in a more environmentally friendly and cost-effective way.

### Impact

The biocatalysts developed at Nzomics have applications in a range of industries including pharmaceutical, fine chemical, food and biofuels. The company has worked with a diverse range of clients, including specialist companies such as Chemoxy and Prozomix. Nzomics' work has had an impact on a variety of companies, from SMEs to large pharma, and has facilitated high-value manufacturing in the UK.

"Not only do we offer a cost-effective and more environmentally-friendly alternative to conventional catalysts, we also enable customers to make their own catalysts rather than be dependent on the continuously fluctuating global precious and rare-earth metal markets. This gives our customers security over supply."

**Justin Perry, Commercial Director - Nzomics.**

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