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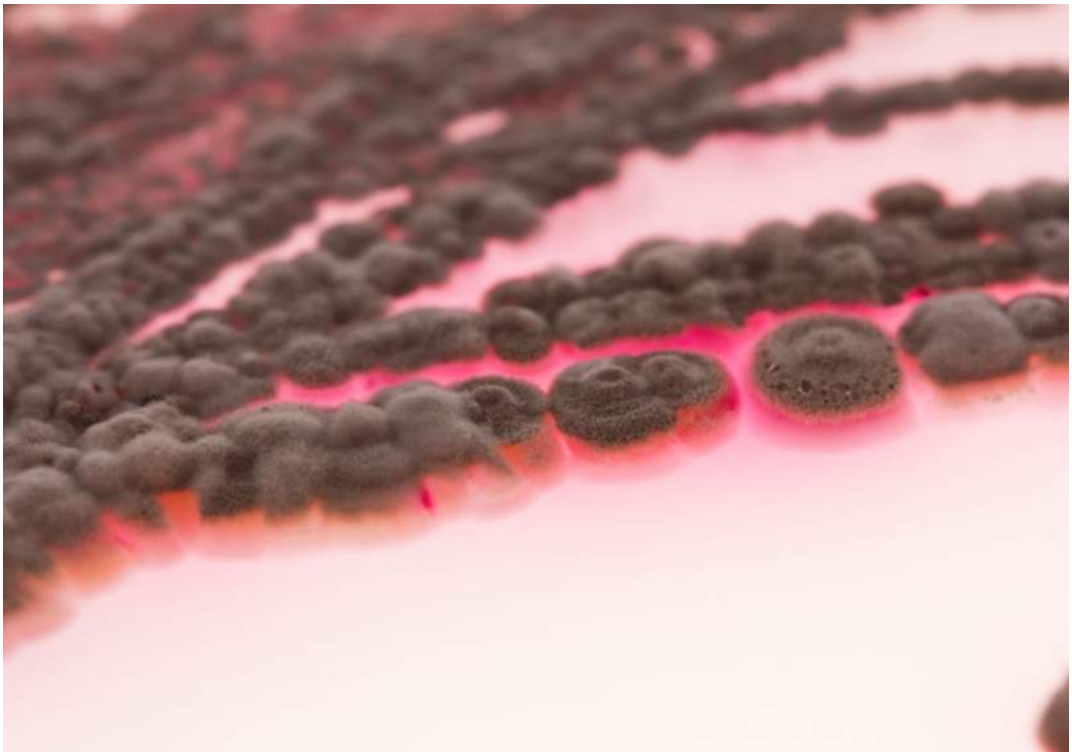
DESIGN BY DNA

Biodesign pioneer Natsai Audrey Chieza launches Faber Futures

'Biology is our next technological frontier.'
–Natsai Audrey Chieza



The Rhizosphere Pigment Lab, 2013.

In 2017, Natsai Audrey Chieza stood before a crowded TED auditorium and outlined her vision of a future in which the things we make and use in everyday life are not extracted and manufactured by humans, but created in collaboration with the living systems of nature.

Now, less than a year later, Natsai has brought that future another step closer with the launch of Faber Futures – a biodesign lab and creative research agency that taps into the intelligence of nature to develop new materials and methods of making.

Founded on the belief that the future of our world is dependent on the transition to a circular design economy, Faber Futures exists to discover, explore and develop methods of working with bacteria, fungi and algae to grow sustainable materials, products and services. It draws upon an international network of biotech labs,brands and institutions in every sector to implement what Natsai calls 'a critical and creative approach to the design of biology'.

The launch of Faber Futures comes at a time when more and more manufacturers are looking at ways to shift their processes towards achieving sustainability and the circular economy, and when an emerging

synthetic biology industry is introducing an array of exciting and potentially transformative biological materials. By building a bridge between the two, Faber Futures aims to play a key role in driving innovation in developing scalable and sustainable mechanisms of synthesis and planet-centred product development.

A new website launched in June 2018, faberfutures.com, offers an introduction to scope and scale of the lab's mission and the far-reaching implications of its research, as well as details of its projects to date. These range from co-founding and curating the inaugural creative residency programme at Massachusetts biotech lab Gingko Bioworks, to a Science Gallery Dublin commission exploring the relationship of individual plants with the microbiome of the rhizosphere in their soil and therefore the colour-producing organisms that live within it. Living Colour

Faber Futures has evolved from Project Coelicolor – Chieza's ongoing investigation of the viability of using bacteria to dye textiles. Begun in 2011 in collaboration with Professor John Ward of UCL, the project harnessed the pigment-producing abilities of soil-dwelling organism *Streptomyces coelicolor* to create colourfast textile dyes without the use of chemicals, and with a vastly reduced water requirement, compared to fashion-industry standards.

Over the years, Natsai and her lab team built upon their findings, exploring how adjustments to lab conditions such as temperature, pH and the incubation period could influence the outcome of the process. The result is a series of design-driven protocols engineered to achieve specific aesthetic and performance-related material outcomes – effectively merging design thinking and biology to make with – not from – nature itself.

(Left and righ): Streptomyces coelicolor, (Centre) Natsai Audrey Chieza, photography by Toby Coulson

'I think that culturally, and specifically in the industrialised global north, there's a collective realisation that working with nature may be a more holistic approach than extracting from nature. Scientific discoveries on the link between our microbiomes to our gut and brain health illustrate that to make with life is not just about building things from living things – it's making sure that when we intervene on living matter, we are actually thinking about the system in which that technological power exists. Through the projects we are working on right now, we engage with the ecological, economic, and societal parameters of industrial biotechnology. We believe that we have an unprecedented opportunity to work with biology to reimagine our terms of engagement with it: to re-think the kind of relationship we wish to have with nature.'

– Natsai Audrey Chieza, founder, Faber Futures

Today, Faber Futures takes the findings and thinking behind Project Coelicolor and uses them as a template for integrating biodesign systems into every sector of making – from fashion and textiles to automative and beverage industries. The products materialised through its network of labs not only possess aesthetic value in themselves as design objects, they also act as proof of concept for new methods and technologies on the wider industrial scale.

Although the enterprise has been driven by the need to address the ecological challenges faced by the modern world – including climate change and resource depletion – the goal goes beyond sustainability. For Natsai and her network, it is not enough simply to maintain the world as it is; Faber Futures seeks to unite biology, design and technology to find and implement pathways to a future in which all life on earth can flourish and thrive.

faberfutures.com

Notes for Editors

About Natsai Audrey Chieza

Operating at the intersection of design and biotechnology, Natsai Audrey Chieza is graduate of Central Saint Martins' MA Material Futures, and an internationally recognised authority in the rapidly emerging field of biodesign. Her work incorporates the co-creation of new materials, products and services with living systems; the development of novel biofabrication processes; and the implementation of innovative design strategies for an emerging circular bioeconomy. For Chieza, designing with biology presents unique opportunities to address significant ecological challenges, squaring the circle of sustainable production and finite resources.

Driven by a whole-systems approach to innovation, her interdisciplinary practice engages industry, institutions and society at large. In her TED Talk, Chieza sets out an agenda for a pollution-free future of fashion, pioneering work in the development of bacterially derived biopigments for use in dyeing textiles. She has exhibited these works at Bauhaus Dessau Foundation, TRESOR Contemporary Craft with the

Crafts Council, the V&A, the Science Gallery Dublin, and Fondation EDF, among others. Listed as one of OkayAfrica's 100 Women for her work in STEM, Chieza has spoken widely about her vision of a biodesigned tomorrow, appearing at SXSW Interactive, Biofabricate Synbiobeta and more, and has taught on biodesign programmes at Bartlett School of Architecture and Central Saint Martins. In 2018, she launched the Ginkgo Creative Residency with Ginkgo Bioworks in Boston MA, as a curator and mentor on the programme – and founded Faber Futures.

For more information about Faber Futures, images of its work or interviews with founder Natsai Audrey Chieza, please contact Dorothy Bourne at dorothy@zetteler.co.uk or on +44 (0)7939 200519.