

Bringing Chemistry to Life

a podcast series

ThermoFisher
SCIENTIFIC

Season 5, Episode 2

AI and the man catalyzing a bio-revolution



Episode abstract

Protein biology has always been grounded in understanding the relationship between structure and function but how we determine structure has changed dramatically. While it's still common to crystallize a protein for X-ray diffraction and then back calculate its structure, supercomputing-powered, AI-driven tools have revolutionized approaches to getting a protein structure! These new techniques are finding use in diverse applications from drug discovery, protein engineering and biocatalysis, which is why talking with this episode's guest is so interesting.

In this episode, Dr. Ahir Pushpanath, Enzyme Technology Innovation Lead at Basecamp Research, explains his passion for gaming as the reason he got interested in this unique computational approach to chemical catalysis. He takes us through the field's fascinating history, recent breakthroughs, and immense potential. You'll hear about the intersection of his personal mission to provoke a bio-revolution with his company's mission to combine nature and AI.

At Basecamp Research, Ahir and his team are redefining our approach to protein sequence, structure, and function. Using AI to understand protein evolution, they're designing innovative proteins for industrial chemistry, therapeutics, and more. Their work is rooted in a growing global genomic biodiversity map, aiming to create a sustainable world by leveraging nature's solutions for complex challenges. Additionally, Basecamp Research is committed to building partnerships with guardians of biodiversity. By sharing knowledge and benefits, they are effectively transforming global biodiversity into a valuable asset class, ensuring a mutually beneficial relationship with those who protect this vital resource and the biotechnology industry.

About our guest

Ahir Pushpanath, PhD

Enzyme Technology Innovation Lead
Basecamp Research

Ahir's Recent Publications:

- [Understanding and Overcoming the Limitations of Bacillusadius and Caldalkalibacillus thermarum Amine Dehydrogenases for Biocatalytic Reductive Amination](#)
- [Biocatalysis: An Industrial Perspective](#)
- [Process Development and Protein Engineering Enhanced Nitroreductase-Catalyzed Reduction of 2-Methyl-5-nitro pyridine](#)

Ahir's Content Recommendations:

- Blog articles highlighting Ahir's interest in biocatalysis [Discovery and Development, Embracing Enzymes](#) from The Medicine Maker
- [Enzymes and Biocatalysis](#) from The Big Think
- [5 Challenges we could solve by designing new proteins](#) a lecture by David Baker
- Articles about Ahir's father, Pushpanath Krishnamurthy, a social impact and climate activist [How to Travel to Copenhagen without a massive carbon footprint](#) from The Guardian
- [A push for climate change awareness in India's south](#) from BBC news, www.bbc.com
- [Walking for Climate Justice, Fair Trade and Sustainable Practices, Past Walks](#) from www.gopushgo.co.uk
- Learn more about [Basecamp Research](#)

This podcast series is available via the following links



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