CVJ Centre For Synthetic Biology & Bio-Manufacturing

September 23, 2025

Scientist, Metabolic Engineering

Kochi, Kerala https://cvjsynbio.org

POSITION OVERVIEW

We are seeking a self-driven Scientist in Metabolic Engineering to design, construct, and optimize microbial and eukaryotic hosts for applications in health, food, environment, and sustainable biomanufacturing. The role involves developing innovative metabolic pathways, leveraging advanced tools in synthetic biology, and collaborating with multidisciplinary teams to translate designs into functional biological systems.

KEY RESPONSIBILITIES

The responsibilities would include, but are not limited to, the following

- Engineer prokaryotic and eukaryotic organisms for production of high-value molecules, enzymes, and biomaterials.
- Design, build, and optimize heterologous metabolic pathways using genetic engineering, CRISPR, and synthetic biology toolkits.
- Apply systems biology and computational modeling to guide strain design and pathway optimization.
- Conduct multi-omics analyses (transcriptomics, proteomics, metabolomics, fluxomics) to identify bottlenecks and improve yields.
- Integrate high-throughput screening and automation to accelerate strain development.
- Collaborate closely with bioinformatics, AI, and bioprocess engineering teams to validate engineered pathways.
- Publish in peer-reviewed journals and contribute to IP generation (patents, proprietary strains, pathways).
- Mentor junior researchers and contribute to teaching/training in synthetic biology and metabolic engineering.

QUALIFICATIONS AND EXPERTISE

- PhD in Synthetic Biology, Metabolic Engineering, Microbiology, Biochemical Engineering, Molecular Biology, or related field (or equivalent industry experience).
- Strong expertise in prokaryotic (e.g., E. coli, Bacillus) and eukaryotic (e.g., yeast, filamentous fungi, microalgae, mammalian cells) systems.

- Hands-on experience in CRISPR/Cas genome editing, pathway construction, strain optimization, and high-throughput workflows.
- Proven ability to analyze and interpret omics datasets for strain improvement.
- Familiarity with bioprocess scale-up, fermentation strategies, and industrial biotech applications is an advantage.
- Track record of publications, patents, or demonstrated impact in metabolic engineering projects.
- Excellent problem-solving abilities, strong communication skills (both written and verbal), and the ability to work effectively in a team. A high degree of independence and initiative is essential.

BENEFITS AND OPPORTUNITIES

- A competitive salary and comprehensive benefits package are offered, commensurate with experience.
- Work in a state-of-the-art synthetic biology and biomanufacturing center with cutting-edge facilities.
- Collaborate with interdisciplinary experts in AI, quantum biology, and bioengineering.
- Opportunity to translate research into real-world applications in health, food, environment, and sustainability.
- Professional growth through publications, patents, and leadership in high-impact projects.
- Engage in teaching, mentoring, and capacity building for the next generation of bioengineers.

APPLICATION PROCESS

- A cover letter outlining Research Plan, Teaching Statement
- A detailed CV, including publication record.
- Contact details of three professional references

Apply by:	October 15, 2025
Position start date:	January 01, 2026
Submit application to:	director@cvjsynbio.org

Note: All applications will be thoroughly reviewed - **only** shortlisted candidates will be contacted for an interview.