Session	Emerging innovative technologies: novel fermentation and novel downstream processing innovations
Title	Geno-Writing™-Engineered HOB Platforms: Accelerating Carbon-Negative Biomanufacturing via Core Pathway Optimization
Company	Logomix, Inc.
Speaker	Kentaro Yanashima
TRL	TRL 4 - 7
Keywords feedstock (max 2)	Industrial-CO2, Green-Hydrogen
Keywords technology (max 2)	Rapid_precise_and_large-scale_genome_engineering, Core-pathway-reinforced_HOB_platforms
Keywords End-Product (max 2)	Specialty_chemicals, High-performance_biodegradable_polymers

Abstract:

Logomix leverages Geno-Writing™ - a large-scale genome engineering platform applicable from human cells to diverse microbes, rooted in the Synthetic Yeast Genome Project (Sc2.0) - to convert industrial CO2 and green hydrogen into versatile chemical building blocks using Hydrogen-Oxidizing Bacteria (HOB) - decoupling production from fossil feedstocks. We rewrite the fundamental metabolic operating system itself.

Rather than targeting a single product, we have developed engineered HOB platform strains with reinforced core metabolic pathways. This architecture aims at the flexible synthesis of a broad spectrum of compounds - including amino acids, aromatic derivatives, isoprenoids, and polymers - opening collaborations with diverse industry partners for distinct molecule targets.

Geno-Writing™ routinely enables the seamless, combinatorial genomic integration of multiple 20–30 kb DNA fragments - encoding diverse gene clusters under different regulatory elements. This allows us to rapidly construct and screen extensive pathway libraries to identify optimal gene and promoter combinations in record time.

Optimizing bioprocesses with Bio Base Europe Pilot Plant, we offer two primary partnership avenues:

- Co-developing or licensing our core-pathway-reinforced HOB strain pipelines for your target chemical.
- Rapidly constructing bespoke microbial factories using our combinatorial genome-writing platform.

Join us to turn industrial CO2 emissions into your next high-margin product line.