



Session	Emerging innovative technologies: novel fermentation and novel downstream processing innovations
Title	Biology, Amplified: More Biomanufacturing Output from Existing Reactor
Company	HypeSound
Speaker	Johnny Drain
TRL	TRL 4 - 7
Keywords feedstock (max 2)	Microalgae,Yeast
Keywords technology (max 2)	AcousticStimulation BioprocessControl
Keywords End-Product (max 2)	Biomass,fermentation
Abstract:	
Biomanufacturers need more output from expensive, capacity-constrained reactors, yet expanding facilities requires significant capital. HypeSound is building a retrofit acoustic control platform that uses programmable, low-frequency sound to increase biological productivity in reactors customers already own—without genetic modification, chemical additives or direct contact with the culture. It has applications in bioprocesses across food, biofuels and pharma. Across internal and externally validated studies, acoustic stimulation has delivered up to 3× microalgal growth rate, 48% more final Spirulina biomass and up to 45% higher C-phycocyanin purity in selected trials. Positive responses have been observed across five species. Actuation hardware has been demonstrated up to 1,300 L; biological repeatability and industrial-scale performance remain key validation priorities. Our actuation platform is at TRL 5–6, with sensing, AI optimisation and closed-loop control under development. By improving yield, purity and reactor utilisation, HypeSound aims to lower production cost per kilogram and reduce the need for new reactor CAPEX. With €1.3M raised, two active and two completed POCs, and eight signed LOIs, we are raising a €4.5M Seed round to validate repeatable industrial economics and scale customer deployments.	