

**About our guests**

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No cold chain? No problem—inside the world of lyo-beads

Season 3, Episode 23

Episode notes

Applyo Jena is building a freeze-dried future, one bead at a time. In this episode, Dr. Hanno Hermann and Dr. Thanh Tu Hellmich-Duong walk us through how their [lyo-bead technology](#) emerged from the challenges of field-based HIV diagnostics and evolved into a flexible platform that stabilizes everything from [enzymes](#) to magnetic nanoparticles, without the need for refrigeration.

From diagnostics research to therapeutics, this lyophilization platform is solving key pain points in reagent formulation, shipping, and field use. Hanno and Thanh Tu explain how lyo-beads offer precise, single-use reagent doses with near-instantaneous rehydration, minimal batch-to-batch variability, and extended ambient temperature stability. Whether it's for [isothermal RT-LAMP](#), next-gen sequencing prep, or phage-based application, Applyo's platform unlocks new formats, simplifies logistics, and lowers the environmental burden of molecular workflows.

With new hires, new markets, and new product lines on the horizon, Applyo Jena is poised for a decade of growth and maybe even a hand in reshaping the way freeze-dried pharmaceuticals are developed and delivered.

“Normally, you have to use freezers for transport and storage of these reagents to keep them in function. And we found solutions to store and transport these reagents at ambient temperatures up to 60 degrees in, for some time, to keep them stable. And this is a crucial thing for the diagnostic industry, especially for point of care diagnostics.”

—Hanno Hermann, PhD

“When you want to do molecular diagnostics in the field, you have challenges using real time cycles in the field. And for this RT-LAMP is, of course, a very good technology as an isotherm amplification. We have developed an RT- LAMP mix which can be used in the field without any reader. It's a colorimetric LAMP assay which changes the color from red to green.”

—Thanh Tu Hellmich-Duong, PhD

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