



Session	Emerging Innovative Technologies: Novel Fermentation and Downstream Processing Innovations
Title	Improving your enzymatic hydrolysis
Company	UGent
Speaker	Nathan De Geyter
Keywords feedstock (max 2)	Plant biomass
Keywords technology (max 2)	Enzymatic hydrolysis
Keywords End-Product (max 2)	Sugars bio-aromatics
Abstract:	
OptoPhenol is a novel, patent-pending technology from Ghent University that significantly enhances the enzymatic conversion of lignocellulosic biomass. The technology leverages specific natural compounds that act as enzymatic boosters, increasing the efficiency of several hydrolysis processes. This dual-action innovation not only releases higher amounts of fermentable sugars, but also enables the parallel extraction of valuable bioactive molecules, such as phenolic compounds. This integrated valorisation approach maximises the utility of plant biomass and contributes to a more efficient and circular bioeconomy. The OptoPhenol technology has been successfully validated at laboratory scale using various enzyme systems and biomass feedstocks, demonstrating broad applicability and clear performance improvements compared to conventional methods. We are now seeking industrial partners to co-develop and upscale the technology towards market-ready applications. Target sectors include pretreatment of biomass for fermentation in food, feed, bio-based chemicals and advanced biofuels, where OptoPhenol can unlock new value streams and improve overall process economics.	