



Session	Automation, Sensors, AI
Title	Enable continuous biomanufacturing with novel sensing technologies
Company	imec
Speaker	Xu Zhang
Keywords feedstock (max 2)	Let's chat
Keywords technology (max 2)	Raman; Imaging
Keywords End-Product (max 2)	Let's chat
Abstract:	
Continuous biomanufacturing is a cornerstone of sustainable, efficient bio-based production, but its adoption remains limited due to the lack of robust online monitoring and control tools. As a world-leading independent nanoelectronics & digital technology R&D hub, imec tackles this challenge by delivering a unique combination of sensing technologies: Tunable laser based Swept Source Raman spectroscopy and Len-Free imaging system (LFI). This Raman system enables non-invasive, swift inline monitoring of metabolite profiles, substrate depletion and stress markers while LFI module quantifies biomass density/viability and detect contamination. This sensing platform enables real-time monitoring of the continuous biomanufacturing process, and offers the fundamental basis to acquire essential data stream to build advanced data interpretation and control algorithms.	