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High throughput automated and consistent process development for recombinant proteins and metabolically engineered cell factories

Peter Neubauer
Berlin University of Technology, Germany

Process development times for recombinant proteins can be significantly reduced by implementing in an automated way QbD and DoE principles, on-line sensors and at-line process and product analysis already in the screening stage. A key for a consistent process development is to maintain controlled growth strategies over the whole developmental line. The scalable EnBase® cultivation platform mimics the industrial relevant fed-batch procedure in microliter scale, and offers an advantage in the screening stage to select the right clones and conditions and facilitate necessary analytics by high cell densities.

Furthermore, process development is combined with more-compartment scale-down simulators which evaluate the industrial-scale robustness of a cell factory already in the laboratory scale as well as with soft-ware sensors and model based design of experiments. The presentation will present the strength of these concepts for process development of different difficult to produce proteins, such as ribonuclease inhibitor and the product of valinomycin by the superlarge valinomycin synthetase.

Biography

Peter Neubauer has completed his Ph.D. in Microbiology from Ernst-Moritz-Arndt University of Greifswald, Germany and postdoctoral studies from Royal Institute of Technology (KTH, Stockholm, Sweden). He was a professor for Bioprocess Engineering at the University of Oulu, Finland from 2000-2008. Since 2008 he holds the Chair of Bioprocess Engineering at the Berlin University of Technology (TU Berlin, Germany). He is a cofounder, board member and scientific adviser for the company BioSilta. Prof. He has published more than 130 papers in reputed journals and 14 patents and serving as an editorial board member of *Microbial Cell Factories and Biotechnology Journal*.

peter.neubauer@tu-berlin.de