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Digital biomanufacturing supports mAb production

The recent explosion in monitoring, analytics and new computing capabilities initiated the revolution we call digital bio-manufacturing. These, combined with such advances as artificial intelligence, automation and robotics are evolving our concept of manufacturing in general. The PredixTM system employed by GE is an example of how manufacturers can use continuous data acquisition, cloud technology and advanced analytics to provide a platform for the industrial internet. Changes are occurring from product development and factory operations to materials supply. These involve increased monitoring, data handling, connectivity, computer power, control algorithms and automation. DB promises such things as real-time optimization of the manufacturing process based on such highly valuable criteria as projected product quality and batch profitability. The IIoT, big data and the cloud now synergize with such initiatives as lean PPD, SCADA and DCS to advance our process control capabilities. The ability to elucidate metabolic bottlenecks in expression and PT processing combined with our heightened process control capability is opening new doors of opportunity in manufacturing efficiency and product quality. Advances in high throughput whole genomic RNA interference screening is advancing our process-control potential in mAb-relevant mammalian cell lines.

Biography

William Whitford is Strategic Solutions Leader, GE Healthcare in Logan, UT with over 20 years' experience in biotechnology product and process development. He joined the company as an R&D Leader developing products supporting protein biological and vaccine production in mammalian and invertebrate cell lines. Products he has commercialized include defined hybridoma and perfusion cell culture media, fed-batch supplements and aqueous lipid dispersions. An invited lecturer at international conferences, William has published over 250 articles, book chapters and patents in the bioproduction arena. He now enjoys such activities as serving on the Editorial Review Board for Bioprocess International.

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