

## **Flexible production technologies – Using modularization for small scale manufacturing**

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1) Fast development of new products and new processes do support the requirement to sell these new products quick to the market. 2) New regulations and safety concerns require chemical companies to produce dangerous chemicals at the final location instead of transporting these. 3) Due to the local nature of biobased resources, these raw materials are only available in small quantities.

Just three examples of strong drivers for flexible production technologies. Indirect it requires a strong scalability of processes and production. In some cases these production facilities are relocated to continue production with new or alternative resources or producing new products.

In this presentation several cases will be addressed, identifying the aspects of flexible production and highlighting how modularization and skid mounted construction is a strong solution in achieving this. The scalability will be explained and the limitations of modular plants will be quantified. Besides the hardware aspects also insight will be provided how automation is required for efficient realization of a flexible production.