

Realizing the future with small scale modular plants

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In the last 30 years Zeton has developed itself as an all-round pilot plant specialist. Zeton has extensive experience in construction and development of modular plant modules. Modularization of process skids on several scales creates an efficient tool for testing and performing R&D with subsequent scale-up into commercial applications. By applying a fast track project approach, short project lead times can be realised.

Recent market developments from batch to continuous operations have led to increased demand small scale modular plants. These plants are characterized by a high level of complexity, automation and newly-developed process steps. Transition from batch processes to continuous processes required innovative equipment as well as new operation strategies and automation concepts.

The presentation will give an overview of new developments on different scales, ranging from laboratory and pilot systems to demonstration and modular production plants. Scale specific engineering and construction aspects will be discussed. Additionally, the future potentials and challenges for small scale modular plants on the above mentioned scales will be discussed.

Recent projects have shown application of laboratory scale modules for continuous production of fine chemicals and pharmaceuticals. Also modular plant modules for flexible connection of various process sections have been demonstrated, leading to plug&play concepts on a backbone structure with utilities.

On larger scale, modular construction concepts have been developed with options for integration of the modules into a building concept. Complete production facilities including control rooms, laboratories and personnel facilities have been realized. Other key factors for larger modules are transportability and flexibility in operation.

Modules have been constructed for flexible locations, adjusted to frequent relocation as well as for one time transport and quick reassembly and start-up at the customer's site.