

High-throughput synthesis and characterization of microcapsules

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Abstract:

During recent years an increased interest has grown in the development and of application of micro-capsules. These capsules have been used for a variety of applications including agrochemical, pharmaceutical, food, paper industry and textiles. An important technique for microencapsulation involves emulsification and in situ polymerization processes. However, the development of new synthesis chemistries as well as optimization of existing processes is very often performed via a trial-and-error approach. This often results in a time consuming and error-prone process. Therefore, Flamac has developed a unique high-throughput platform, which mimicks the manual synthesis procedure very well, but speeding up the overall process using automated synthesis modules. Additionally, capsules properties such as shape, release properties of the encapsulated active substance, mechanical strength and stability of capsule can be analyzed. In this presentation, the high-throughput screening of a variety of synthesis and process parameters of melamine resin microcapsules on particle size distribution, shape, morphology and mechanical properties will be presented.