



Robot Handling of
BLS Syringes

Throughput counts

Bosch Lab Systems
and BASF develop
ultramodern, high
throughput screening
systems for coating
development

For the first time, a fully integrated robotics system allows the comprehensive testing of complex coating formulae, from raw material formulation right through to the finished coating product. BASF is ranked among the leading chemical companies in the world. In order to maintain its worldwide leadership in the chemical coatings sector, the BASF business unit, "Performance Chemicals", uses the innovative High Throughput Screening technique for formulation and coating applications.

Wide range of coatings

During the optimization of coating raw materials and the investigation of structural relationships in coating formulations, a great variety of different solid and liquid feedstock must be mixed, or dispersed, and, if necessary, also standardized in terms of solid content, viscosity or pH value. A wide range of coating systems need to be tested and

this would not be possible without the syringe dosing system developed by Bosch Lab Systems (BLS).

Reproducible production of test panels

For the investigation of product properties, newly developed coatings must be reproducible and industrial-quality coatings applied to test panels or other substrates. Alongside classical doctor blade technology, the BLS-developed spray procedure (winner of the "2005 Color and Coating Prize") is also used. The subsequent hardening of the coating film takes place directly in the unit, either thermally or by ultraviolet radiation.

Fast and objective testing

For BASF and its customers, the quick availability of detailed and meaningful test results is important. For this reason, many established testing methods, such as the measurement of color, gloss or



High Throughput-System for Formulations



Typical BLS-Syringes

layer thickness, have been integrated into the system. New automation techniques, for the determination of scratch or chemical resistance, were jointly developed by Bosch and BASF.

High capacity

The modular design of the system and the simultaneous processing of several production steps allow up to a 100 different coating systems to be processed within a short period of time. For the first time, one system integrates innovative dosing, application and measuring techniques, as well as process control, and permits the targeted production, application and hardening of coatings, as well as the fully automatic determination of the coating characteristics. Due to the modular design and the robustness of the modules, this flexible system can also be used in other application areas, such as the development of adhesive materials, detergents, cosmetics or pharmaceuticals. The new system is currently being installed in Ludwigshafen, Germany, by BASF, together with Bosch employees, and will be available during the year to BASF's internal and external customers.

Bosch Lab Systems develops and very successfully markets high throughput technologies and laboratory automation for the efficient and fast development of new materials and formulations. An emphasis is placed on the implementation of customized development processes that provide industrial-quality, highly flexible and modular automation solutions.

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