Fraunhofer ISC

Fraunhofer Institute for Silicate Research ISC

Automation. Digitization. Optimization.

LAB 4.0 for Digital Life Science

PROCESS AUTOMATION

Interface between Life Sciences, Automation and Data Management

Modern technologies are increasingly based on interdisciplinary solutions. The requirements for new products, materials and manufacturing processes are becoming more complex. Starting at raw materials, CO_2 footprint, resource conservation and recyclability, to bio-compatibility, regulation and documentation - **digitization, artificial intelligence** and **corresponding intelligent interfaces** can help in mastering this complexity. This is how **innovative products are created using innovative methodology.**

Offer to our customers

Our experts in applied **materials research, process and plant engineering, data sciences and life sciences** combine their interdisciplinary know-how. As a result, we offer the **development of customized solutions from a single source.** The team is skilled with the analog world of materials for life sciences while competently implementing the interfaces to the digital world. This is complemented by consulting on **digital and plant-based solutions** and support in **data analysis and data evaluation.** We also build **robotic laboratory** and **synthesis units** that combine **life sciences, automation and data management aspects: LAB 4.0**

INTERFACES

LAB 4.0 for Digital Life Science

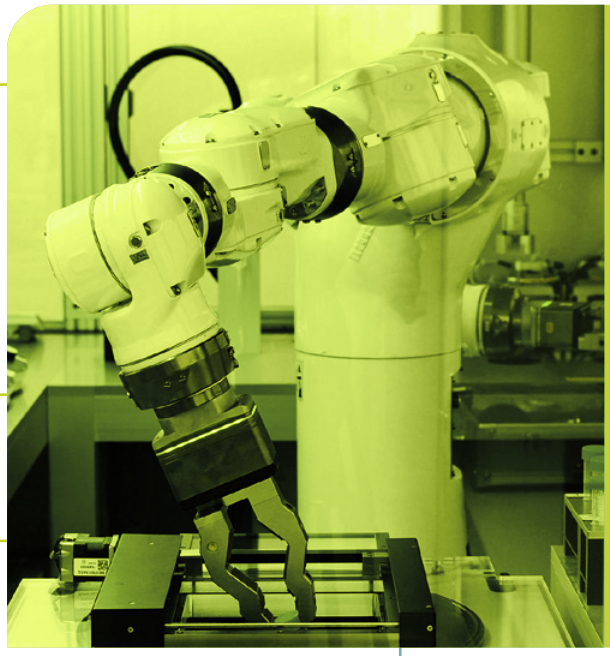
EVALUATION + INTERPRETATION

Efficiency despite complexity

The use of **digitized processes and artificial intelligence** for product development makes it possible to bring knowledge-based new products, **processes and applications from the idea to technological market maturity more efficiently** with complex requirements and innovative materials. In the process, numerous sustainability aspects with regard to **raw materials used, energy and water consumption**, and design for recycling are meaningfully integrated from the very beginning.

LAB BOOK

MATERIALS OPTIMIZATION



Robotic processes, automation, equipment and process optimization optimization create potential for cost efficiency and process safety in the area of material development and production.

AUTOMATION

Intelligent knowledge and data management software, a digital lab book, and AI-compatible measurement protocols act as valuable interfaces for, among other things, data acquisition/analysis/evaluation and data combination.

DIGITIZATION

Digital tools are important and helpful, but they cannot replace human experience. This remains indispensable in analytics for the final evaluation and selection of solutions for new products and processes.

OPTIMIZATION

AUTOMATION

DIGITIZATION

OPTIMIZATION

Contact

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