

# Automatic Design of Microfluidic Devices: An Overview of Platforms and Corresponding Design Tasks

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Chapter

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## Abstract

This overview chapter summarizes the content of a tutorial given at the 2018 edition of the Forum on Specification and Design Languages. The aim of the tutorial was to introduce the technology of microfluidic devices, which gained significant interest in the recent past, as well as corresponding design challenges to a community focused on design automation and corresponding specification/design languages. By this, the overview presents a starting point for researchers and engineers interested in getting involved in this area.

## Keywords

Microfluidics Labs-on-chips Design automation Electrowetting  
Digital microfluidic biochips Micro-electrode-dot-array biochips  
Flow-based microfluidic biochips Programmable microfluidic devices  
Biochips with passive routing concept Microfluidic networks  
Networked labs-on-chips Hydrodynamic controlled microfluidic networks  
Binding Scheduling Placement Routing Multiplexing High-level synthesis  
Control logic synthesis Simulation

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## Notes

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