

chemical logic science

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Chemical logic science is a field of study that uses chemical logic to understand biochemistry and create systems that can perform programmable functions.

Chemical logic

- A framework for understanding biochemistry that organizes topics based on chemical logic principles
- A way to process information from multiple external stimuli to perform programmable functions

Chemical logic systems (CLSs)

- Systems that can sense external stimuli like light, sound, and oxygen
- Systems that process information using Boolean logic to perform functions like pattern formation, cargo transport, and maze solving

Chemical logic gates

- Systems that can perform simple computations using DNA, RNA, and protein networks
- Systems that can change their shape and physical properties in response to their environment

Research in chemical logic science

- Researchers are developing chemical logic gates that can influence macroscopic properties like crystal structures and electrical properties
- Researchers are designing programmable protein circuits using two-input gates built from de novo-designed proteins

Out-of-equilibrium chemical logic systems: Light- and sound-controlled programmable spatiotemporal patterns and mechanical functions - ScienceDirect

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Molecular logic gate

A molecular logic gate is a molecule that **performs a logical operation based on at least one physical or chemical inputs and a single output.**



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