CORENET is bridging **systems chemistry, microfluidics technology** and **computational science**!

COmplex chemical REaction NETworks for breakthrough scalable reservoir computing

DURATION
01.04.2022 – 31.03.2026

BUDGET
3 million euro

FUNDING SCHEME
HORIZON-EIC-PathfinderOpen

COORDINATOR
Universidad Autónoma de Madrid

THE PROJECT

The vision of CORENET is to construct brain-mimicking computing devices that utilise networks of chemical reactions as molecular information processing systems.

The consortium will implement reservoir computing (RC) on microfluidic chips using chemical reaction networks (CRNs) that convert input feedstock molecules and environmental conditions into a pattern of product molecules.

THE OBJECTIVES

Challenge now

≈10K molecules

Drug discovery involves the screening of ca. 10,000 molecules to yield one new medicinal product

Machine-brain interfaces require implanting 1,000s of electrodes that have compatibility issues with the brain tissues and limited durability

Long-term vision

Faster and cheaper drug discovery processes and patient treatment

Personalised patient treatment via in situ synthesis of drug molecules

More compatible, durable and reliable machine-brain interfaces

Chemical reservoir computing devices that work at net-zero computational power, enabling truly sustainable and green AI

Consortium

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European Innovation Council

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