

Microdroplet-based Microfluidics

Intrinsic Reproducibility

Microfluidics technology offer automation, high-throughput, and multiplexing ability and intrinsic reproducibility.

Microdroplets in microfluidics offer very specific advantages for this project such as an isolated environment for the sample avoiding contaminations, highly homogeneous protocols or high-throughput screening ability.

A technology that can be generated at frequencies up to 10,000 Hz (10,000 droplets per second) when the design of the microfluidic chips is appropriate. Microdroplets technology has been extensively used for the encapsulation of single cells for growth kinetics studies, drug dose responses or culture conditions for optimised growth.

At INL we generated a set of microdroplet chips able to perform different operations: microdroplet generation, cell encapsulation, microdroplet sorting and microdroplet incubation.

+ Features

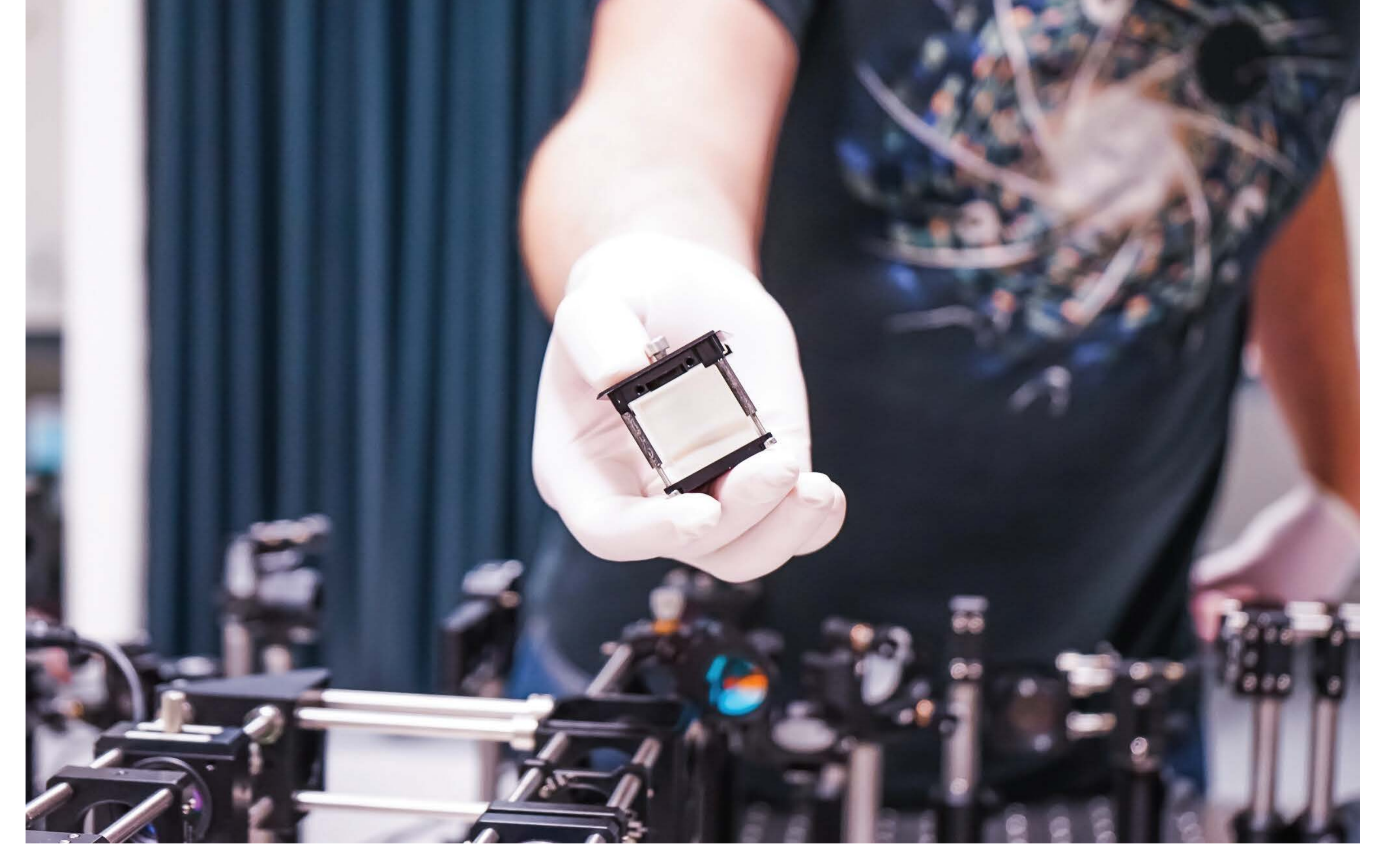
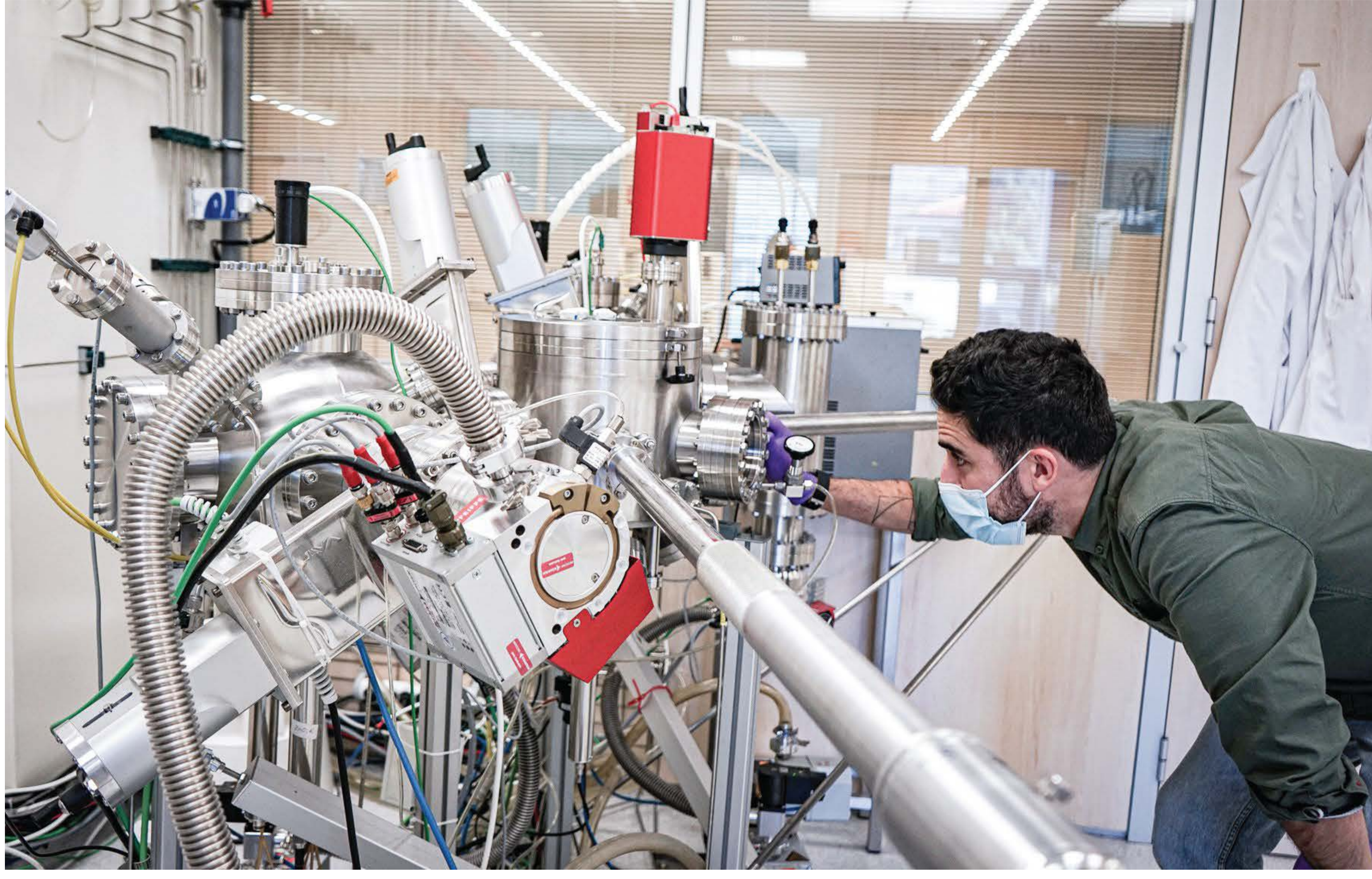
Frequencies from 500- 10,000 droplets per second
High droplet monodispersity
In-flow droplet content analysis
Minimum cross-contamination
Small sample volume
Low experimental costs

+ Suggested applications

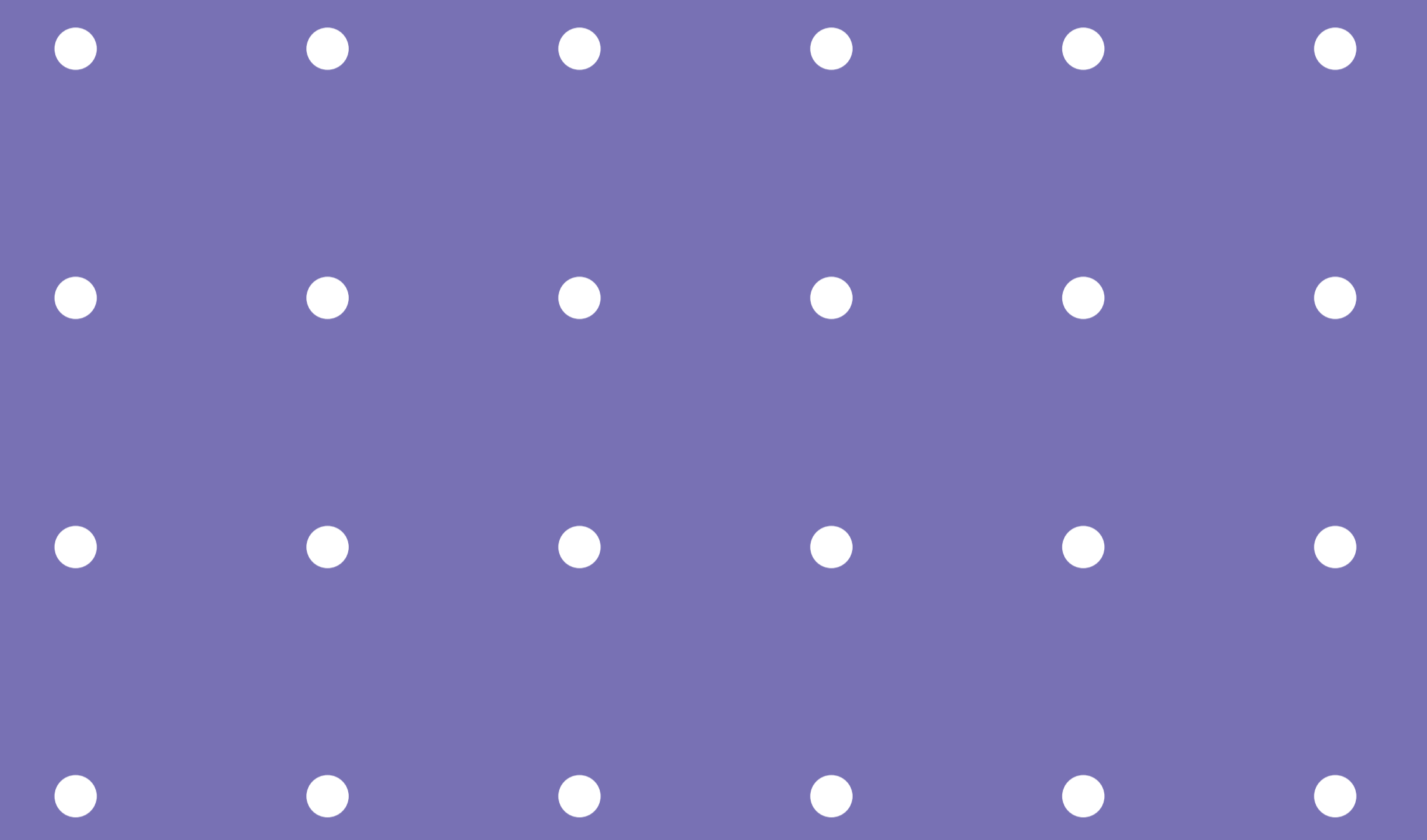
Single-cell analyses and developmental studies
Nanoparticle and microparticle synthesis in-line
Continuous and automated hydrogel bead formation
Metabolomic analyses
Immunoassays

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Shaping the future together in Clean Energy, Food, Health, Smart Digital NanoSystems, Sustainable Environment and Advanced Materials & Computing.

01 SCIENCE

Discover our areas of research and expertise, where we dive into nanoscience and intermix various disciplines to transform it into nanotechnology.

03 SERVICES

INL has state-of-the-art scientific equipment which can be used by internal and external stakeholders within the research, technology, and innovation fabric. You can access this open facility with expert support, either remotely or in-person, for full-service or for independent use after initial in-house training.

02 TECHNOLOGY

By nourishing on our multiple disciplines in house and with partners, we develop and deploy solutions to the market.

04 SOCIETY

INL is committed to disseminating to all audiences the nanotechnology concepts, and bring society closer to our scientific developments. Visit our website and explore our activities and events.

For more information:



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