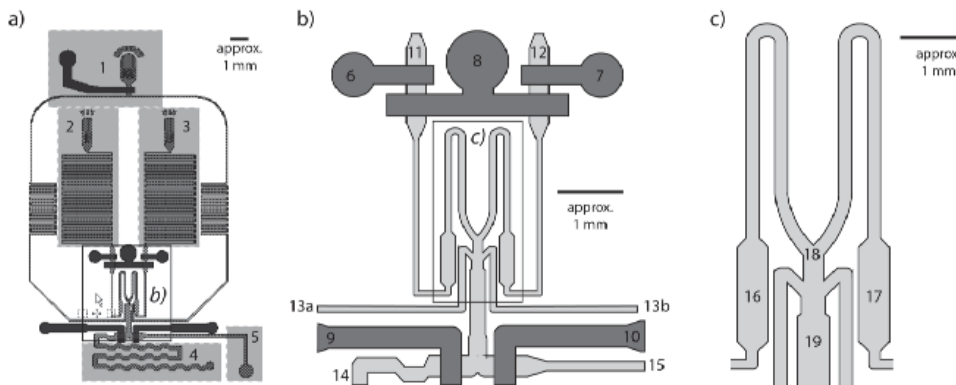


Soft microrobotic device for high throughput single cell studies



exemplary chip layout of a deterministic particle processing system, here for deterministic co-encapsulation

Ref. Nr

6.1685

Keywords

high throughput; single cell analysis; microfluidic chip

Intellectual Property

US 16/333,297 (granted)

Date

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Description

Microfluidic device or chip comprising at least one inlet configured to introduce at least one object into the device; an oil inlet for introducing an oil that supports droplet formation into the device or a droplet-forming substance inlet for introducing a droplet-forming substance into the device; a co-encapsulation area or structure in which the at least one object is encapsulated within the droplet; a microfluidic tubing or channel configured to transport the at least one object to an entrance of the co-encapsulation area or structure; an oil-supporting droplet-formation microchannel or droplet-forming-substance microchannel connected to the microfluidic tubing or channel to bring a liquid from the microfluidic tubing or channel into direct contact with the oil that supports droplet formation or the droplet-forming substance; and a droplet microchannel or tubing configured to transport the formed droplet.

Advantages

Detection and analysis of rare cell types
Deterministic pairing of particles with liquid reagents
High-resolution flow imaging of particle suspension

Applications

System for collection of co-encapsulated objects that is including a processor and a camera for detection