Why do we need to turn a Petri dish into a lab-on-a-chip and how⬚

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ABSTRACT: IThe chemical processes and life processes on the earth are carried out based on fluids. However, biologists rarely use microfluidic chips and still use Petri dishes that do not have microfluidic control but are inexpensive and easy to operate. Microfluidic chips and their equipment are expensive and difficult to manage and cannot meet the requirements for precise control of the microenvironment. We need to make the microfluidic technology into a Petri dish product and realize the microenvironment's precise fine-tuning. We must consider:

A) use the low-cost manufacturing technology of Petri dishes to make microfluidic Petri dishes.

B) the liquid in the microfluidic Petri dishes is an internal circulation flow, not perfusion microfluidics.

C) streamline as much as possible Only the most basic driving technology of micro-flow is left.

D) Any technology that may interfere with the system must be avoided.

It can precisely control very weak micro-flow (for example, the flow rate in micrometers per second).

E) Microflow must be programmable.

F) Whether programming or other operations, it must be straightforward to learn. It is best to see it immediately or as simple as using a petri dish or a mobile phone.

Biography:-

Dr. Xing Yue (Larry) Peng is currently a professor in the Biology Department of Xiamen University. His research interest is focusing on microfluidic devices for real-world applications.

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