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Developing a controllable platform for microfluidic flow velocity using pneumatic valve for diagnostics

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There is a growth of social concern for personal health, medical services by improved quality of life like increase of population and aging issues. However, medical services utilizing the existing large medical facilities generate a high costs. Also, it is difficult to receive the provision of quality health care services from personal medical facilities. In comparison, diagnostics cost cheaper, easy access to public and user friendly. Therefore, society shows higher interest in health center, particularly in the aspect of diagnostics. In this field, many of laboratories are developing a microfluidics chip for diagnostics. Reaction time for each disease is different and current microfluidics chip research cannot detect various diseases by one chip. Therefore, the microfluidics chip equipped with control system is inevitable in order for a sufficient immune reaction between antigen and antibody for various diseases detection at test zone in channel, various flow velocities. Here, we suggest a flow controllable system. Control of flow velocities are measured and controlled by integrated system equipped with light source and pneumatic valve. We have demonstrated the developed system could be easily controlled for diseases detection and programmed proper algorithm using the labview.

Biography

Eundoo Lee completed his BS from Kangwon University and is studying Mechanical Engineering at Korea University. He has experience in the diagnostics field at Boditech Med, a health care company. His patent is pending for flow velocity measurement and control. He has also published papers in microfluidics journals about flow velocity control.

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