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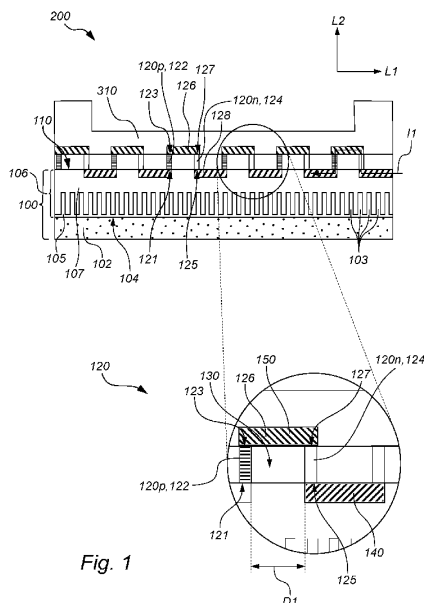
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(57) Abstract: A semiconductor structure and a microfluidic system comprising the semiconductor structure are disclosed. The semiconductor structure comprises a thermoelement layer. The thermoelement layer comprises p- and n-type thermoelements. These thermoelements form regions wherein respective region is associated with a specific temperature range, where achieving the specific temperature range is based on an electron or hole current flowing through the thermoelements. The semiconductor structure forms part of the microfluidic system comprising a microfluidic channel having a meander extension across regions having different temperature ranges. This allows a fluid flowing in the microfluidic channel being exposable to cyclic temperature variations.

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