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(54) **Mixing junction**

(57) The invention is directed to a process for mixing two or more streams in a microfluidic device and to a microfluidic device for carrying out said process.

The process involves providing at least a first fluid stream in a first channel having a width and length which define a plane, providing at least a second fluid stream in a second channel lying out of said plane, and combining said first fluid stream and second fluid stream in a junction, which junction joins at least said first and second channel, wherein said first channel has a height which is smaller than the width of said first channel and which height is smaller than at least one dimension of said second channel, said dimension lying in said plane.

The microfluidic device of the invention comprises a junction, which junction joins two or more channels, wherein the width and length of a first of said two or more channels define a plane and at least a second of said three or more channels lies out of said plane, said first channel having a height being smaller than the width of said first channel and which height is smaller than at least one dimension of said second channel, said dimension lying in said plane.

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Figure 1B

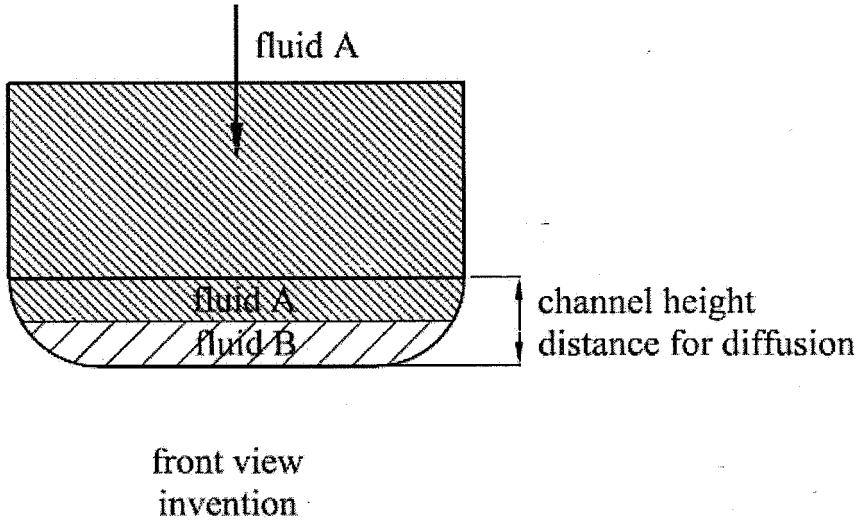

Figure 5