channel.

[0017] However, the channel structure is complicated when such a guide structure is provided at the opening of the channel through which the sample liquid laminar flow is introduced. Further, it is necessary to laminate three or more substrate onto one another in order to form such a channel structure on a microchip. Therefore, high accuracy is needed for the formation of the channel structure on each substrate and the lamination of the substrates, which increases the manufacturing cost of the microchip.

[0018] In light of the foregoing, it is desirable to provide a microchip capable of feeding a sample liquid laminar flow converged to the center of a channel and easily manufacturable.

Solution to Problem

[0018a] According to a first aspect, there is provided a microchip comprising: a substrate including a fluid channel structure, the fluid channel structure including a first fluid introduction channel and a second fluid introduction channel configured to meet so as to allow merging of a first fluid introduced from the first fluid channel and a second fluid introduced from the second fluid introduction channel, and a tapered portion configured to be positioned after merging the first fluid and the second fluid from the first and second fluid introduction channels, wherein the fluid channel structure further includes a contracted portion positioned downstream of the tapered portion.

[0018b] According to a second aspect, there is provided a particulate analyzing device comprising a microchip, the microchip including a substrate including a fluid channel structure including a first fluid introduction channel and a second fluid introduction channel configured to meet so as to allow merging of a first fluid introduced from the first fluid channel and a second fluid introduced from the second fluid introduction channel, and a tapered portion configured to be positioned after merging the first fluid and the second fluid from the first and second fluid introduction channels, wherein the fluid channel structure further includes a contracted portion positioned downstream of the tapered portion.

[0018c] According to a third aspect, there is provided a method of manufacturing a microchip comprising forming a substrate including a fluid channel structure, the fluid channel structure including a first fluid introduction channel and a second fluid introduction channel configured to meet so as to allow merging of a first fluid introduced from the first fluid channel and a second fluid introduced from the second fluid introduction channel, and a tapered portion configured to be positioned after merging the first fluid and the second fluid from the first and second fluid introduction channels, wherein the fluid channel structure further includes a contracted portion positioned downstream of the tapered portion.

[0018d] According to a fourth aspect, there is provided a microchip comprising: a first introduction channel; second introduction channels arranged to sandwich the first introduction channel and merged with the first introduction channel from both sides; and a merge channel connected to the first introduction channel and the second introduction channels, where fluids fed from the first and the second introduction channels are merged and flow, wherein the merge channel has a tapered portion formed so that a channel width in a sandwiching direction along which the first introduction channel is sandwiched by the second introduction channels gradually increases along a fluid feeding direction.

[0018e] According to a fifth aspect, there is provided a particulate analyzing device comprising: the above microchip, wherein the microchip has a detecting portion that detects a particulate contained in a fluid fed from the first introduction channel on a downstream side of the contracted portion in the merge channel.

[0019] According to an embodiment of the present invention, there is provided a microchip which includes a first introduction channel, second introduction channels arranged to sandwich the first introduction channel and merged with the first introduction channel from both sides, and a merge channel connected to the first introduction channel and the second introduction channels, where fluids fed from the first and the second introduction channels are merged and flow, wherein the merge channel has a tapered portion formed so that a channel width in a sandwiching direction along which the first introduction channel is sandwiched by the second introduction channels gradually increases along a fluid feeding direction. In the microchip, the merge channel may have a tapered portion formed so that a channel depth in a direction perpendicular to a plane containing the first introduction channel and the second introduction channels gradually decreases along a fluid feeding direction.

According to another embodiment of the present invention, there is provided a microchip which includes a first introduction channel, two second introduction channels arranged to sandwich the first introduction channel and merged with the first introduction channel from both sides, and a merge channel connected to the first introduction channel and the second introduction channels, where fluids fed from the first and the second introduction channels are merged and flow, wherein the merge channel has a tapered portion formed so that a channel depth in a direction perpendicular to a plane containing the first introduction channel and the second introduction channels gradually decreases along a fluid feeding direction.

In the above microchip, a channel depth of the first introduction channel may be smaller than a channel depth of the second introduction channels, and a communicating port of the first introduction channel to the merge channel may be disposed at a substantially center position in a channel depth direction of the second introduction channels.