[0015] In some embodiments, at least a portion of the structure is positioned radially outwards of the first portion of the channel, and a radially innermost point on a junction formed by the chamber and the first side of the first portion of the channel defines a maximum permissible level for the fluid residue. In some embodiments, a second side of the first portion of the channel is positioned radially inwards of the maximum permissible level for the fluid residue. In some embodiments, the first portion of the channel is bent.

[0016] In a fourth aspect, the present disclosure provides a device configured for mixing a fluid with two or more components. The device includes a rotational axis and a mixing chamber. The mixing chamber having a curved side that is not coaxial with the rotational axis..

[0017] In a fifth aspect, the present disclosure provides a method for mixing a fluid with two or more different components by inertia. The method includes (A) obtaining a device including a rotational axis and a mixing chamber with a curved side that is not coaxial with the rotational axis, wherein the mixing chamber contains a fluid including two or more different components. In some embodiments, a volume of the fluid is at most 50%, at most 55%, at most 60%, at most 65% or at most 70% of the mixing chamber.

[0018] The method also includes (B) accelerating the device to a first speed in a direction towards the curved side of the mixing chamber. In some embodiments, the first speed is based at least in part on a type of the fluid, an amount of the fluid, a shape of the mixing chamber, or any combination thereof.

[0019] The method further includes (C) decelerating abruptly the device such that the fluid moves towards the curved side of the mixing chamber due to inertia. The curved side of the mixing chamber translates the movement of the fluid into a circular motion that produces vortices, thereby promoting mixing of the two or more different components in the fluid. In some embodiments, the decelerating (C) is performed at a deceleration of at least 500 rpm/s, at least 1000 rpm/s, at least 1500 rpm/s, at least 2000 rpm/s, or at least 2500 rpm/s, at least 3000 rpm/s, at least 5000 rpm/s, 10000 rpm/s, at least 50000 rpm/s, or greater. In some embodiments, the decelerating (C) brings the device to a full stop.

[0020] In some embodiments, the method further includes (D) repeating the accelerating (B) and the decelerating (C) for one or more times.