4. The process of claim 1 wherein each of the at least 3 adjacent shims is identical.

5. The method of claim 1 further comprising the step of placing a catalyst or sorbent in said flow path.

6. The method of claim 1 wherein the flow path in said at least three shims does not mix with any other flow paths.

7. The method of claim 1 further comprising the step of placing a static mixer in said flow path.

8. A device formed by the method of claim 1.

9. A process of conducting a unit operation comprising the step of passing a fluid through the device of claim 8.

10. A process of making a device from a plurality of shims, passing a fluid through said device and conducting a unit operation on the fluid, comprising:

stacking a plurality of shims such that a continuous flow path is formed through the shims;

wherein the flow path is substantially parallel to shim thickness;

wherein the plurality of shims comprises at least three shims through which a flow path is formed and wherein a straight, unobstructed line is present through the flow path in said at least three shims;

wherein the flow path in said at least three shims does not mix with any other flow paths;

bonding the shims to form a device capable of performing a unit operation on a fluid;

passing a fluid into the device such that a fluid passes through the flow path in said at least three shims; and

performing at least one unit operation on the fluid as it passes through the flow path in said at least three shims.

11. The process of claim 10 wherein the flow path formed in said at least 3 shims is defined by the borders of apertures in said at least 3 shims, and wherein, in each of said at least 3 shims there is a border defining a flow path, the border having a circumference and wherein said circumference in each shim is at least 20% populated by edge features.

12. The process of claim 10 wherein the flow path formed in said at least 3 shims is defined by the borders of apertures in said at least 3 shims, and wherein, in at least one of said at least 3 shims there is a border defining a flow path, the border having a circumference and wherein said circumference in each shim is at least 20% populated by edge features, and wherein in another of said at least 3 shims there is a border defining a flow path, and the border is smooth.

13. A process of conducting a unit operation on a fluid, comprising:

stacking a plurality of shims such that a continuous flow path is formed through the shims;

wherein the flow path is substantially parallel to shim thickness;

wherein the plurality of shims comprises at least three shims through which a flow path is formed and straight, unobstructed line is present through the flow path in said at least three shims;

bonding the shims to form a device capable of performing a unit operation on a fluid;

passing a fluid into the device such that the fluid passes through the flow path in said at least three shims; and

performing at least one unit operation on the fluid as it passes through the flow path in said at least three shims.

14. The process of claim 13 wherein the device is capable of performing at least one unit operation selected from the group consisting of: vaporization, compression, chemical separation, distillation, reaction and condensation.

15. The process of claim 13 wherein the flow path in said at least three shims does not mix with any other flow paths.

16. The process of claim 13 wherein said fluid comprises at least a portion of a reaction composition; and

further comprising a second fluid that passes through a second flow path in said at least three shims.

17. The process of claim 16 wherein the fluid in said flow path and the second fluid in said second flow path do not mix.

18. The process of claim 17 wherein the fluid in said flow path and the second fluid in said second flow path in said at least three shims are separated by a distance of 5 mm or less and wherein the pressure in said flow path and the second flow path differ by at least 1 atm.

19. The process of claim 18 wherein the pressure in said flow path and the second flow path differ by at least 10 atm.

20. The process of claim 18 wherein the fluid in said flow path and the second fluid in said second flow path in said at least three shims are separated by a distance of 1 mm or less and wherein the pressure in said flow path and the second flow path differ by at least 19 atm.

21. The process of claim 17 wherein the fluid in the second flow path is a heat exchange fluid.

22. The process of claim 18 wherein the flow path comprises first supports that extend across the flow path, and the second flow path comprises second supports that extend across the second flow path; and

wherein the first supports and the second supports are staggered.

23. The process of claim 17 wherein the second fluid comprises a second reaction composition;

wherein the reaction composition reacts exothermically; and

wherein the second reaction composition reacts endothermically.

24. A process of conducting a unit operation on a fluid, comprising:

stacking a plurality of shims such that a continuous flow path is formed through the shims;

wherein the flow path is substantially parallel to shim thickness;

wherein the plurality of shims comprises at least three shims through which a flow path is formed and wherein the flow path in said at least three shims has a minimum dimension (height or width) of at least 10 μm;

bonding the shims to form a device capable of performing a unit operation on a fluid;

passing a fluid into the device such that the fluid passes through the flow path in said at least three shims; and

performing at least one unit operation on the fluid as it passes through the flow path in said at least three shims.

25. The process of claim 24 wherein the unit operation is selected from the group consisting of: chemical reaction,