

**34.** The method of claim **27**, wherein the diffusion barrier is a hydrophilic-hydrophobic interface, created by completely surrounding the hydrophilic reagents by hydrophobic liquid.

**35.** The method of claim **27**, wherein the diffusion barrier is created by a MEMS membrane valve.

**36.** The method of claim **27**, wherein the diffusion barrier is created by dielectric phoresis.

**37.** The method of claim **27**, wherein the plurality of fluidic zones comprises a sample zone, a cleaning zone, and a detection zone.

**38.** A device comprising:

a substrate containing a plurality of fluidic zones, each fluidic zone being connected to the adjacent fluidic zone by a diffusion barrier,

wherein each fluidic zone comprises a fluid,

wherein one or more fluidic zones comprises a magnetic particle, and

wherein the device is adapted to permit transport of the magnetic particle from one fluidic zone to an adjacent fluidic zone substantially without moving the fluid between the fluidic zones.

**39.** The device of claim **38**, wherein the diffusion barrier is a fluidic channel and/or a thermally-sensitive barrier.

**40.** The device of claim **38**, wherein the diffusion barrier is a hydrophilic-hydrophobic interface, created by completely surrounding the hydrophilic reagents by hydrophobic liquid.

**41.** The device of claim **38**, wherein the diffusion barrier is created by a MEMS membrane valve.

**42.** The device of claim **38**, wherein the diffusion barrier is created by dielectric phoresis.

**43.** The device of claim **38**, wherein the magnetic particle is a magnetic affinity complex, a competitive binding complex and/or a coded magnetic affinity complex.

**44.** The device of claim **38**, wherein the plurality of fluidic zones comprises a sample zone, a cleaning zone, and a detection zone.

**45.** The device of claim **44**, wherein the sample zone comprises a space for holding a sample, and is selected from a reservoir, a channel, an opening, a surface, or a combination thereof.

**46.** The device of claim **44**, further comprising an additional fluidic zone adapted for the storage of one or more reagents.

**47.** The device of claim **44**, wherein the detection zone comprises a reaction substrate that is capable of interacting with a catalytic element to form a reaction product.

**48.** The device of claim **38**, wherein multiple sets of fluidic zones are present in parallel in the device.

**49.** The device of claim **38**, wherein one or more fluidic zones comprises a signal affinity complex.

**50.** The device of claim **38**, further comprising an integrated circuitry component.

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