

CLAIMS

1. A method of manufacturing a planar waveguide for a flowcell, the method comprising:
forming a core layer, the core layer disposed between a substrate and a layer of resin, the layer of resin having nanowells to receive a sample, the core layer having a higher refractive index than the substrate and the layer of resin; and
forming a grating using nanoimprinting to couple light to the core layer,
wherein the core layer is formed onto the substrate;
wherein the core layer is formed in a separate process from forming the grating;
wherein the layer of resin is formed over the core layer; and
wherein the grating and the nanowells are formed in the layer of resin.
2. The method of claim 1, wherein the grating and the nanowells are formed in a common process.
3. A planar waveguide for a flowcell comprising:
a substrate;
a layer of resin having nanowells to receive a sample;
a core layer disposed between the substrate and the layer of resin, the core layer having a higher refractive index than the substrate and the layer of resin; and
a grating to couple light to the core layer,
wherein the core layer is disposed over the substrate;
wherein the core layer is formed in a separate process from forming the grating;
wherein the layer of resin is disposed over the core layer; and
wherein the grating and nanowells are disposed in the layer of resin.