

What is claimed is:

1. An apparatus comprising: a sensor comprising pixels; collimators optically coupling to the pixels a signal generated by interaction between probes and an analyte; wherein at least one of the collimators comprises a core and a sidewall surrounding the core; wherein the core comprises a void space.
2. The apparatus of claim 1, further comprising a filter blocking at least a portion of an excitation radiation under which the signal is generated.
3. The apparatus of claim 2, wherein the filter is a dichroic filter.
4. The apparatus of claim 1, further comprising a transmissive layer.
5. The apparatus of claim 1, further comprising microlenses.
6. The apparatus of claim 1, wherein the collimators comprise a meta-material or a photonic crystal.
7. The apparatus of claim 1, wherein the signal is generated under excitation of an excitation radiation; wherein the core comprises a material essentially preventing an excitation radiation from passing through irrespective of propagation direction of the excitation radiation.
8. The apparatus of claim 1, wherein the signal is generated under excitation of an excitation radiation; wherein the core comprises a dichroic filter.
9. The apparatus of claim 1, wherein the core allows the signal to pass through essentially unabsorbed.
10. The apparatus of claim 1, wherein the sidewall attenuates a portion of the signal reaching the sidewall.
11. The apparatus of claim 1, wherein the sidewall is textured.

12. The apparatus of claim 2, wherein the filter comprises a meta-material or a photonic crystal.

13. The apparatus of claim 1, wherein the pixels are arranged in an array.