WHAT IS CLAIMED IS:

1. A photonic device comprising:

a substrate; and

a photonic diode comprising a first region proximate a top surface of the substrate, a second region proximate the first region, and an active region between the first and second regions, wherein

the first region includes a surface adjacent the active region, the surface being generally parallel to the substrate top surface; and

the second region includes at least one defect-trapping region spaced from the active region, the defect trapping region is a rectangular protrusion extending perpendicular out of the second region and the height-width ration value of the rectangular protrusion to be at least one.

2. The photonic device of claim 1 wherein a surface of the first region is bonded to a handle substrate.

3. The photonic device of claim ~~1 wherein a surface of the first region is bonded to a handle substrate~~2 wherein an intermediate layer is bonded to the handle substrate between the first region and the handle substrate.

4. The photonic device of claim 2 wherein the handle substrate includes a conductor electrically connected to the first region.

5. The photonic device of claim ~~1~~ 2 further comprising a contact connected to the handle substrate and in electrical communication with the first region.