19. The method as claimed in claim 18, wherein the patterning step comprises using a SiO_2 mask to form the patterns during a separation by implantation of oxygen (SIMOX) process.

20. The method as claimed in claim 18 or 19, wherein the step of forming the III-nitride based light emitting structure further comprises forming a buffer layer directly on the patterned SOI substrate.

21. The method as claimed in any one of claims 18 to 20, wherein the patterned SOI substrate comprises a (111)-oriented Si overlayer and a (111)-oriented Si handle.

22. The method as claimed in any one of claims 18 to 21, wherein the SOI substrate is patterned with micron scale circular or hexagonal concentric type shapes to induce modulated emission from the vertical III-nitride based light emitting diode structure.

23. The method as claimed in any one of claims 18 to 22, wherein the SOI substrate is patterned using a separation by implantation of oxygen (SIMOX) process to create periodic Si overlayers which vary from about 10 nm to about 300 nm thick with a patterned buried oxide or silicon dioxide thickness ranging from about 60 to about 400nm.

24. A vertical III-nitride based light emitting diode structure, the structure comprising,

a III-nitride based light emitting structure for light emission formed on a metal-based substrate;

wherein the III-nitride based light emitting diode structure is formed by layer transfer from a ~~patterned~~ silicon-on-insulator (SOI) substrate comprising a patterned buried oxide layer, and

wherein a Group III metal content in the vertical III-nitride based light emitting diode structure is inhomogeneous for modulating light emission of the light emitting diode structure.