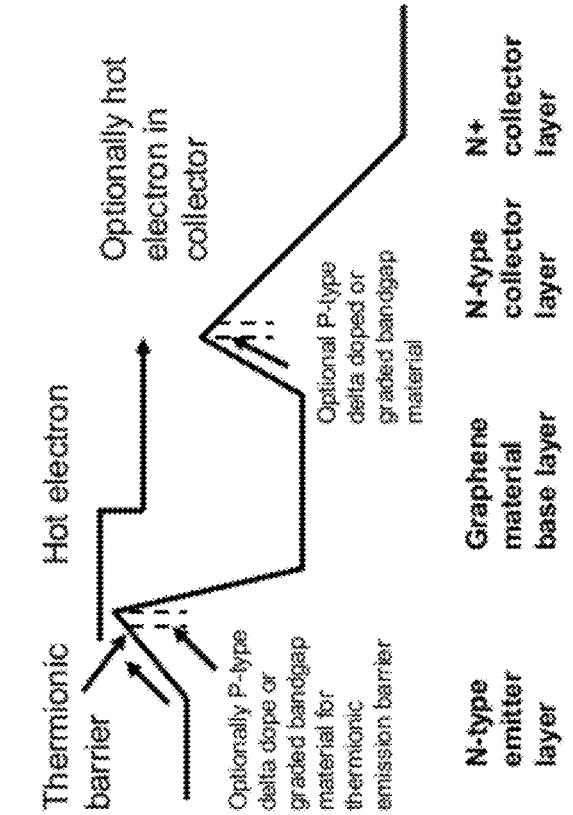
Thermionic barrier
Hot electron
Optionally hot electron in collector
Optionally P-type delta dope or graded bandgap material for thermionic emission barrier
Optional P-type delta doped or graded bandgap material
N-type emitter layer
Graphene material base layer
N-type collector layer
N+ collector layer

FIG. 2B

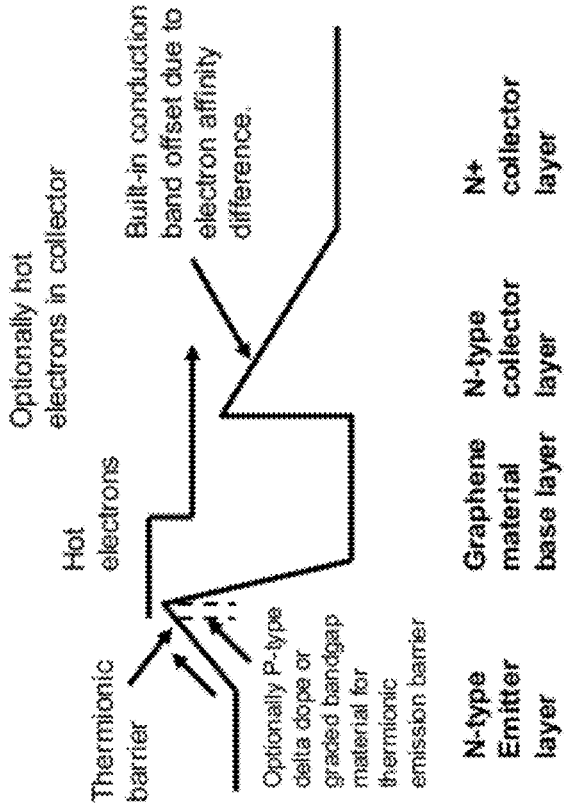
Thermionic barrier
Hot electrons
Optionally hot electrons in collector
Built-in conduction band offset due to electron affinity difference.
Optionally P-type delta dope or graded bandgap material for thermionic emission barrier
N-type Emitter layer
Graphene material base layer
N-type collector layer
N+ collector layer

FIG. 2A