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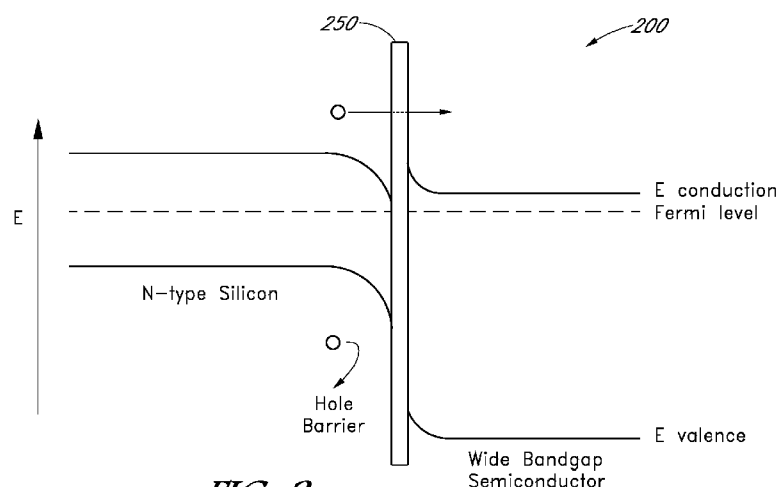
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(54) Title: SOLAR CELL HAVING AN EMITTER REGION WITH WIDE BANDGAP SEMICONDUCTOR MATERIAL

**FIG. 2**

(57) Abstract: Solar cells having emitter regions composed of wide bandgap semiconductor material are described. In an example, a method includes forming, in a process tool having a controlled atmosphere, a thin dielectric layer on a surface of a semiconductor substrate of the solar cell. The semiconductor substrate has a bandgap. Without removing the semiconductor substrate from the controlled atmosphere of the process tool, a semiconductor layer is formed on the thin dielectric layer. The semiconductor layer has a bandgap at least approximately 0.2 electron Volts (eV) above the bandgap of the semiconductor substrate.