

ABSTRACT

SILICON-GERMANIUM HYDRIDES AND METHODS FOR MAKING AND USING SAME

The present invention provides novel silicon-germanium hydride compounds, methods for their synthesis, methods for their deposition, and semiconductor structures made using the novel compounds. The compounds are defined by formula: $(\text{SiH}_{n1})_x (\text{GeH}_{n2})_y$, wherein x is 2, 3 or 4; wherein y is 1, 2 or 3; wherein $x + y$ is 3, 4 or 5; wherein $n1$ is independently 0, 1, 2, or 3 for each atom in the compound, to satisfy valency; and wherein $n2$ is independently 0, 1, 2 or 3 for each Ge atom in the compound, to satisfy valency; with the proviso that $n2$ is not 0 when y is 1; with the further proviso that when x is 3 and y is 1, then $n2$ is 2 or 3; and with the further proviso that when x is 2 and y is 1, then $n2$ is 3.

Figure 1



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