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Growth of FeSi nanowires by Chemical Vapour Deposition for Gas Sensing Applications

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Abstract content
   (Max 300 words)
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FeSi belongs to a class of narrow band gap semiconductors. It has been studied for more than 30 years because of its unusual properties such as its metal to insulator transition (MIT) at temperatures near 300 K [1,2]. We report on the synthesis of FeSi nanowires using chemical vapor deposition for gas sensing applications. Anhydrous FeCl3 powder was used as the precursor. N2 gas was used to carry the precursor vapors to the silicon substrates which were placed in a horizontal quartz tube furnace at a temperature of 1100oC. XRD and TEM results confirm that the nanowires are FeSi with a cubic crystal structure.

References
[1]J.R Szczech, S. Jin. Journal of Material Chemistry. 2010, 20, 1375-1382.
[2]S. Jang, Y. Lee, S. Kim, J. Seo, D. Kim, Material Letters, 2011, 65, 2979-2981.

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