

Si nano dots growth using pulse-type gas feeding with Si₂H₆ in LPCVD

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During the last few years, Si nano dots have been studied as the candidate of nanoscale storage node⁽¹⁾. A lot of people suggested several methods for growing the high density nano-dots⁽²⁾. But we have controlled the density and size of Si nano dots by using pulse-type gas feeding with Si₂H₆ in LPCVD. Formation of the Si nano dots was reproducible, and we obtained high density ($7.5 \times 10^{11} \text{ #/cm}^2$) and small size (5nm) of the nano dots. New process was used in the fabrication of MOS diode containing the storage node of Si nano dots, and the threshold voltage shift of $\sim 5\text{V}$ was measured in C-V plot.

[참고문헌]

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2. F. Mazen, T. Baron, A.M. Papon, R. Truche, J.M. Hartmann, Applied Surface Science 214, 359 (2003).