
# First-principles investigation on defect-induced silicene nanoribbons – A superior media for sensing $NH_3$, $NO_2$ and NO gas molecules

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## Highlights

- The band gap of pristine armchair silicene nanoribbons (ASiNR) is tuned by introducing defect.
- Defective ASiNR is suitable as an ideal sensor for $NH_3$, $NO_2$ and NO gas molecules.
- $NH_3$, $NO_2$ and NO behave as electron-donating gases, donating electronic charge to ASiNR.
- Electronic and transport properties of ASiNR-molecule complexes are studied.