

## Research progress on new silicon drift detector for X-ray detection

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Silicon drift detectors have important applications in electron microscopes (SEM), X-ray fluorescence spectroscopy (XRF), synchrotron radiation sources, and particle detection. We have systematically constructed a new type of silicon drift detector using innovative principles, structures, and processes. This report found that the doping concentration and doping depth of the anode of the silicon drift detector have an important influence on the collection of drift electrons. We increased the doping concentration of the anode of the silicon drift detector from  $1\text{E}18/\text{cm}^{-3}$  to  $1\text{E}20/\text{cm}^{-3}$ , and the doping depth from 50nm to 1000nm. It can be seen that the concentration of electrons collected at the anode has increased by more than 5 times, which is of great significance for improving the counting rate and detection efficiency.

### Collaboration you are representing

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