

20th Anniversary "Trento" Workshop on Advanced Silicon Radiation Detectors

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Silicon carbide detectors: from material advantage to new applications

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In this talk an overview of the advantage of silicon carbide detectors will be presented in terms of leakage current, signal resolution and radiation hardness. To obtain high performance in the detectors for different applications, new growth process of the epitaxial layers have been developed and the characteristics of the epitaxial layers have been obtained by electrical measurements. Furthermore, these detectors with different structures have been used in different applications (neutrons, high energy particles, UV, X-Ray, ...) and the main results of these detectors will be reported in this overview. Finally, a specific study on the radiation hardness of these detectors for high energy particles and of the effect of high temperature in the detection of neutrons will be presented.

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