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Progress on the Development of a Silicon-Carbon Nanotube Photodetector

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The properties of Carbon Nanotubes (CNT), the new allotropic status of carbon discovered in 1991, have been widely investigated in all possible application field. This new material in fact can be easily obtained chemically by CVD (Chemical Vapour Deposition) as a layer of nanotubes growth on a wide variety of materials. When growth on a semi conductive silicon surface, CNT create a semiconductor heterojunction with peculiar photoresponsivity properties.
We studied this heterojunction with the purpose to realize a large UV sensitive photocathode with high quantum efficiency in a large wavelength range from UV to IR. Results obtained up to day allowed us to build a new kind of photodetector very cheap, stable and easy to manage. Recently this new device has been proposed as one of candidates for the beam monitor system of Super B. In this talk we will report on recent improvements and performances of this detector.

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