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| <b>Patent title:</b>          | <b>Method of managing a silicon photomultiplier device</b>   |
| <b>FBK center:</b>            | CMM  |
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| <b>Patent family:</b>         | EP2381475 (B1) — 2015-03-04  |
| <b>Application(s):</b>        | Positron emission tomography (PET), Medical applications   |
| <b>Keyword(s):</b>            | Silicon photomultiplier, Photon detection  |
| <b>Abstract:</b>              | A method for managing a silicon photomultiplier device (SiPM) (1) for detecting one or more photons, comprising a surface (3) that is sensitive to photons, provided on a first side (4) of a semiconductor substrate (2) and defined by a plurality of sectors (6), each one of which comprises a plurality of photodiodes (5) operating in Geiger mode and connected to one another in parallel through conductor means (7) so as to define an analog output signal. The semiconductor substrate (2) comprises a plurality of extraction points (8) electronically insulated from one another, each one of which is connected to a corresponding sector (6) through the conductor means (7) so that the analog signals can be picked up and processed independently by a logic unit (9). According to this method, one or more of the sectors (6) are inhibited in the case where at least one of the photodiodes (5) belonging to the sectors (6) is not operating or is noisy. |