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New Photon BPM setup using SiC devices in photoconductive mode

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Silicon carbide (SiC) is a wide bandgap semiconductor material known for its excellent electrical, thermal, and mechanical properties. For these reasons, SiC detectors are increasingly being used as photon beam position monitors (pBPMs) in synchrotron radiation facilities, mainly replacing tungsten blades operating in photoemission mode.
We propose an innovative method using a matrix of intrinsic SiC photoconductive sensors (direct conversion of white beam), positioned immediately after the synchrotron source, each capable of separately detecting the light from the bending magnet and the insertion devices. Initial tests show sub-micron sensitivity and clear separation of beam contributions, offering a new way forward.

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