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## Medical Beam Monitor

Future medical ion beam applications for cancer therapy will require advanced beam diagnostics equipment. For a precise analysis of beam parameters a time resolution in the range of microseconds to nanoseconds is desirable. A prototype of an advanced beam monitor was developed by the University of Applied Sciences Wiener Neustadt and its research subsidiary Fotec in co-operation with CERN RD42, Ohio State University and the Jožef Stefan Institute in Ljubljana. The detector is based on polycrystalline Chemical Vapour Deposition (pCVD) diamond substrates and is equipped with read-out electronics up to 2 GHz analog bandwidth. In this paper we present the design of the pCVD-detector system and results of tests performed in various particle accelerator based facilities.

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