

Abstract Submitted
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The Real-Time Dose Measurement Scintillating Fiber Array for Brachytherapy Procedures LAWRENCE TYNES, Hampton University — Brachytherapy is a treatment modality that uses tiny radioactive sources (few mm in length) by delivering enough doses to kill cancer tumors or plaque build-up. The type of sources used in hospitals include both gamma and beta emitters. Presently, the technique suffers from not having a single detector with the capability of providing accurate dose distribution information within sub-mm accuracy. The current standard is based primarily on well chambers and film dosimetry. The Center for Advanced Medical Instrumentation (CAMI) at Hampton University is developing a Scintillating Fiber Based Beta Detector prototype in collaboration with the National Institute for Standards and Technology (NIST) to address this problem. The device is composed of an array of $1 \times 1 \text{ mm}^2$ scintillating fibers optically coupled to photomultiplier tubes for photon-to-current conversion. A CAMAC LabView based data acquisition system is used for real time data collection and histogramming, data analysis. A set of data were collected at the nearby Bon Secours DePaul Medical Center using a GammaMed 12i HDR after-loader housing a 6.62 mCi Ir-192 source. Preliminary comparison between our device and film dosimetry will be discussed.

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