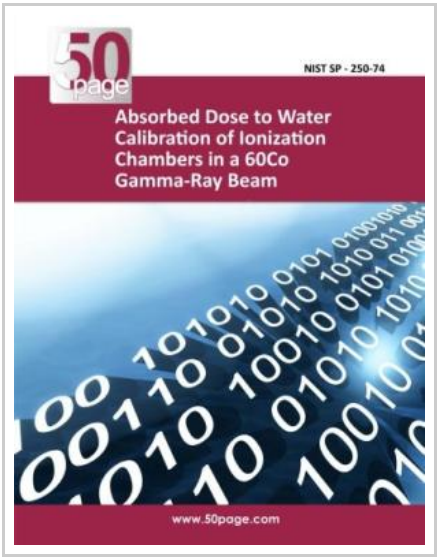

Absorbed Dose to Water Calibration of Ionization Chambers in a 60Co Gamma-Ray Beam

By NIST

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 54 pages. Dimensions: 11.0in. x 8.5in. x 0.1in.Absorbed-dose-to-water calibrations are important to the medical community to facilitate the accurate determination of doses delivered to tumors during external-beam cancer therapy. The first version of this document offered an absorbed-dose-to-water calibration service based on a graphite calorimeter as the primary standard. However, the use of this calorimeter necessitated calculations to convert the measurement from graphite to water. In 1989, a water calorimeter was introduced at the National Institute of Standards and Technology (NIST), which was to replace the graphite calorimeter as the primary standard. Though the calculations necessary for conversion factors were eliminated with this new technology, a calibration service based on the water calorimeter was not developed at this time. Despite the fact that the service was available, the medical physics community did not take advantage of it and used chambers calibrated in terms of exposure (in units of roentgen) to calibrate their radiotherapy 60Co and high-energy electron accelerator x-ray. A protocol, commonly known as TG21, developed by the American Association of Physicists in Medicine (AAPM), involves many calculations to arrive at the quantity desired by...

Reviews

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