

HEMISPHERICAL ^{252}Cf FISSION CHAMBERS FOR BETTER DISCRIMINATION OF ALPHA PARTICLE DECAY PRODUCTS

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Hemispherical fission chambers increase the ratio of the shortest fission product track length to longest alpha particle track length over that for parallel plate chambers. This allows for an increase in the ratio of fission to alpha particle pulse heights over a parallel plate ionization chambers and improves the ability to discriminate against alpha particle pulses and thus are more useful than parallel plate ionization chambers. Five one-inch-diameter fission chambers with 1 mm spacing have been constructed and evaluated with up to 2 μg of ^{252}Cf plated on one electrode. The measured characteristics of these chambers with improved discrimination against alpha particles are described.