Partial Bolus Verification of Patient Dose via MOSFET Dosimeters

MOSFET dosimeters are useful for a variety of patient dose measurements due to very small size and minimal build up. MOSFET dosimeter use for patient D_{max} dose verification requires the use bolus for x-ray beams. Use of partial (1 cm dosimeter bolus for 6 MV and 2 cm for 15 MV) rather than full bolus over the MOSFET minimizes perturbation of the patient dose. Measurements have been done to establish the relationship of partial bolus readings to the dose at D_{max} which indicate shallower D_{max} depth at shorter SSD and hence nearly full build-up at the partial bolus depth, presumably due to block tray scatter. Correction factors ranging from about 0.94 to 1.00 for D_{max} verification measurements with 15 MV and 6 MV x-ray beams and equal to 1.015 for point dose evaluation due to the method of calibration have been determined. The MOSFET dosimeters have performed well in both x-ray and electron beams with moderate precision.