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Transmission of electrons through tapered glass capillaries: Temporal dependence S. WICKRAMARACHCHI, D. KEERTHISINGHE, J.A. TANIS, Western Michigan Univ., T. IKEDA, RIKEN Nishina Center, Japan, B.S. DASSANAYAKE, University of Peradeniya, Sri Lanka — Electron transmission through a funnel-shaped borosilicate glass capillary as a function of the time evolution of the charge deposition has been studied for 500 and 1000 eV incident electrons. These measurements were done at Western Michigan University. The capillary had inlet/outlet diameters of 800 μm/100 μm and a length of 35 mm. The time dependence was studied for deposited charge in the range 0 - 1000 nC for each angle investigated, except for 5° at 1000 eV for which the measurements extended to 7000 nC. Measurements were obtained for the *direct* region near zero degree tilt angle where there are no collisions with the capillary walls, and for the *indirect* region for larger tilt angles (up to 5°) where electrons are deflected by the deposited charge or they collide with the capillary walls. In the direct region, the transmission showed no stable behavior with erratic fluctuations occurring for all deposited charges. In the indirect region, the transmission showed some fluctuations with rapid self-discharging but the transmission slowly increased with deposited charge. Total blocking was observed for 1000 eV at the tilt angle of 5° when the incident charge was higher than 6500 nC.

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