

A facility to mass-produce ordered single-hit patterns in continuous 35 mm films

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NUCL. INSTRUM. & METHODS IN PHYSICS RESEARCH B 260 (2007) 442-444

For more than 20 years, so-called single-hole membranes have been produced at GSI for medical purposes. They are produced by letting just one single ion hit a plastic membrane through a 100 μm diameter diaphragm and etching the latent track to the desired diameter.

More recently, these membranes have become popular to grow nano-wires electro-chemically or to create chemical sensors inside etched tracks. To create these microstructures in a faster and more controlled way, an apparatus has been added to the ion microprobe, which allows shooting micro-arrays of ion tracks into continuous 35 mm films of various plastic materials. This apparatus is presented and some problems encountered during its use.