

## **Characterization of the asymmetric action of a single pore in a track-etched membrane**

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*ACTA PHYSICA POLONICA B 32 (2001) 1605-1619*

Transport properties of a single pore in a track-etched poly(ethylene terephthalate) membrane are characterized using statistical analysis. Probability density function, autocorrelation function, power spectrum, Hurst and detrended fluctuation analysis, as well as Orey's index were the tools used to characterize the ion current behavior. The examined pore is conical in shape and has been obtained by one-sided electric field stopped etching. The pore has a highly nonlinear diode-like current-voltage characteristic, with preferential flow of ions in one direction. We show that the examined current fluctuations at  $-2V$  and  $+2V$ , however looking very similar, reflect differences in action of the system at the two polarities. The existence of longer memory for the weaker signal, recorded at  $-2V$ , has been found.