

# Bacterial chains signal their transit through a tuneable nanopore

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***Abstract***— The transit of particles through an electrolyte-filled pore in an insulating membrane causes a resistive pulse signal. This is the basis of some particle counters and sizers: for spherical particles the size of the pulse is an estimate of the particle volume.

For long particles, such as the chains formed by some types of bacteria, the transit time through a small pore will be extended according to the length of the chain. We investigate whether the pulse length statistics can be used to characterise the chain length distribution