Supplementary Materials for
Pore structures for high-throughput nanopore devices

The supplementary Information includes Supporting Figures (Figs. S1-S2)

SI 1. Electric field in the Si_3N_4/Si cylindrical nanopore.

SI 2. Electrical field in the Si_3N_4/Si IP-shaped nanopore with *d* = 500nm.

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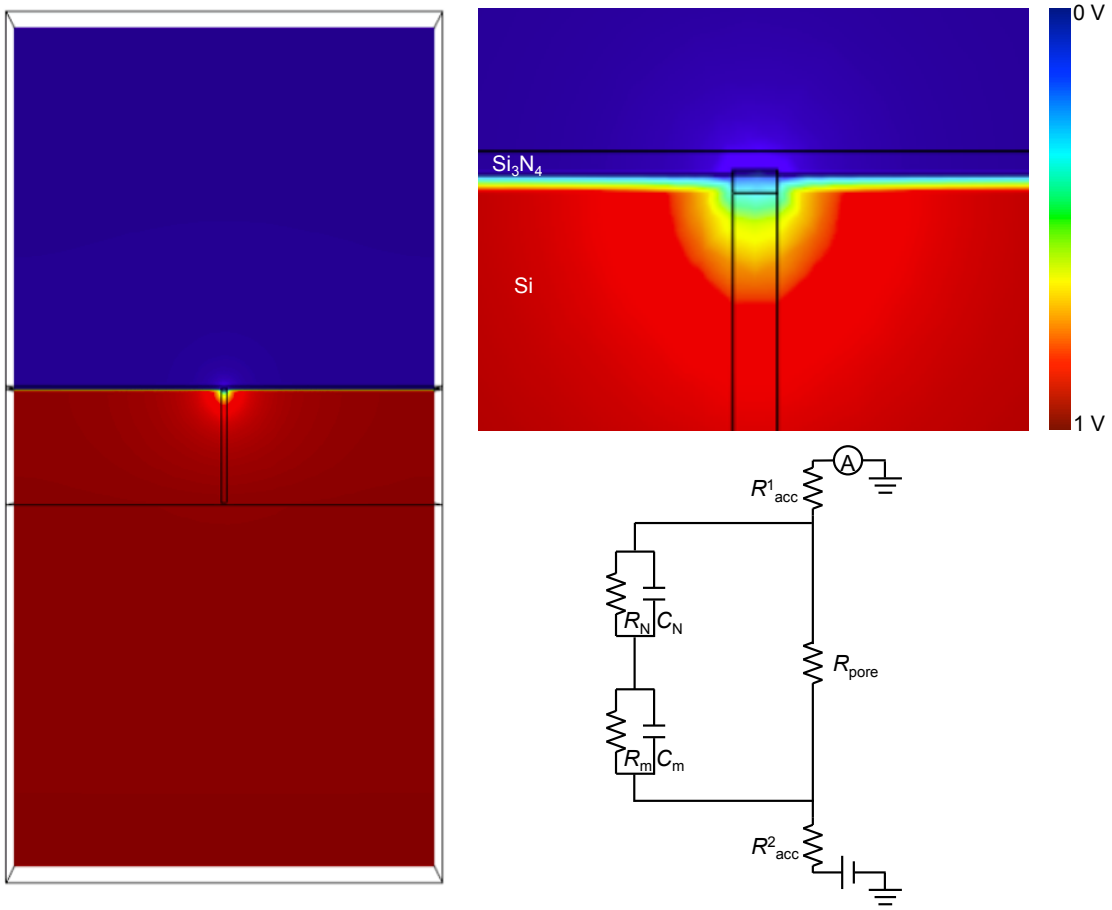

Figure S1. Electric field in the Si_3N_4/Si cylindrical nanopore.

As shown in Figure S1, this structure cannot cause the suitable electric field gradient within a nanopore device because the resistance of Si_3N_4 layer (R_N) and the pore resistance (R_{pore}) are placed in a parallel in the equivalent circuits for this structure. This equivalent circuit is essentially the same to that of the conventional cylinder nanopores.

SI 2. Electrical field in the Si_3N_4/Si IP-shaped nanopore with *d* = 500nm.

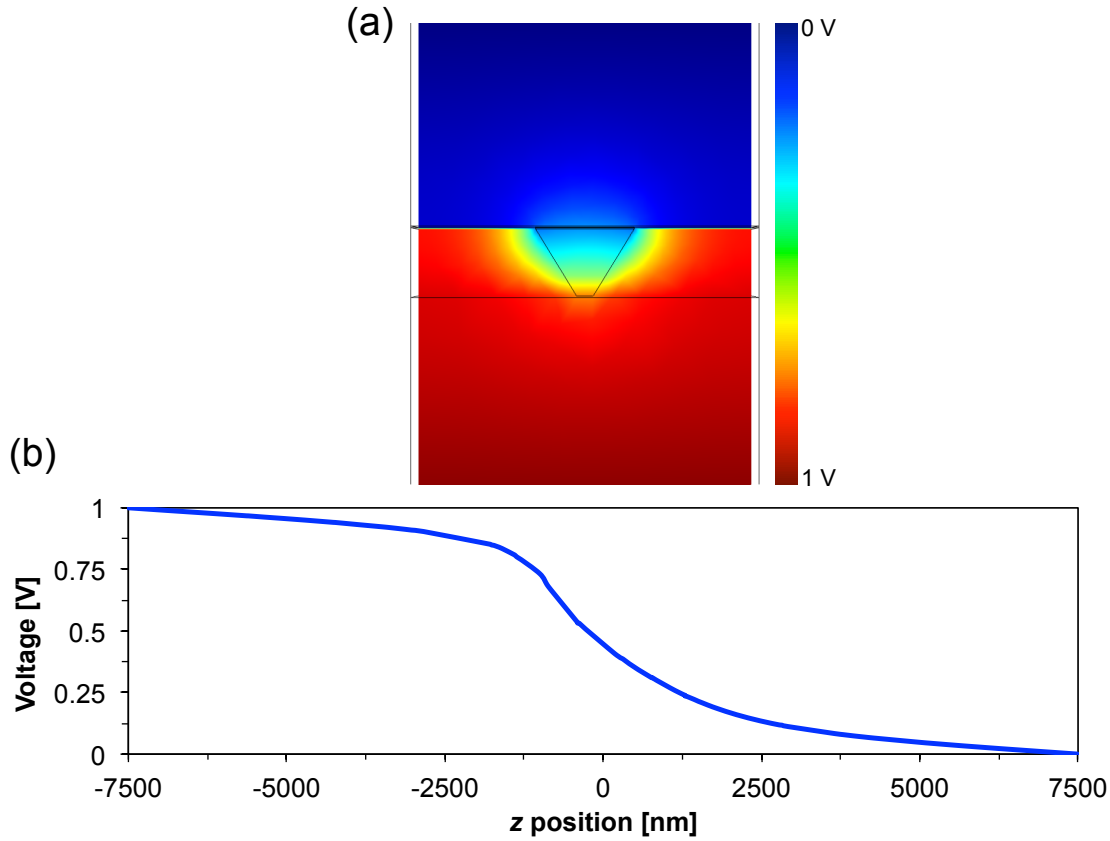

Figure S2. Electrical field in the Si3N4/Si IP-shaped nanopore with *d* = 500nm.

As shown in Figure S2, the Si_3N_4/Si IP-shaped nanopore with *d* = 500 nm results in almost the same electric field to that in the Si_3N_4/Si IP-shaped nanopore with *d* = 100 nm, meaning that the 500-nm-IP-shaped nanopore could show a high-throughput sensing as well as the IP-shaped nanopore discussed in the main text.