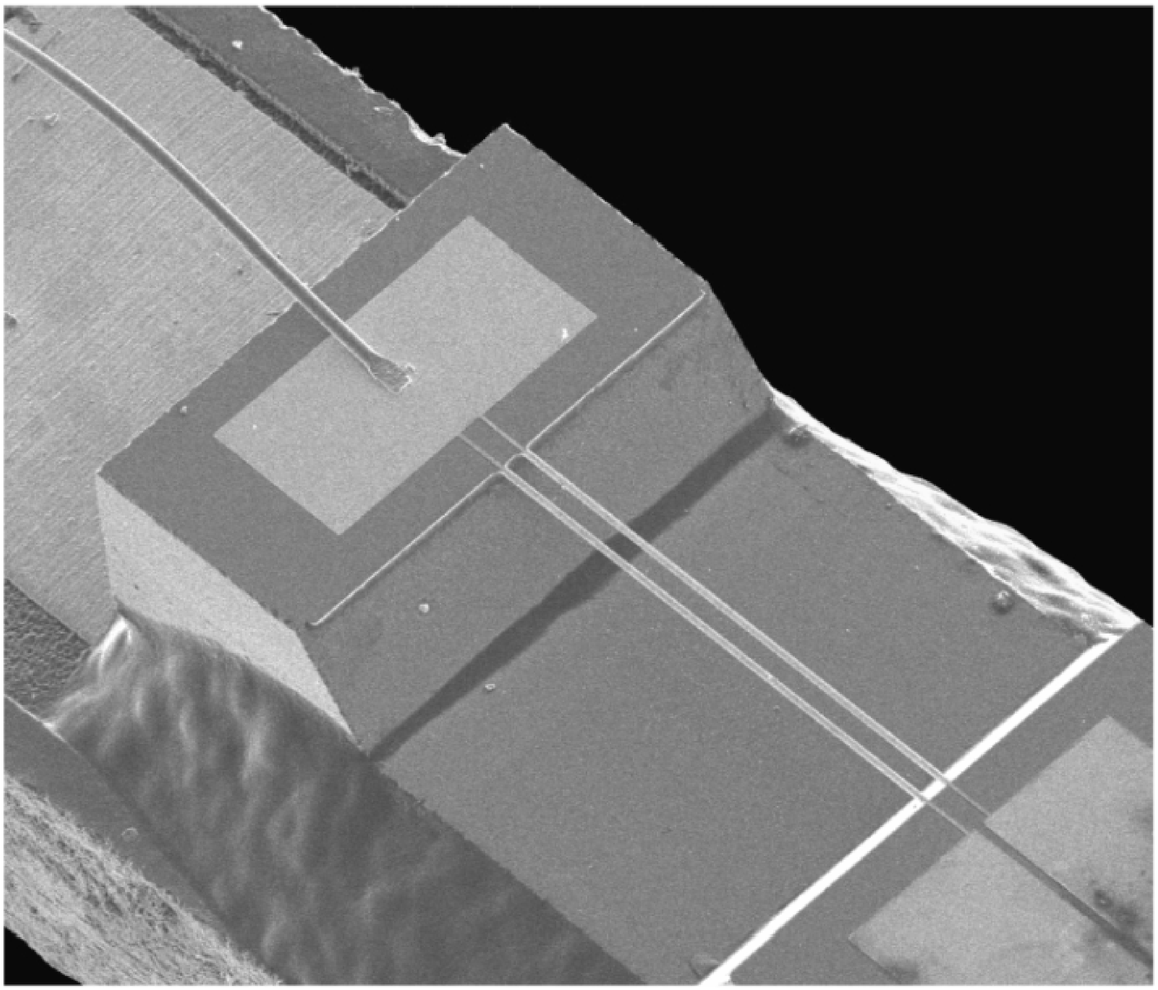
Note that because of the integrating op-amp's high gain $\left(R_{fb}/R_1\right)$ at very low frequencies, these types of particle velocity microphones are quite sensitive to wind/drafts/convection currents and also low-frequency ventilation/room noise…

The ***Microflown*** is a *MEMS* device (first developed at the University of Twente, in the Netherlands in 1994) that responds directly to particle velocity. The heart of the device consists of two parallel, very small-diameter platinum nano-wires separated by ~ 100 μm, heated to a temperature of T ~ 200 ^{o}C by passing a small electrical current I ~ few *mA* through them, as shown in the scanning electron microscope (SEM) image below:



In a sound field $\tilde{S}\left(\vec{r},t\right)$ the flow of air in the local vicinity of the two wires of the Microflown produces a small ***differential*** cooling of the two wires (this effect is similar, but not identical to the principle of how a so-called hot-wire anemometer works), as shown in the figure below: