

## **Taste Display for Virtual Reality**

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In this presentation, I propose a taste display for VR (Virtual Reality), and calibrate it in conjunction with a taste sensor. The taste display for VR is in the shape of a surgical mask, and if the user flicks his/her tongue, s/he will be able to touch gels connected with cathodes. The anode is attached to the neck. If the user wears an HMD (Head Mounted Display) with it, s/he can experience the taste as well as the video and sound.

When the Cathode is inserted into the aqueous solution and the anode is placed to the body, a decreased concentration of cations around the tongue is perceived. It is confirmed through experiments with five types of electrolyte solutions that this phenomenon inhibits all five basic tastes, and the stronger the current, the greater the effect on the sense of taste. I solidified five types of aqueous electrolyte solutions into gels in separate straws. Upon application of electricity, ion migration was observed, similar to that in the aqueous solutions, and the taste was inhibited in proportion to the intensity of the current.

On the other hand, the taste sensor, which are already commercially available devices, uses multiple lipid/polymer membranes that mimic the human tongue. The sensor exhibits global selectivity, an important feature of taste sensors, meaning that when two different substances taste the same to humans, the sensor produces the same response for each. I investigated the manner in which the five electrolytes were measured by the taste sensor. Consequently, for all the substances that can be measured with the taste sensor, the output corresponding to the measured value can be generated on the taste display.