

The Taste Sensor

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SUMMARY

The taste sensor showed a similar pattern in the same group of taste, while quite different patterns were obtained for different taste groups. In fact, the similar outputs were obtained for, e.g., NaCl, KCl and KBr eliciting saltiness, whereas their patterns differed clearly from those for other basic taste qualities. The taste of amino acids was classified into several groups in accordance with human taste sense. These facts imply that taste is measured with a fashion similar to the human gustatory sensation.

Different origins of coffees were measured using the taste sensor. As a result, they were easily discriminated; very high correlation was found between the output of the taste sensor and the sensory panel tests by humans for acidity and bitterness. Commercial canned coffees were also measured, and the two-dimensional taste map was obtained.

The taste sensor has the sensitivity, reproducibility and durability superior to those of humans. If we regard the electric potential response as the measure of acidity (and bitterness), then the taste of coffee can be quantified by this quantitative, objective determination.

The taste sensor will be applicable for quality control of coffee and also for the automatic production. The sense of taste is vague and largely depends on subjective factors of human feelings. If we compare the standard index measured using the taste sensor with the sensory evaluation, we will be able to assess the taste objectively. Moreover, the mechanism of information processing of taste in the brain as well as the reception at taste cells will be clarified by developing a taste sensor which has output similar to that of the biological gustatory system.