A Novel Chemosensor System Using Surface Plasmon Resonance Taste Sensor and Metal Oxide Odor Sensor for Quality Control of Vinegar

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A taste sensor based on surface plasmon resonance (SPR) with four channels is studied for quality control of the fermentation process of vinegar. Each channel of the SPR taste sensor responds to the change in quality of the vinegar which has been fermented for 1 day, 7 days and 14 days. The responses of each channel of the SPR taste sensor clearly change with the number of fermentation days, indicating that the SPR taste sensor will be useful for quality control in the preparation of vinegar. The SPR taste sensor also responds to different types of vinegar such as kome-su, junkome-su and gousei-su. It is also found that the commercially available odor sensor using a metal oxide semiconductor responds to the change in the odor intensity of the vinegar which is estimated using the human nose. These results suggest that a sensor system using an SPR taste sensor and a metal oxide odor sensor will be useful for identification of the types of vinegar.