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(1) Title: Visualization of odor with hyperspectral imaging of 2D plasmonic device

(2) Abstract: 2-dimensional odor/gas sensor is a key concept for practical use of a chemical sensor, because quite high throughput performance can be realized with high speed and high informative imaging device using plasmonics (LSPR/SERS; localized surface plasmon resonance/surface enhanced Raman spectrum). With this high-performance chemical imaging device where high-sensitive detection of gases and high-selective molecular finger print are provided, odor/gas flow, trance and distribution can be visualized in real time by using rich information from hyperspectral imaging of the plasmonic device. Machine-learning methods, that are less practical for the poor informative chemical sensors, can be adopted to discriminate various gases with the rich information from the sensor. The 2D chemical sensors are applied for odor trace sensing and odor source localization with the sensor robot.

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(4) Kenshi Hayashi graduated at Kyushu University in 1982, and received the Dr. Eng. degrees in electronics from Kyushu University in 1990. He became a professor of the Graduate School of Information Science and Electrical Engineering of Kyushu University in 2010. His current research interests include sensor technology, nano-material, nano electronic devices, and odor information. He is now a dean of graduate school of system life science, vice dean of graduate school of information science and electrical engineering of Kyushu University, and chief of Kyushu Chapter of the Japan Society of Applied Physics.