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Multichannel Odor Sensor Utilizing Surface Plasmon Resonance

Hidehito Nanto*, Fumio Yagi, Hisanori Hasunuma, Yoshinori Takei, Shin Koyama, Takeshi Oyabu[1] and Takashi Mihara[2]

Advanced materials Science R&D Center, Kanazawa Institute of Technology,
3-1 Yatsukaho, Hakusan, Ishikawa 924-0838, Japan
[1]Kanazawa Seiryo University, 10-1 Gosyo, Kanazawa, Ishikawa 920-8620, Japan
[2]Future Creation lab., Olympus Corp., 2-3-1 Nishi-shinjuku, Shinjuku, Tokyo 163-0914, Japan

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A multichannel odor sensor based on surface plasmon resonance (SPR) is demonstrated. Each thin film of acrylic acid and *N*,*N*-dimethylacetamide as a molecular recognition membrane is deposited on a gold thin-film/glass substrate by plasma chemical vapor deposition (CVD). The sensor with an acrylic acid thin film as the molecular recognition membrane exhibits an excellent selectivity for ammonia gas and the sensor with an *N*,*N*-dimethylacetamide thin film exhibits an excellent selectivity for acetic acid gas. Two types of odor sensor that can simultaneously detect ammonia and acetic acid gases with excellent selectivities are prepared on one chip substrate, and their gas sensing characteristics are studied.

*Corresponding author: e-mail: hnanto@neptune.kanazawa-it.ac.jp