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**Observation of a Small Number of Molecules at Metal Nanodimers arrayed on Solid Surface via Surface-Enhanced Raman Scattering**  
KEI MURAKOSHI, YOSHITAKA SAWAI, KATSUHIRO AJITO, <sup>c</sup> NTT Basic Research Laboratories — Novel approach for the detection of small number of molecules was investigated using metal coupled dot structures showing strong surface-enhanced Raman scattering (SERS). The SERS activities of Ag and Au nano-dot array were controlled via choosing appropriate gap distance between metal nano-dots and their structural anisotropy. Intense signals due to the strong Raman scattering of target molecules were observed when the optical absorption of the dots was tuned to be at the excitation wavelength in near-infrared region. Characteristics behavior of spectral blinking was observed at the system of the Au-Ag hetero-dimer array in solution.

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