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| **Abstract:** |  |
| A gold thin film with the thickness of 2nm on the TiO2(320) substrate has been fabricated in a UHV chamber at the pressure of 2x10-7 Torr. We observed the second harmonic response from the Au/TiO2(320) interface and bare TiO2(320) as a function of the rotation angle around the surface normal by using of a pulsed Nd3+: YAG laser as the excitation light at a photon energy of 1.17 eV and 2.33 eV. An isotropic response was observed from both samples for 1.17 eV photon energy excitation. In contrast, an anisotropic response was observed from both samples for 2.33 eV photon energy excitation. From the Au/TiO2(320) interface, anisotropic structure of SHG response was observed in the [230] direction for Pin/Pout polarization combination. Nonlinear susceptibility elements were decomposed and two groups of them were assigned as the main contribution from the step and terrace of the vicinal TiO2 surface. | |