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Photocurrent effect of epitaxial tetragonal-like BiFeO₃ thin film KANGHYUN CHU, CHANG-SU WOO, SEUNG JIN KIM, Department of Physics, KAIST, JI HO SUNG, WONMO LEE, MOONHO JO, Department of Materials Science and Engineering, POSTECH, CHAN-HO YANG, Department of Physics, KAIST — Photovoltaic effect in ferroelectrics has recently received many attentions due to potential applications related to optoelectronic devices and solar cells. Here we report photocurrent effect of highly elongated “tetragonal-like” BiFeO₃ thin films grown on LaAlO₃ (001) substrates using pulsed laser deposition technique. Spatially resolved photocurrent measurements are performed with varying photon wavelength and polarization. Being combined with local ferroelectric domain structure by piezoresponse force microscopy, the spatially resolved techniques make a pathway to explore inter-relation between electric polarization and photon polarization. This study might deepen our understating of light induced conduction phenomena in ferroelectrics.

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