

# Effects of proton irradiation on SnO<sub>2</sub>-based thin-film transistors

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Thin-film transistors (TFTs) are promising candidates for industrial and medical displays as well as in automotive and aerospace applications because they are cost-effective, low power consumption, high resolution and long lifespan [1]. In order to use it for space application, space radiation effects in TFTs must be evaluated. Therefore, there are many studies about radiation effects in TFTs based on IZO, ZnO, etc. [2-4]. SnO<sub>2</sub>-based TFT is attractive due to superior intrinsic electrical properties [5]. However, there was hardly research considering the radiation effects on SnO<sub>2</sub>-based TFT. In this study, we investigated the proton irradiation on the performance of SnO<sub>2</sub>-based TFT. The irradiated proton energy and fluence were 5 MeV and 1011 ~ 1011 cm<sup>-2</sup>, respectively. The threshold voltage of fabricated device was shift negatively by increasing proton fluences. We will analyze it to figure out the mechanism of this phenomenon.

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## Paper submission Plan

Yes

## Best Presentation

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## Contribution track

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