

## **Thin-film superconducting switching devices**

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Superconducting devices is not widely used, but they have some unique characteristics not available in standard semiconductor devices. They have high sensitivity with respect to amplification of electrical signals, detection of magnetic fields, and detection of light. Until the discovery of high temperature superconductors, these devices had the disadvantage of requiring ultra-low temperatures, on the order of a few Kelvin, but now they can operate even at liquid nitrogen temperatures.

In particular, superconducting devices have reached the point when we can realistically discuss a data storage technology operating at liquid nitrogen temperature. We are going to introduce various types of superconducting devices. Then we will propose a particular switching device, utilizing the phenomenon that the critical temperature of the FeSe thin-film superconductor can be tuned using a gate voltage. In this presentation, we explain the working principle and present the prototype of such a switching device.