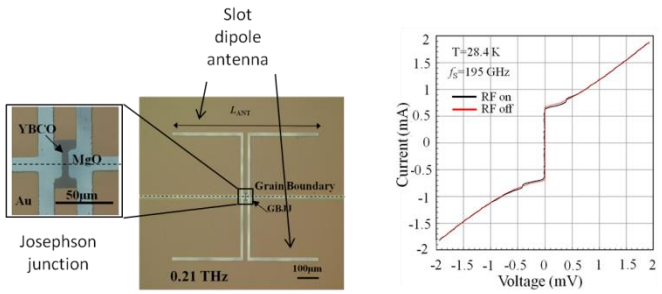
Terahertz wave detector and high-resolution magnetic particle method

Assistant Professor Hironobu Yamada

Illustration

Terahertz wave detector made of high-temperature superconductor

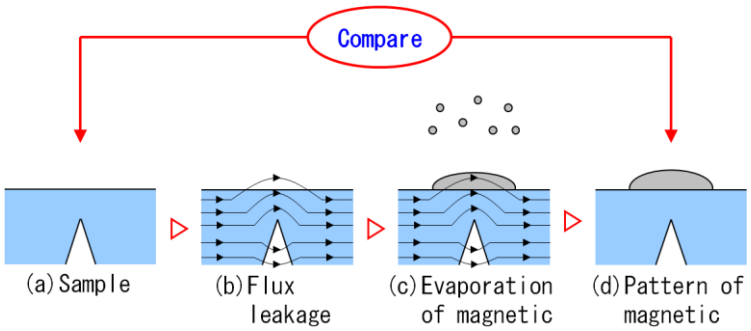


Detector for 0.21 THz

Current-voltage characteristics

Response to radio frequencies

High-resolution magnetic particle method



Principle of high-resolution magnetic particle method

Content:

Terahertz wave detector made of high-temperature superconductor

Terahertz wave detectors made of high-temperature superconductor have been developed. In each detectors, a Josephson junction and two slot dipole antennas are integrated. A detector for 0.2 THz was fabricated and measured a current-voltage characteristic to radio frequencies, consequently, the response to radio frequencies were detected.

High-resolution magnetic particle method

High-resolution magnetic particle method has been developed. This method is combined high-resolution Bitter method for observation of vortices in superconductors and magnetic particle method for non-destructive testing, and can detect flaws of micrometer order on and in the sample surface. I think that this method is useful for investigation of the mechanism of hydrogen embrittlement, for example.

Yamagata University Graduate School of Science and Engineering
Research Interest : Superconductivity, Measurement

E-mail : hyamada@yz.yamagata-u.ac.jp

HP : http://www.nakajima-lab.yz.yamagata-u.ac.jp