Abstract Submitted
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Study of radiation intensity characteristics from $Bi_2Sr_2CaCu_2O_{8+\delta}$ high-T_c superconducting terahertz emitters. T. KASHIWAGI, T. YUASA, H. KUBO, K. SAKAMOTO, C. WATANABE, T. KATSURAGAWA, T. TANAKA, Y. KOMORI, Y. TANABE, R. OTA, G. KUWANO, M. TSUJIMOTO, R. YOSHIZAKI, Univ. of Tsukuba, T. YAMAMOTO, Hasselt University, H. MINAMI, Univ. of Tsukuba, R. KLEMM, Univ. of Central Florida, K. KADOWAKI, Univ. of Tsukuba — According to our previous studies, the efficiency of the THz radiation from a high T_c superconducting emitter can be improved greatly when the stand-alone mesa structure of $Bi_2Sr_2CaCu_2O_{8+\delta}$ (Bi2212) single crystal and its sandwich structures are used for the emitter[1,2)]. The radiation characteristics obtained from above devices indicate clearly that the thermal management of the THz emitters is most important issue in order to obtain good radiation performance and reproducibility. Recently, we have studied the radiation intensity characteristics of the high T_c superconducting emitters, and compared the radiation characteristics of several rectangular mesa devices with different thickness up to ˜5 micrometer. The radiation intensity tend to increase with increasing the thickness of the mesa structures. A few tens of micro watt level of output power was observed from the thicker mesa devices. The radiation intensity also strongly depends on the fabrication process of the mesa devices and condition of the single crystal of Bi2212 used for the mesa devices. The detail will be discussed in the meeting. 1) T. Kitamura *et al.*, Appl. Phys. Lett. **105**, 202603 (2014) 2) T. Kashiwagi *et al.*, Appl. Phys. Lett. **107**, 082601 (2015)

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