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Presentation No. : 1-P-4**Aerosol Deposited Piezoelectric Films with Corona Poling at Room Temperature for Integrated Energy Harvesting and Wireless Transmission***☆Kohei Maruyama^{1*}, Yoshihiro Kawakami², Fumio Narita¹¹Tohoku university, Sendai, Miyagi 980-8579, Japan ²Research Institute for Electromagnetic Materials*kohei.maruyama.t8@dc.tohoku.ac.jp

Keyword: Aerosol deposition, Piezoelectric material, Energy harvesting, Corona poling, Wireless transmission

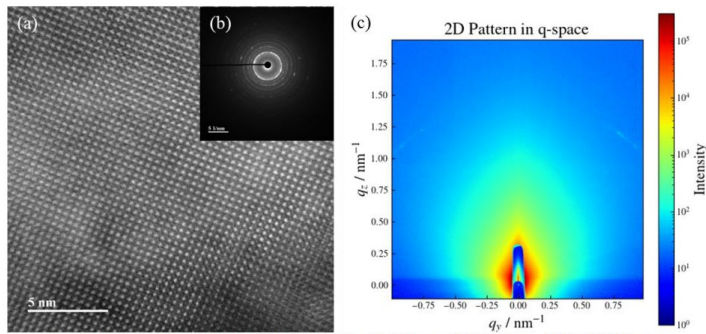
Highlights of This Poster Presentation

Fig. 1. Nanostructural characterization of the as-deposited film. (a) TEM image. (b) SAED pattern. (c) 2D GI-SAXS pattern.

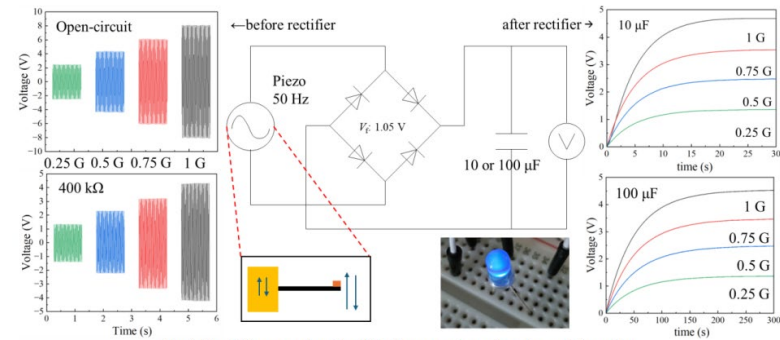


Fig. 2. Circuit diagram and results of vibration energy harvesting using a shaker system.

In this study, a barium titanate (BTO) film was deposited on a stainless steel substrate at room temperature and used without any post-annealing. First, the nanostructural characterization of the as-deposited film was examined. Then, non-contact poling was carried out using the corona poling method²⁾. Finally, the piezoelectric performance and energy harvesting capabilities were evaluated. Since this approach does not require annealing, it offers high substrate selection flexibility and the potential to integrate functional films for wireless communication on various substrates.