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## Seed layer-assisted fabrication of $\text{KNbO}_3$ nanowires on Cu foil

Varij Panwar<sup>a,b</sup>, Gil Woong Kim<sup>a</sup>, Gopinathan Anoop<sup>a</sup>, and Ji Young Jo<sup>a\*</sup>

<sup>a</sup>School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Oryong-Dong, Buk-Gu, Gwangju 61005, South Korea.

<sup>b</sup>Department of Electronics & Communication Engineering, Graphic Era University, Clement Town, Dehradun, Uttarakhand - 248002, India.

\*E-Mail: jyjo@gist.ac.kr

### Abstract

We demonstrated the fabrication of a cost-effective nanogenerator based on ferroelectric  $\text{KNbO}_3$  nanowires grown on a seed layer/Cu foil via a hydrothermal process. We controlled the concentration of both KOH and  $\text{Nb}_2\text{O}_5$  precursor solutions in order to manipulate the width and length of the  $\text{KNbO}_3$  nanowires grown on the seed layer/Cu foil. We found that our  $\text{KNbO}_3$ /Cu-based nanogenerator can produce sensing voltages up to 100 mV under an applied force as low as 0.8 N. Even at an extremely low force, our nanogenerator generates a sensing voltage, which can be used to charge implantable devices inside human bodies.

Keywords: nanowires,  $\text{KNbO}_3$ , copper foil, sensing voltage, nanogenerator

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