Tohoku Univ. Technology

Nanosheet and its manufacturing method

Possible to integrate into small electronic device and to control heat flow

Overview

Actually, the waste heat below 200℃ emitted by electronic device, etc., is difficult to control and therefore, it is not effectively reused. This heat reduces performance and lifespan of electronic device. A heat engine that uses MEMS to control the heat flow has been developed, but it requires a relatively large space to house the drive unit, making it difficult to integrate into small electronic device.

This invention is able to provide nanosheet and nanosheet manufacturing method. This nanosheet can be easily integrated into small electronic device, etc. which can control heat flow. It has a copper oxide layer with Cu and O bonded in a chain forming a ladder pattern, and its thickness is less than 100 nm. Due to this thinness, the nanosheet can be easily integrated into electronic devices that are becoming smaller, and the thermal conductivity can be controlled easily.

Product Application

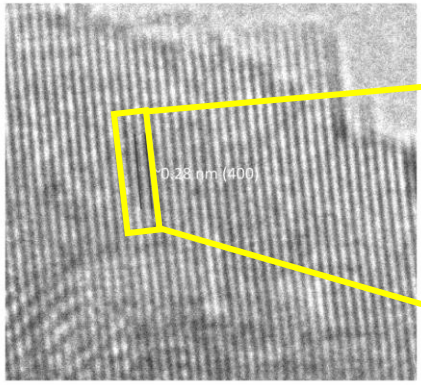
- Reuse of waste heat from electronic device, etc.
- Effective use of energy

IP Data

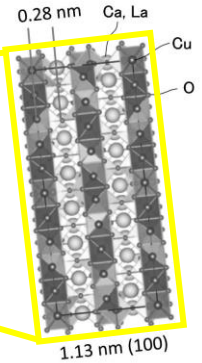
IP No.	:	JP2021-178767
Inventor	:	KINOSHITA Hiroya, TERAKADO Nobuaki, TAKAHASHI Yoshihiro, FUJIWARA Takumi
Admin No.	:	T19-821

TEM and AFM observations confirm that nanosheet of magnon heat-conductive material is obtained

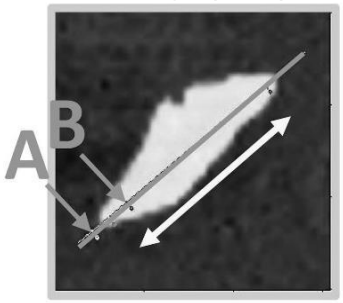
Transmission electron microscope image (TEM)



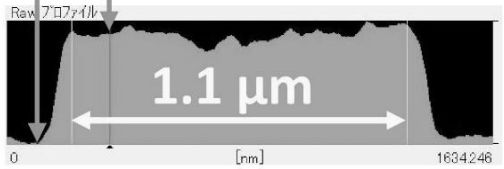
Crystal structure model



Atomic force microscope image (AFM)



A –B Height difference 2.7nm



Related Works

Contact

Tohoku Techno Arch Co., Ltd.
Please visit CONTACT here