

吳 宇璋 WU, Yuzhang

wuyz1913(at)foxmail.com



Room: Research Institute for Electronic Science 3F 03-106

TEL: +81-11-706-9433 / FAX: +81-11-706-9432

keywords: Transparent oxide semiconductor devices, Electric field thermopower modulation

 [0000-0002-6173-4994](#)

Home town China

Biography

Ph. D candidate, in Graduate School of Information Science and Technology, Hokkaido University, Japan, Oct. 2019-current

M.Information Science., Graduate School of Information Science and Technology, Hokkaido University, Japan, Oct. 2017-Sep. 2019

B.E., College of Electronic Science and Engineering, Jilin University, China, July 2013-June 2017

Original Papers (6)

[6] **Yuzhang Wu**, Prashant R. Ghediya, Yuqiao Zhang, Yasutaka Matsuo, Hiromichi Ohta*, and Yusaku Magari*, "Thermopower Modulation Analyses of Effective Channel Thickness for Zn-incorporated In₂O₃-based Thin-Film Transistors", *Jpn. J.*

Appl. Phys. 63, 126501 (2024). (DOI: [10.35848/1347-4065/ad971b](https://doi.org/10.35848/1347-4065/ad971b))

[5] **Yuzhang Wu**, Yusaku Magari*, Prashant Ghediya, Yuqiao Zhang, Yasutaka Matsuo, Hiromichi Ohta*, "High-mobility and High-reliability Coexistence in Zn-incorporated Amorphous In₂O₃-based Thin-Film Transistors", *Jpn. J. Appl. Phys.* 63, 076504 (2024). (July 25, 2024) (DOI: [10.35848/1347-4065/ad5ee6](https://doi.org/10.35848/1347-4065/ad5ee6))

[4] Hai Jun Cho*, **Yuzhang Wu**, Jiajun Qi, Yuna Kim, and Hiromichi Ohta, Osamu Matsuda*, "Specular acoustic vibrational wave transmissions with the presence of phononic bandgaps", *J. Phys. Soc. Japan* 91, 014601 (2022). (December 3, 2021) (DOI: [10.7566/JPSJ.91.014601](https://doi.org/10.7566/JPSJ.91.014601))

[3] Jiajun Qi, **Yuzhang Wu**, Hai Jun Cho*, Yuna Kim*, Hiromichi Ohta, and Nobuyuki Tomaoki, "Pressure-tunable thermal conductivity observed from bisamide functionalized diacetylene crystals", *J. Mater. Sci.* (2021). (June 22, 2021) (DOI: [10.1007/s10853-021-06192-7](https://doi.org/10.1007/s10853-021-06192-7))

[2] Hai Jun Cho*, **Yuzhang Wu**, Yuqiao Zhang, Bin Feng, Masashi Mikami, Woosuck Shin, Yuichi Ikuhara, Yu-Miin Sheu, Keiji Saito, and Hiromichi Ohta*, "Anomalously Low Heat Conduction in Single-Crystal Superlattice Ceramics Lower than Randomly Oriented Polycrystals", *Adv. Mater. Interfaces* 2001932 (2021). (February 15, 2021) (DOI: [10.1002/admi.202001932](https://doi.org/10.1002/admi.202001932))

[1] Fabian Krahl, **Yuzhang Wu**, Hai Jun Cho*, Maarit Karppinen, and Hiromichi Ohta*, "Spontaneous generation of carrier electrons at the interface between polycrystalline ZnO and amorphous InGaZnO₄", *Adv. Electron. Mater.* 6, 2000404 (2020). (September 11, 2020) (DOI: [10.1002/aelm.202000404](https://doi.org/10.1002/aelm.202000404))

Presentations (13)

[13] **Yuzhang Wu**, Yusaku Magari, Prashant R. Ghediya, Yuqiao Zhang, Yasutaka Matsuo, Hiromichi Ohta, "Role of Zn Introduction in In₂O₃ TFTs –Suppression of Grain Boundary Scattering –", [2024 年 第 71 回 応用物理学会春季学術講演会](#), 東京都市大学 世田谷キャンパス, 東京, 2024 年 3 月 22 日-25 日.

[12] **Yuzhang Wu**, Yusaku Magari, Prashant Ghediya, and Hiromichi Ohta, "Modulation of Electron Transport Properties of Amorphous In-Zn-O Films with Varied Zn Concentrations", [第 59 回 応用物理学会北海道支部 / 第 20 回 日本光学会北海道支部 合同学術講演会](#), 北海道大学, 札幌市, 2024.1.6 – 7.

[11] **Yuzhang Wu**, Yusaku Magari, Prashant Ghediya, and Hiromichi Ohta, "Modulation of Electron Transport Properties of Amorphous In-Zn-O Films with Varied Zn Concentrations", [The 24th RIES-HOKUDAI International Symposium 開](#)

[[kai](#)], Hokkaido University, Sapporo, Japan, December 6-7, 2023.

[10] **Yuzhang Wu**, Yusaku Magari, Prashant Ghediya, and Hiromichi Ohta, "Modulation of electron transport properties of amorphous In-Zn-O films with varied Zn concentrations", [The Mini-Workshop on Functional Materials Science \(Organizers' meeting\)](#), Sapporo, Japan, December 1-2, 2023. (Poster)

[9] **Y. Wu**, H.J. Cho, Y. Zhang, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, Y. Sheu, K. Saito, and H. Ohta, "Anomalously Low Heat Conduction in Single-Crystal Superlattice Ceramics Lower than Randomly Oriented Polycrystals", [2021年 第68回 応用物理学会春季学術講演会](#), online, 2021.3.16-19.

[8] **Y. Wu**, H.J. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, K. Saito, and H. Ohta, "Phonon propagation competition across natural superlattice $\text{InGaO}_3(\text{ZnO})_m$ ", [The 3rd Workshop on Functional Materials Science](#), Sapporo, Japan, December 18th-20th, 2019. (Poster)

[7] **Yuzhang Wu**, Hai Jun Cho, Bin Feng, Masashi Mikami, Woosuck Shin, Yuichi Ikuhara, Keiji Saito, and Hiromichi Ohta, "Thermal conductivity of $\text{InGaO}_3(\text{ZnO})_m$ ($m = \text{integer}$) natural superlattice", RIES-NCTU Workshop, Hokkaido University, Sapporo, Japan, December 3-4, 2019. (Poster)

[6] **Yuzhang Wu**, Hai Jun Cho, Bin Feng, Masashi Mikami, Woosuck Shin, Yuichi Ikuhara, Keiji Saito, and Hiromichi Ohta, "Thermal conductivity of $\text{InGaO}_3(\text{ZnO})_m$ ($m = \text{integer}$) natural superlattice", [The 20th RIES-HOKUDAI International Symposium](#), Hokkaido University, Sapporo, Japan, December 2-3, 2019. (Poster)

[5] **Y. Wu**, H.J. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, K. Saito, and H. Ohta, "Anisotropic Heat Transport of Natural Superlattice Oxide, $\text{InGaO}_3(\text{ZnO})_m$ ", [The 80th JSAP Autumn Meeting 2019](#), Sapporo, Japan, September 18-21, 2019.

[4] **Y. Wu**, H. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, and H. Ohta, "Natural superlattice structure based ultralow thermal conductivity in $\text{InGaO}_3(\text{ZnO})_m$ single crystalline films", 第 54 回応用物理学会北海道支部/第 15 回日本光学会北海道支部合同学術講演会, サン・リフレ函館, 北海道函館市, 2019 年 1 月 5 日-6 日

[3] **Y. Wu**, H.J. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, K. Saito, H. Ohta, "Kapitza resistance based ultralow thermal conductivity of natural superlattice ceramic single crystalline films", [The 19th RIES-HOKUDAI International Symposium 組\[So\]](#), Jozankei View Hotel, Sapporo, December 11th-12th, 2018 (Poster)

[2] **Y. Wu**, H. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, and H. Ohta, "Heat transportation across parallel layers of natural superlattice $\text{InGaO}_3(\text{ZnO})_m$ single crystalline films", [The 2nd Workshop on Functional Materials Science](#), Busan, South

Korea, October 22-23, 2018

[1] **Y. Wu**, H. Cho, B. Feng, M. Mikami, W. Shin, Y. Ikuhara, and H. Ohta, "Cross-plane thermal conductivity of $\text{InGaO}_3(\text{ZnO})_m$ ($m=\text{integer}$) single crystalline thin films", 2018 年 第 79 回 応用物理学会秋季学術講演会, 名古屋国際会議場 (名古屋・愛知) , 2018 年 9 月 18 日-21 日