ZHANG, Yu-Qiao (張 雨橋)

yuqiaozhang0730(at)gmail.com

Room: Research Institute for Electronic Science 3F 03-106
TEL: +81-11-706-9433 / FAX: +81-11-706-9432
keywords: Thermoelectric materials, Reactive Solid-Phase Epitaxy

0000-0001-7579-4923

The date of birth	30th July, 1989
Blood type	AB
Home town	Jinan, China

Biography

JSPS Postdoctoral Fellow, April 2019 – current

Ph. D., Graduate School of Information Science and Technology, Hokkaido University, April 2016 – March 2019 (supervisor: Prof. Hiromichi Ohta)

Research student, Research Institute for Electronic Science, Hokkaido University, October 2015 – March 2016

M.E., School of Materials Science and Engineering, University of Science and Technology Beijing (USTB), September 2012 – January 2015 (supervisor: Prof. Bo-Ping Zhang)

B.E., School of Materials Science and Engineering, University of Jinan, September 2008 – July 2012

Original Papers (14)

[14] 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)

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[11] Seung Gyo Jeong, Taewon Min, Sungmin Woo, Jiwoong Kim, **Yu-Qiao Zhang**, Seong Won Cho, Jaeseok Son, Young-Min Kim, Jung Hoon Han, Sungkyun Park, Hu Young Jeong, Hiromichi Ohta, Suyoun Lee, Tae Won Noh, Jaekwang Lee* and Woo Seok Choi*, "Phase Instability amid Dimensional Crossover in Artificial Oxide Crystal", *Phys. Rev. Lett.* **124**, 026401 (2020). (January 13th, 2020) (DOI: 10.1103/PhysRevLett.124.026401)

[10] **Yuqiao Zhang***, Kenyu Sugo, Hai Jun Cho, and Hiromichi Ohta*, "Thermoelectric Phase Diagram of the $SrTiO_3$ – $LaTiO_3$ Solid-Solution System through a Metal to Mott Insulator Transition", *J. Appl. Phys.* **126**, 075104 (2019). (August 15th, 2019) (DOI: 10.1063/1.5100993)

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[8] **Yuqiao Zhang**, Bin Feng, Hiroyuki Hayashi, Cheng-Ping Chang, Yu-Miin Sheu, Isao Tanaka, Yuichi Ikuhara & Hiromichi Ohta, "Double thermoelectric power factor of a 2D electron system", *Nature Communications* **9**, 2224 (2018). (DOI: 10.1038/s41467-018-04660-4) **Detail**

[7] Yukio Nezu, **Yu-Qiao Zhang**, Chunlin Chen, Yuichi Ikuhara, and Hiromichi Ohta, "Solid-phase epitaxial film growth and optical properties of a ferroelectric oxide, $Sr_2Nb_2O_7$", *J. Appl. Phys.* **122**, 135305 (2017). (DOI: 10.1063/1.4997813)

[6] **Yuqiao Zhang**, Bin Feng, Hiroyuki Hayashi, Tetsuya Tohei, Isao Tanaka, Yuichi Ikuhara, and Hiromichi Ohta, "Thermoelectric phase diagram of the $SrTiO_3$-$SrNbO_3$ solid solution system", *J. Appl. Phys.* **121**, 185102-1-7(2017). (DOI: 10.10631/1.4983359)

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[1] **Yu-qiao Zhang** and Hiromichi Ohta, “2D thermoelectrics”, 2D Nanomaterials for Energy Applications (1st Edition) (Elsevier) (November 1st, 2019).

Invited Talks (1)

[1] Hiromichi Ohta, **Yu-Qiao Zhang**, “Double enhancement of thermoelectric power factor in oxide two-dimensional electron system via precise dimensionality control”, 2017 Fall Korean Physical Society (KPS) Meeting, Gyeongju, Korea, 25-27 October, 2017 (Invited)

Presentations (21)

[23] **Yuqiao Zhang**, Hai Jun Cho and Hiromichi Ohta, “Electron and heat transport properties of $BaTiO_3$ – $BaNbO_3$ solid solution epitaxial films”, The 21st RIES-Hokudai International Symposium 間 [ma], online, December 10-11, 2020 (poster).

[22] **Yuqiao Zhang**, Yugo Takashima, Jiake Wei, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, Hiromichi Ohta, “Layered Cobalt Oxide Epitaxial Films Exhibiting Thermoelectric ZT = 0.11 at Room Temperature”, 第 14 回物性科学領域横断研究会, online, December 4-5, 2020. (oral)

[21] **Y. Zhang**, H.J. Cho, K. Sugo, M. Mikami, S. Woo, M.-C. Jung, Y.-H. Zhuang, B. Feng, Y.-M. Sheu, W. Shin, W.S. Choi, M.J. Han, Y. Ikuhara, and H. Ohta, “Branching of Electrical and Thermal Conductivities in La- and Nb-substituted $SrTiO_3$“, Virtual Conference on Thermoelectrics (VCT 2020), online event, July 21-23, 2020.

[20] **Y. Zhang**, H.J. Cho, K. Sugo, M. Mikami, S. Woo, M.-C. Jung, Y.H. Zhuang, Y-M. Sheu, W. Shin, W.S. Choi, M.J. Han, and H. Ohta, “Zero contribution of conduction electrons in the thermal conductivity of a metallic conductor”, The 3rd Workshop on Functional Materials Science, Sapporo, Japan, December 18th-20th, 2019. (Poster)

[19] **Yuqiao Zhang**, Hai Jun Cho, Kenyu Sugo, Masashi Mikami, Sungmin Woo, Myung-Chul Jung, Woosuck Shin, Woo Seok Choi, Myung Joon Han, and Hiromichi Ohta, "High and Low Thermal Conductivity Phase Boundary in $SrTiO_3$ – $SrNbO_3$ Solid-Solution System", 2019 MRS Fall Meeting & Exhibit, Boston, MA, December 1-6, 2019. (Poster)

[18] **Yuqiao Zhang**, Hai Jun Cho, Kenyu Sugo, Masashi Mikami, Sungmin Woo, Myung-Chul Jung, Woosuck Shin, Woo Seok Choi, Myung Joon Han, and Hiromichi Ohta, "High and Low Thermal Conductivity Phase Boundary in $SrTiO_3$ – $SrNbO_3$ Solid-Solution System", 2019 年 第 80 回応用物理学会秋季学術講演会, 北海道大学 札幌キャンパス, 北海道札幌市, 2019 年 9 月 18 日-21 日

[17] **Y. Zhang**, H.J. Cho, M. Mikami, S. Woo, M. Jung, W.S. Shin, W.S. Choi, M.J. Han, and H. Ohta, "Anomalous change of heat transfer in $Sr(Ti,Nb)O_3$ solid solution", 2019 年 第 66 回 応用物理学会春季学術講演会, 東京工業大学 大岡山キャンパス(東京都目黒区), 2019 年 3 月 9 日-12 日

[16] **Y. Zhang**, H.J. Cho, M. Mikami, W.S. Shin, W.S. Choi, H. Ohta, "Phase transition induced anomalous phonon transports in $SrTiO_3$–$SrNbO_3$ system", The 19th RIES-HOKUDAI International Symposium 組[So], Jozankei View Hotel, Sapporo, December 11th-12th, 2018 (Poster)

[15] **Y. Zhang**, H.J. Cho, M. Mikami, W.S. Shin, W.S. Choi, and H. Ohta, "Anomalous phonon transport in $SrTi_{1-x}NbxO_3$ alloy", The 2nd Workshop on Functional Materials Science, Busan, South Korea, October 22-23, 2018

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[12] **Y. Zhang**, B. Feng, H. Hayashi, I. Tanaka, Y. Ikuhara, and H. Ohta, "Double enhancement o thermoelectric power factor in advanced oxide two-dimensional electron system", 2018 MRS Spring Meeting & Exhibit, Phoenix, Arizona, 2-6 April, 2018 (Oral)

[11] **Y. Zhang**, B. Feng, H. Hayashi, I. Tanaka, Y. Ikuhara, and H. Ohta, "Double enhancement of thermoelectric power factor in advanced oxide two-dimensional electron system", The 18th RIES-Hokudai International Symposium 極 [Kyoku], Chateraise Gateaux Kingdom Sapporo, Sapporo, Japan, 30 Nov.-1 Dec. 2017 (Poster)

[10] **Yuqiao Zhang**, Bin Feng, Hiroyuki Hayashi, Isao Tanaka, Yuichi Ikuhara and Hiromichi Ohta, “Large enhancement in effective thermoelectric power factor of Sr(Ti,Nb)O_3 superlattice”, 平成 29 年度日本セラミックス協会 東北北海道支部研究発表会, Sendai, Japan, 1-2 November, 2017 (Oral)

[9] **Y. Zhang**, B. Feng, H. Hayashi, T. Tohei, I. Tanaka, Y. Ikuhara, and H. Ohta, “Thermoelectric Performance of $SrTi_{1-x}Nb_xO_3$ System (Bulk and Superlattices)”, IUMRS-ICAM 2017 (The 15th International Conference on Advanced Materials), Yoshida Campus, Kyoto University, Kyoto, Japan, 27 Aug.-1 Sep. 2017 (Oral).

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[7] **Yu-Qiao Zhang** and Hiromichi Ohta, “Effective power factor of Sr(Ti,Nb)O_3/$SrTiO_3$ superlattices”, 第 64 回応用物理学会春季学術講演会, Yokohama, Japan, 14-17 March, 2017 (Oral)

[6] **Yu-Qiao Zhang** and Hiromichi Ohta, “Improvement of thermoelectric power factor of heavily Nb-doped $SrTiO_3$ superlattices”, 第 52 回応用物理学会北海道支部/第 13 回日本光学会北海道支部合同学術講演会, Kitami, Japan, 7-8 January, 2017 (Oral)

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[3] **Yuqiao Zhang**, Takaki Onozato, Takayoshi Katase, Hiromichi Ohta, “Electron transport properties of $SrTiO_3$-$SrNbO_3$ full range solid solutions”, HOKUDAI-NCTU International Joint Symposium on Nano, Opto and Bio Sciences, Hokkaido University, Sapporo, Japan, 4-5 Oct. 2016 (poster)

[2] **Yuqiao Zhang**, Takayoshi Katase, Takaki Onozato, Bin Feng, Hiroyuki Hayashi, Tetsuya Tohei, Isao Tanaka, Yuichi Ikuhara, Hiromichi Ohta, “Hidden Electronic Phase Boundary in the $SrTiO_3$–$SrNbO_3$ Solid-solution System”, 2016 年 第 77 回応用物理学会秋季学術講演会, Niigata, Japan, 13-16 September, 2016 (Poster)

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Press report (70)

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[2] OPTRONICS ONLINE, "北大、熱電変換材料の性能を 2 倍にできることを実証", 2018 年 6 月 21 日 (in Japanese)

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Award (2)

[2] The 50th Matsumoto-Hatori Award, Research Institute for Electronic Science, Hokkaido University (2021.2.18)

[1] 北海道大学大学院情報科学研究科　研究科長賞