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略歴

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2016年9月 - 2018年8月：修士(理学), 釜山大学校 物理 (指導教員: ジン ヒョンジン 准教授)

2013年3月 - 2016年8月：学士(理学), 釜山大学校 物理

2011年3月 - 2013年2月：学士(理学) 課程, 釜慶大学校 物理

ResearcherID

ResearchGate

LinkedIn



原著論文 (15)

- [15] Xi Zhang*, **Gwoon Kim**, Qian Yang, Jiake Wei, Bin Feng, Yuichi Ikuhara, and Hiromichi Ohta*, "Solid-State Electrochemical Switch of Superconductor-Metal-Insulators", *ACS Appl. Mater. Interfaces* in press
- [14] Binjie Chen*, **Gwoon Kim**, Hai Jun Cho, and Hiromichi Ohta*, "Room Temperature Insulator-to-Metal Transition of VO₂ / TiO₂ Epitaxial Bilayer Films Grown on M-plane Sapphire Substrates", *Adv. Electron. Mater.* 2100687 (2021). (October 19, 2021) (DOI: [10.1002/aelm.202100687](https://doi.org/10.1002/aelm.202100687))
- [13] **Gwoon Kim***, Hai Jun Cho, and Hiromichi Ohta*, "Reversible Redox Control of Optoelectronic Properties of Hexagonal Tungsten Oxide Epitaxial Films Grown on YSZ Solid Electrolyte", *ACS Appl. Electron. Mater.* 3, 3619-3624 (2021). (August 6, 2021) (DOI: [10.1021/acsaelm.1c00522](https://doi.org/10.1021/acsaelm.1c00522))
- [12] Hyeonjun Kong, **Gwoon Kim**, Joonhyuk Lee, Jinhyung Cho, and Hyoungjeen Jeen, "Effect of thermal annealing on nitrogen implanted epitaxial Fe films", *Curr. Appl. Phys.* 24, 7-11 (2021). (January 26, 2021) (DOI: [10.1016/j.cap.2021.01.008](https://doi.org/10.1016/j.cap.2021.01.008))
- [11] **Gwoon Kim***, Bin Feng, Sangkyun Ryu, Hai Jun Cho, Hyoungjeen Jeen, Yuichi Ikuhara, and Hiromichi Ohta*, "Anisotropic Electrical Conductivity of Oxygen-Deficient Tungsten Oxide Films with Epitaxially Stabilized 1D Atomic Defect Tunnels", *ACS Appl. Mater. Interfaces* 13, 6864-6869 (2021). (January 28, 2021) (DOI: [10.1021/acсами.0c21240](https://doi.org/10.1021/acсами.0c21240))
- [10] **Gwoon Kim***, Bin Feng, Yu-Miin Sheu, Hai Jun Cho, Yuichi Ikuhara, Hiromichi Ohta*, "Coexistence of high electron conduction and low heat conduction in tungsten oxide epitaxial films with 1D atomic defect tunnels", *ACS Appl. Electron. Mater.* 2, 2507-2513 (2020). (July 28, 2020) (DOI: [10.1021/acsaelm.0c00428](https://doi.org/10.1021/acsaelm.0c00428))
- [9] Qian Yang, Joonhyuk Lee, Bin Feng, Yuichi Ikuhara, **Gwoon Kim**, Hai Jun Cho, Hyoungjeen Jeen*, and Hiromichi Ohta*, "Unusually large thermopower change from +330 $\mu\text{V K}^{-1}$ to -185 $\mu\text{V K}^{-1}$ of brownmillerite SrCoO_{2.5}", *ACS Appl. Electron. Matter.* 2, 2250-2256 (2020). (July 6, 2020) (DOI: [10.1021/acsaelm.0c00427](https://doi.org/10.1021/acsaelm.0c00427))

- [8] Hai Jun Cho,* Koichi Sato, Mian Wei, **Gwoon Kim**, and Hiromichi Ohta*, "Effect of lattice distortions on the electron and thermal transport properties of transparent oxide semiconductor $Ba_{1-x}Sr_xSnO_3$ solid solution films", *J. Appl. Phys.* **127**, 115701 (2020). (March 17, 2020) (DOI: [10.1063/5.0002172](https://doi.org/10.1063/5.0002172)) **Editors' pick**
- [7] **Gwoon Kim**, Hai Jun Cho*, Yu-Miin Sheu, and Hiromichi Ohta*, "Electrical, optical and thermal transport properties of oxygen deficient amorphous WO_x ($2.5 < x < 3$) films", *The Journal of Physical Chemistry C* (2019). (DOI: [10.1021/acs.jpcc.9b02448](https://doi.org/10.1021/acs.jpcc.9b02448)) **Cover image**
- [6] Anup Sanchela*, Mian Wei, Joonhyuk Lee, **Gwoon Kim**, Hyoungjeen Jeen, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, Hiromichi Ohta*, "Buffer layer-less fabrication of high-mobility transparent oxide semiconductor, La-doped $BaSnO_3$ ", *Journal of Materials Chemistry C* **7**, 5797-5802 (2019). (DOI: [10.1039/C8TC06177G](https://doi.org/10.1039/C8TC06177G)) (April 8, 2019)
- [5] Hai Jun Cho* **Gwoon Kim** , Takaki Onozato, Hyoungjeen Jeen, Hiromichi Ohta "Thermal conductivity tensor of NbO_2 ", *International Journal of Heat and Mass Transfer*, **137**, 263 (2019) (DOI : [10.1016/j.ijheatmasstransfer.2019.03.135](https://doi.org/10.1016/j.ijheatmasstransfer.2019.03.135))
- [4] **Gwoon Kim** , Yu-Qiao Zhang, Taewon Min, Hoyoung Suh, Jae Hyuck Jang, Hyeonjun Kong, Joonhyuk Lee, Jaekwang Lee, Tae-Yeol Jeon, Inwon Lee, Jinhung Cho, Hiromichi Ohta * and Hyoungjeen Jeen* "Extremely light carrier effective mass in a distorted simple metal oxide " *Adv. Electron. Mater.* **5** , 1800504 (2019) (December 7, 2018) (DOI : [10.1002/aelm.201800504](https://doi.org/10.1002/aelm.201800504))
- [3] Anup V. Sanchela*, Mian Wei, Haruki Zensyo, Bin Feng, Joonhyuk Lee, **Gwoon Kim**, Hyoungjeen Jeen, Yuichi Ikuhara, and Hiromichi Ohta* "Large thickness dependence of the carrier mobility in a transparent oxide semiconductor, La-doped $BaSnO_3$ ", *Appl. Phys. Lett.* **112** , 232102 (2018) . ([arXiv : 1804.05344](https://arxiv.org/abs/1804.05344))
- [2] Hyeonjun Kong, Eunyong Ahn, **Gwoon Kim**, Sangkyun Ryu, Sungkyun Park, and Hyoungjeen Jeen* "Thickness dependence on magnetism in Mo capped epitaxial Fe Films ", *J. Kor. Phys. Soc.* **73** , 622 (2018) .
- [1] **Gwoon Kim**, Hyeonjun Kong, Dongjin Kim, Hosu Lee, Hosun Lee, Mijung Jeen, Sungwook. Mhin, and Hyoungjeen Jeen* "Thermally-driven unequal cation vacancy formation and its effect on dielectric properties in $K_{0.5}Na_{0.5}NbO_3$ ceramics", *J. Kor. Phys. Soc.* **71** , 12 (2017) .

招待講演 (1)

[1] **Gwoon Kim**, Bin Feng, Yu-Miin Sheu, Sangkyun Ryu, Hyoungjeen Jeen, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "Thermoelectric Properties of Tungsten Oxide Epitaxial Films", 2021 KPS Fall Meeting, Virtual, October 20-22. (Invited)

学会発表 (30)

[30] **G. Kim**, H.J. Cho, H Ohta, "Reversible Redox Control of Optoelectronic Properties of Hexagonal Tungsten Oxide Epitaxial Films Grown on YSZ Solid Electrolyte", 第 82 回 応用物理学会秋季学術講演会, online, 2021.9.10-13.

[29] **Gwoon Kim**, Bin Feng, Yu-Miin Sheu, Sangkyun Ryu, Hyoungjeen Jeen, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "Thermoelectric properties of 1D atomic defect tunnels stabilized tungsten oxide epitaxial film (25-3516)", The 8th International Congress on Ceramics (ICC8), Virtual, April 25-30, 2021. (**Highlighted in the conference website "Closing remarks"**)

[28] **Gwoon Kim**, Bin Feng, Yu-Miin Sheu, Sangkyun Ryu, Hyoungjeen Jeen, Hai Jun Cho, and Hiromichi Ohta, "Thermoelectric Properties of Tungsten Oxide Films with 1D Atomic Defect Tunnels", 2021 年 第 68 回 応用物理学会春季学術講演会, online, 2021.3.16-19.

[27] **Gwoon Kim**, Bin Feng, Yuichi Ikuhara, Yu-Miin Sheu, Hai Jun Cho, and Hiromichi Ohta, "Phonon-Glass and Electron-Crystal Behavior of WO_x Films containing 1D Atomic Defect Tunnels", Electronic Materials and Applications 2021 (EMA2021), virtual, Jan. 19-22, 2021.

[26] **G. Kim**, B. Feng, S. Ryu, H. Jeen, H.J. Cho, Y. Ikuhara, and H. Ohta, "Anisotropy in the electrical conductivity of oxygen deficient WO_x with 1D atomic defect tunnels", 第 56 回 応用物理学会北海道支部/第 17 回日本光学会北海道支部合同学術講演会, online, 2021.1.9-10.

[25] **Gwoon Kim**, Bin Feng, Sangkyun Ryu, Hai Jun Cho, Hyoungjeen Jeon, Yuichi Ikuhara, and Hiromichi Ohta, "Large Anisotropy of Electron Transport in Oxygen Deficient Tungsten Oxide Epitaxial Films with 1D Atomic Defect Tunnels (P59)", The 21st RIES-Hokudai International Symposium 間 [ma], online, December 10-11, 2020 (poster). **Poster Award**

[24] **キムゴウン**, フウビン, リュサンギユン, ジンヒョンジン, ジョヘジュン, 幾原雄一, 太田裕道, "酸化タングステンエピタキシャル薄膜中で安定化された1次元原子欠陥トンネルの異方性電子輸送", 第14回物性科学領域横断研究会, オンライン, 2020年12月4日-5日 (口頭)

[23] **Gwoon Kim**, Bin Feng, Yuichi Ikuhara, Yu-Miin Sheu, Hai Jun Cho, and Hiromichi Ohta, "Heat and electron transports of 1D atomic defect tunnels stabilized in tungsten oxide epitaxial films", 令和2年度 日本セラミックス協会 東北北海道支部 研究発表会, online, November 13-14, 2020. (口頭) **優秀発表賞**

[22] **Gwoon Kim**, Bin Feng, Yuichi Ikuhara, Yu-Miin Sheu, Hai Jun Cho, and Hiromichi Ohta, "Heat and Electron Transports of 1D Atomic Defect Tunnels Stabilized in WO_x Films", 薄膜材料デバイス研究会 第17回研究会「薄膜デバイスの原点」, November 5-6, 2020. (ポスター)

[21] **Gwoon Kim**, Bin Feng, Yu-Miin Sheu, Hai Jun Cho, Yuichi Ikuhara, and Hiromichi Ohta, "High Electron and Low Heat Transports of 1D Atomic Defect Tunnels Stabilized in Tungsten Oxide Epitaxial Films", Pacific Rim Meeting on Electrochemical and Solid State Science (PRiME 2020), online, October 4-9, 2020.

[20] **Gwoon Kim**, Hai Jun Cho, Bin Feng, Yuichi Ikuhara, and Hiromichi Ohta, "Phonon-Glass Electron-Crystal behavior in Magneli tungsten oxide", The 67th JSAP Spring Meeting 2020 (canceled, the presentation has been established), Sophia University, Tokyo, March 12-15, 2020

[19] **Gwoon Kim**, Bin Feng, Hai Jun Cho, Yuichi Ikuhara, and Hiromichi Ohta, "高電気伝導率を示す Magneli WO_x 薄膜の異常低熱伝導率", The 55th Japan Society of Applied Physics Hokkaido Branch Meeting, Hokkaido University, January 11-12, 2020.

[18] **G. Kim**, H. J. Cho, B. Feng, Y. Ikuhara, and H. Ohta, "Systematic Clarification of Electron and Heat Transports in Oxygen Deficient WO_x ", The 3rd Workshop on Functional Materials Science, Sapporo, Japan, December 18th-20th, 2019. (Poster)

[17] **Gwoon Kim**, Hai Jun Cho, Yu-Miin Sheu, Hiromichi Ohta, "Electrical, optical and thermal transport properties of oxygen deficient amorphous WO_x ($2.5 < x < 3$)

films", 2019 MRS Fall Meeting & Exhibit, Boston, MA, December 1-6, 2019. **Best Poster Award Nomination**

[16] **Gwoon Kim**, Hai Jun Cho, Bin Feng, Yuichi Ikuhara, Hiromichi Ohta, "Systematic Clarification of Electron and Heat Transports in Oxygen Deficient WO_x – Comparison between Amorphous Films and Epitaxial Films –", TOEO-11, Nara, Japan, October 7-9, 2019

[15] **キム ゴウン**, ジョ ヘジュン, 馮斌, 幾原雄一, 太田裕道, "酸素欠損 WO_x ($2.83 < x < 3$) エピタキシャル薄膜の電子・熱輸送特性", 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.

[14] **キム ゴウン**, ジョ ヘジュン, Yu-Miin Sheu, 太田裕道, "アモルファス WO_x ($2.5 < x < 3$) 薄膜の光・電子・熱輸送", 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.

[13] **Gwoon Kim**, Yu-Qiao Zhang, Taewon Min, Hoyoung Suh, Jae Hyuck Jang, Hyeonjun Kong, Joonhuyk Lee, Jaekwang Lee, Tae-Yeol Jeon, Inwon Lee, Jinhyung Cho, Hiromichi Ohta, Hyoungjeen Jeon "Extremely light carrier effective mass in a distorted simple metal oxide, NbO_2 " The 19th RIES-HOKUDAI International Symposium 組[So], Jozankei View Hotel, Sapporo, December 11th-12th, 2018 (Poster)

[12] **Gwoon Kim**, Yu-Qiao Zang, Taewon Min, Hoyoung Seo, Jaehyuck Jang, Hyeonjun Kong, Joonhyuk Lee, Jaekwang Lee, Tae-Yeol Jeon, Inwon Lee, JinHyung Cho, Hiromichi Ohta, and Hyoungjeen Jeon, "Facile path for electron hopping in epitaxial NbO_2 thin films", the International Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE 2018), Jeju, South Korea, 11th-14th November, 2018 (Oral)

[11] **G. Kim**, Y. Zhang, T. Min, H. Seo, J. Jang, H. Kong, J-H. Lee, J-K. Lee, T.Y. Jeon, I. Lee, J.H. Cho, H. Ohta, and H. Jeon, "A facile path for electron hopping in NbO_2 ", The 2nd Workshop on Functional Materials Science, Busan, South Korea, October 22-23, 2018

[10] **G. Kim**, "Orientation dependent physical properties of epitaxial NbO_2 thin films on Al_2O_3 substrates", 2018 Korean Physical Society Busan- Ulsan-Gyeongnam Branch 69th Annual Meeting, Jun. 22, 2018 (Poster).

- [9] **G. Kim**, E. Ahn, H. Kong, J. Lee, Y. Baek, and H. Jeon, "Effect of nitrogen partial pressure on magnetism in annealed (110) Fe films", 2018 International Conference for Asian Union of Magnetic Societies, Jeju, Korea, Jun. 3-7, 2018 (Poster).
- [8] H. Jeon, **G. Kim**, Y. Zhang, T. Min, H. Suh, J. Jang, H. Kong, J. Lee, T. Jeon, I. Lee, J. Cho, and H. Ohta, "Orientation dependent physical properties of epitaxial NbO₂ thin films", 2018 Spring Korean Physical Society Meeting, Daejeon Convention Center, Korea, Apr. 25-27, 2018 (Oral).
- [7] **G. Kim**, "Orientation dependent physical properties of epitaxial NbO₂ thin films on Al₂O₃ substrates", 2016 Muju ferro-electric symposium Feb. 4-6, 2018 (Poster).
- [6] **G. Kim**, E. Ahn, Y. Seo, J. Cho, and H. Jeon, "Effect of thermal treatment on N+ ions implanted NbO₂ thin films", Emallia Conference, Busan, Korea, Sep. 7-8, 2017 (Oral).
- [5] **G. Kim**, "Orientation dependent optical conductivity of epitaxial NbO₂ thin films", 2017 Korean Physical Society Busan- Ulsan-Gyeongnam Branch 68th Annual Meeting, Jun. 23, 2017 (Poster).
- [4] **G. Kim**, J. Cho, and H. Jeon, "Epitaxial growth of NbO₂ thin films on Al₂O₃ substrates", 2017 Spring Korean Physical Society Meeting, Daejeon Convention Center, Korea, Apr. 19-21, 2017 (Poster).
- [3] **G. Kim**, "Thermal annealing effect on physical properties of K_{0.5}Na_{0.5}NbO₃ polycrystals", 2016 Muju ferro-electric symposium, Jan. 31-Feb. 2, 2016 (Poster).
- [2] **G. Kim**, "Thermal annealing effect on physical properties of K_{0.5}Na_{0.5}NbO₃ polycrystals", 2016 Spring Korean Physical Society Meeting, Apr. 20-22, 2016 (Poster).
- [1] **G. Kim** "Thermal annealing effect on physical properties of K_{0.5}Na_{0.5}NbO₃ polycrystals" 2015 Fall Busan-Ulsan-Gyeongnam Chapter Meeting of Korean Physical Society, Dec. 22, 2015 (Poster).

受賞 (6)



[6] 北海道大学大学院 情報科学研究科, **研究科長賞** (2021.9.24)

[5] **Poster Award**, (2020.12.11), **Gwoon Kim**, Bin Feng, Sangkyun Ryu, Hai Jun Cho, Hyoungjeen Jeon, Yuichi Ikuhara, and Hiromichi Ohta, "Large Anisotropy of Electron Transport in Oxygen Deficient Tungsten Oxide Epitaxial Films with 1D Atomic Defect Tunnels (P59)", The 21st RIES-Hokudai International Symposium 間 [ma], online, December 10-11, 2020 (poster). **写真 1 写真 2**

[4] **優秀発表賞**, 2020 年度 日本セラミックス協会東北北海道支部 研究発表会, "Heat and electron transports of 1D atomic defect tunnels stabilized in tungsten oxide epitaxial films (1A03)", **キムゴウン**, フウビン, 幾原雄一, ユーミンシユー, ジョヘジユン, 太田裕道, オンライン, 2020 年 11 月 13 日-14 日 **写真 1 写真 2**

[3] **Best Poster Award Nominee**, **Gwoon Kim**, Hai Jun Cho, Yu-Miin Sheu, Hiromichi Ohta, "Electrical, optical and thermal transport properties of oxygen deficient amorphous WO_x ($2.5 < x < 3$) films", 2019 MRS Fall Meeting & Exhibit, Boston, MA, December 1-6, 2019. **Photo**

[2] BK21 plus scholarship from the Ministry of Education, S. Korea, Sep. 2016-Aug. 2018

[1] Best poster award 2015 Fall Busan-Ulsan-Kyeongnam Chapter Meeting of Korean Physical Society, Dec. 2015