WEI, Mian (魏 冕)

Room: Research Institute for Electronic Science 3F 03-106
TEL: +81-11-706-9433 / FAX: +81-11-706-9432
keywords: Transparent oxide semiconductors

0000-0001-9793-4325

Biography

Ph. D candidate, Graduate School of Information Science and Technology, Hokkaido University, Japan, Oct. 2018-Sptember 2021. Dr. Eng.

M.InfoSci, Graduate School of Information Science and Technology, Hokkaido University, Japan, Oct. 2016-September 2018.

B.E. Electronic Science and Technology at UESTC (University of Electronic Science and Technology of China)

Original Paper (9)

[9] **Mian Wei***, Hai Jun Cho, and Hiromichi Ohta*, "Tuning of the optoelectronic properties for transparent oxide semiconductor $ASnO_3$ by modulating the size of *A*-ions", *ACS Appl. Electron. Mater.* 2, 3971-3976 (2020). (December 8, 2020) (DOI: 10.1021/acsaelm.0c00806)

[8] **Mian Wei**[#], Lizhikun Gong[#], Dou-dou Liang[#], Hai Jun Cho, and Hiromichi Ohta*, "Fabrication and Operating Mechanism of Deep-UV Transparent Semiconducting $SrSnO_3$-based Thin Film Transistor", *Adv. Electron. Mater.* **6**, 2000100 (2020). (June 15, 2020) (DOI: 10.1002/aelm.202000100) (# Equally contributed to this work) **Press release**

[7] Hai Jun Cho,* Koichi Sato, **Mian Wei**, Gowoon 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) **Editors' pick**

[6] **Mian Wei**, Anup Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho*, and Hiromichi Ohta*, "High electrical conducting deep-ultraviolet-transparent oxide semiconductor La-doped $SrSnO_3$ exceeding ~3000 S cm^{-1}", *Appl. Phys. Lett.* **116**, 022103 (2020). (January 13th, 2020) (DOI: 10.1063/1.5128410)

[5] Hai Jun Cho*, Bin Feng, Takaki Onozato, **Mian Wei**, Anup Sanchela, Yuichi Ikuhara, and Hiromichi Ohta*, "Investigation of electrical and thermal transport property reductions in La-doped $BaSnO_3$ films", *Phys. Rev. Materials* **3**, 094601 (2019). (September 3rd, 2019) (DOI: 10.1103/PhysRevMaterials.3.094601) **Editors' Suggestion**

[4] Anup Sanchela*, **Mian Wei**, Joonhyuk Lee, Gowoon 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)

[3] Anup V. Sanchela*, **Mian Wei**, Hai Jun Cho, and Hiromichi Ohta*, "Thermopower modulation clarification of the operating mechanism in wide bandgap $BaSnO_3$–$SrSnO_3$ solid-solution based thin film transistors", *Small* **15**, 1805394 (2019).(DOI: 10.1002/smll.201805394)

[2] Hai Jun Cho*, Takaki Onozato, **Mian Wei**, Anup Sanchela, and Hiromichi Ohta*, "Effects of vacuum annealing on the electron mobility of epitaxial La-doped $BaSnO_3$ films", *APL Mater.* **7**, 022507 (2019). (DOI: 10.1063/1.5054154)

[1] Anup V. Sanchela*, **Mian Wei**, Haruki Zensyo, Bin Feng, Joonhyuk Lee, Gowoon 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).

Presentation (16)

[16] **M. Wei**, L. Gong, R. Yu, H.J. Cho, H. Ohta, T. Katayama, "Single-Crystalline La:$SrSnO_3$ Conductive Sheet with Wide Bandgap of 4.2 eV", 第 82 回 応用物理学会秋季学術講演会, online, 2021.9.10-13.

[15] **Mian Wei**, Hai Jun Cho, and Hiromichi Ohta, "Modulation of Optical and Electronical Properties for Transparent Oxide Semiconductor $ASnO_3$ by the A-site ion substitution (GG02)", 63rd Electronic Materials Conference (EMC 2021), Virtual, June 23-25, 2021

[14] **Mian Wei**, Hai Jun Cho, and Hiromichi Ohta, "Tuning of the Optoelectronic Properties for Transparent Oxide Semiconductor $ASnO_3$ by Modulating the Size of *A*-ions (21-3507)", The 8th International Congress on Ceramics (ICC8), Virtual, April 25-30, 2021.

[13] **Mian Wei**, Hai Jun Cho, and Hiromichi Ohta, "Band Engineering of Transparent Oxide Semiconductor $ASnO_3$ (A = Ba, Ca, and Sr)", 2021 年 第 68 回 応用物理学会春季学術講演会, online, 2021.3.16-19.

[12] **M. Wei**, H.J. Cho, and H. Ohta, "Optoelectronic properties of La-doped $CaSnO_3$-$SrSnO_3$-$BaSnO_3$", 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.

[11] **Mian Wei**, Anup V. Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "New Deep-Ultraviolet Transparent Oxide Semiconductor, La-doped $SrSnO_3$", The 3rd Workshop on Functional Materials Science, Sapporo, Japan, December 18th-20th, 2019. (Poster)

[10] **Mian Wei**, Anup V. Sanchela, Hai Jun Cho, and Hiromichi Ohta, "High electrical conductivity exceeding ~3000 S cm^{-1} of a transparent oxide semiconductor, La-doped $SrSnO_3$", Materials Research Meeting 2019, Yokohama, Japan, December 10-14, 2019 (Oral).

[9] **Mian Wei**, Anup V. Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "Epitaxial film growth of a deep-ultraviolet transparent oxide semiconductor, La-doped $SrSnO_3$", RIES-NCTU Workshop, Hokkaido University, Sapporo, Japan, December 3-4, 2019. (Poster)

[8] **Mian Wei**, Anup V. Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "Epitaxial film growth of a deep-ultraviolet transparent oxide semiconductor, La-doped $SrSnO_3$", The 20th RIES-HOKUDAI International Symposium, Hokkaido University, Sapporo, Japan, December 2-3, 2019. (Poster)

[7] **Mian Wei**, Anup V. Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta, "New Deep-Ultraviolet Transparent Oxide Semiconductor, La-doped $SrSnO_3$", TOEO-11, Nara, Japan, October 7-9, 2019 (Poster). **Best Poster Award (Gold)**

[6] **魏 冕**, Anup Sanchela, 馮 斌, 幾原雄一, Hai Jun Cho, 太田裕道, "3000 S cm^{-1}を超える高導電性深紫外透明酸化物半導体 La ドープ $SrSnO_3$", 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.

[5] **Mian Wei**, Anup V. Sanchela, Hai Jun Cho, Hiromichi Ohta, "Thermopower analysis of effective mass in a transparent oxide semiconductor, La-doped $SrSnO_3$", The 19th RIES-HOKUDAI International Symposium 組[So], Jozankei View Hotel, Sapporo, December 11th-12th, 2018 (Poster) **Poster Award**

[4] **M. Wei**, A. Sanchela, J. Lee, G. Kim, H. Jeen, B. Feng, Y. Ikuhara, H. Cho, and H. Ohta, "Electron mobility improvement of La-doped $BaSnO_3$ films grown under the ozone atmosphere", The 2nd Workshop on Functional Materials Science, Busan, South Korea, October 22-23, 2018 (Poster).

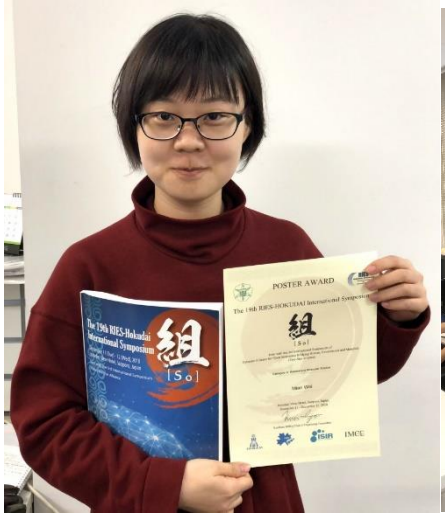
[3] **M. Wei**, A. Sanchela, J. Lee, G. Kim, H. Jeen, B. Feng, Y. Ikuhara, H. Cho and H. Ohta, "A perverse transparent oxide semiconductor, La:$BaSnO_3$", 2018 年 第 79 回 応用物理学会秋季学術講演会, 名古屋国際会議場（名古屋・愛知）, 2018 年 9 月 18 日-21 日

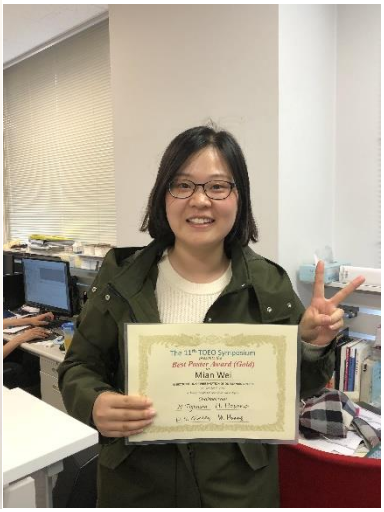
[2] **Mian Wei**, Anup V. Sanchela, Bin Feng, Joonhyuk Lee, Gowoon Kim, Hyoungjeen Jeen, Yuichi Ikuhara, and Hiromichi Ohta, "Origin of Mobility Suppression in La-doped

$BaSnO_3$ Films (II)", 2018 年 第 65 回応用物理学会春季学術講演会, Waseda University (Tokyo), 17-20 March, 2018 (Domestic)

[1] **M. Wei**, A. V. Sanchela, B.Feng, J. Lee, G. Kim, H. Jeen, Y. Ikuhara and H. Ohta, "Origin of mobility suppression in La-doped $BaSnO_3$ films", 第 53 回応用物理学会北海道支部/第 14 回日本光学会北海道支部合同学術講演会, Hokkaido University, 6-7 Jan. 2018 (Domestic) **Encouragement Award**

Award (3)





[3] Best Poster Award (Gold) at 11th International Symposium on Transparent Oxide and Related Materials for Electronics and Optics (TOEO-11) (October 9th, 2019). "New Deep-Ultraviolet Transparent Oxide Semiconductor, La-doped $SrSnO_3$", **Mian Wei***, Anup Sanchela, Bin Feng, Yuichi Ikuhara, Hai Jun Cho, and Hiromichi Ohta **Certificate** **Photo**

[2] Poster Award for the Presentation in The 19th RIES-Hokudai International Symposium. (December 12th, 2018) **Mian Wei**, Anup V. Sanchela, Hai Jun Cho, Hiromichi Ohta, "Thermopower analysis of effective mass in a transparent oxide semiconductor, La-doped $SrSnO_3$", The 19th RIES-HOKUDAI International Symposium 組[So], Jozankei View Hotel, Sapporo, December 11th-12th, 2018 (Poster) **Certificate**

[1] Encouragement Award for Presentation in Hokkaido Branch of the Japan Society of Applied Physics, **Mian Wei**, Anup V. Sanchela, Bin Feng, Joonhyuk Lee, Gowoon Kim,

Hyoungjeen Jeen, Yuichi Ikuhara, Hiromichi Ohta, “Origin of mobility suppression in La-doped $BaSnO_3$ films”, The 53rd JSAP Hokkaido Branch Meeting, Hokkaido University, Sapporo, Japan, 6-7 January, 2018 **Certificate**

Press report (3)

[1] OPTRONICS ONLINE, “北大，DUV を透過する透明トランジスタを実現” (2020.6.16)

[2] fabcross for エンジニア, “深紫外線を透過する透明な薄膜トランジスタを作製――殺菌灯照射下でも動作可能な新バイオセンサーへの応用に期待　北海道大学” (2020.6.17)

[3] e.x.press, “深紫外線線を透過する透明なトランジスタを実現” (2020.6.24)