**Personal Information**

Name: **Woo Seok Choi**

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**Research Interests**

Discovering and understanding novel physical phenomena by fabricating and characterizing complex transition metal oxide heterostructures for opto-electronic, energy, and environmental applications.

**Education**

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| Feb. 2010 | **Ph. D.**, Department of Physics and Astronomy, Seoul National University  Thesis: “*Optical Spectroscopic Investigations on Charge/Spin/Lattice Couplings in Oxide Thin Films and Superlattices*”  Supervised by Prof. Tae Won Noh |
| Feb. 2004 | **B. S.**, Department of Physics and Astronomy, Seoul National University |

**Professional Experience**

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| Mar. 2017~ Feb. 2023  Jan. 2019~ Feb. 2020  Mar. 2013~ Feb. 2017  Mar. 2013 ~ Aug. 2013  Oct. 2010 ~ Feb. 2013  Mar. 2010~ Sep. 2010 | Associate Professor, Department of Physics, Sungkyunkwan University  Visiting Professor, Department of Materials Science and Engineering, University of Tennessee, Knoxville, hosted by Prof. Takeshi Egami  Assistant Professor, Department of Physics, Sungkyunkwan University  Visiting Scholar, Material Science & Technology Division, Oak Ridge National Laboratory  Postdoctoral Research Associate, Material Science & Technology Division, Oak Ridge National Laboratory, advised by Dr. Ho Nyung Lee  Postdoctoral Researcher, Frontier Physics Research Division, Department of Physics and Astronomy, Seoul National University, advised by Prof. Tae Won Noh |

**Awards and Honors**

* Yonam International Joint Research Professor by LG Yonam Foundation (November 21, 2018)
* TJ Park Science Fellowship by POSCO TJ Park Foundation (September 18, 2015)
* Bombi Award by The Korean Physical Society (April 24, 2014)
* 2012 ORNL Award for Outstanding Accomplishment in Scientific Research by UT-Battelle at 2012 Awards Night Achievement (November 16, 2012)
* Prize for outstanding papers for graduate students, Korean Synchrotron Radiation User’s Association (KOSUA) (November 22, 2009)
* Springer Prize for the Best Presentation, The 10th Asia Pacific Physics Conference (August 21-24, 2007, Pohang, Korea)
* Three Best Poster Awards, Korean Physical Society Annual Meetings (Spring 2005, Fall 2006, and Spring 2009)
* Two Best Poster Awards, The 2nd and 5th Joint Symposium on Ferroelectricity (February 2006 and February 2009, Muju, Korea)
* Best Poster Award, The 10th. Anniversary Workshop of APCTP "Strongly Correlated Electron Systems". (November 2-7, 2006, Pohang, Korea)
* Seoul Science Fellowship, 2005-2006 (Seoul Metropolitan Government)
* Brain Korea 21 Scholarship for Graduate Students, 2004-2009
* Scholarship for excellent record for graduate students, 2004

**Publications**

Published >100 peer-reviewed journal articles.

Total # of citation: > 3,400 & *h*-index: 33 (Web of Science).

Total # of citation: > 4,200 & *h*-index: 37 (Google).

**Representative Recent Publications**

“Phase Instability amid Dimensional Crossover in Artificial Oxide Crystal” 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**, *Phys. Rev. Lett.* **124**, 026401 (2020).

“A Room-Temperature Ferroelectric Ferromagnet in a 1D Tetrahedral Chain Network” Kyeong Tae Kang, Chang Jae Roh, Jinyoung Lim, Taewon Min, Jun Han Lee, Kyoungjun Lee, Tae Yoon Lee, Seunghun Kang, Daehee Seol, Jiwoong Kim, Hiromichi Ohta, Amit Khare, Sungkyun Park, Yunseok Kim, Seung Chul Chae, Yoon Seok Oh, Jaekwang Lee, Jaejun Yu, Jong Seok Lee, and **Woo Seok Choi**, *Adv. Mater.* **31**, 1808104 (2019).

“Topotactic Metal-Insulator Transition in Epitaxial SrFeO*x* Thin Films” Amit Khare, Dongwon Shin, Tae Sup Yoo, Minu Kim, Tae Dong Kang, Jaekwang Lee, Seulki Roh, Jungseek Hwang, Sung Wng Kim, Tae Won Noh, Hiromichi Ohta, and **Woo Seok Choi**, *Adv. Mater.* **29**, 1606566 (2017).

“Enhanced electrocatalytic activity via phase transitions in strongly correlated SrRuO3 thin films” Sang A Lee, Seokjae Oh, Jae-Yeol Hwang, Minseok Choi, Chulmin Youn, Ji Woong Kim, Seo Hyoung Chang, Sungmin Woo, Jong-Seong Bae, Sungkyun Park, Young-Min Kim, Suyoun Lee, Taekjib Choi, Sung Wng Kim, and **Woo Seok Choi**, *Energy Environ. Sci.* **10**, 924 (2017).

“Quantum conductance probing of oxygen vacancies in SrTiO3 epitaxial thin film using graphene” Kyeong Tae Kang, Haeyong Kang, Jeongmin Park, Dongseok Suh, and **Woo Seok Choi**, *Adv. Mater.* **29**, 1700071 (2017).

**Recent Conferences and Seminars** (selected)

* “Combined Polar Distortion Leading to Ferroelectric Ferromagnet in 1D Tetrahedral Chain Network” Electronic Materials and Applications (EMA 2020) (January 22-24, 2020, Orlando, USA), *Invited talk*
* “Magnetically Coupled Metal-Insulator Transition in Low Dimensional Oxide Crystal” 7th International Symposium on Integrated Functionalities (ISIF2019) (August 11-14, 2019, Dublin, Ireland), *Invited talk*
* “Realization of Horizontal and Vertical Interfaces in Ruthenate Epitaxial Thin Films” 19th International Conference on Crystal Growth and Epitaxy (ICCGE-19) (July 28-August 2, 2019, Keystone, USA), *Invited talk*
* “Dimensional Crossover of Spin Ordering in Artificial Oxide Superlattices” 5th International Conference on Advances in Functional Materials (July 22-24, 2019, Washington DC, USA), *Plenary talk*
* “Ferroelectricity in 1D Tetrahedral Chain Network via Combined Polar Distortion” 25th International Workshop on Oxide Electronics (iWOE25) (October 1-3, 2018, Les Diablerets, Switzerland), *Invited talk*

**Book Chapters, Reviews, Editings** (selected)

* “Oxide Heterostructure Research in Korea”, edited by **Woo Seok Choi**, Sungkyun Park, Hiroki Taniguchi, and Tae Won Noh, *Curr. Appl. Phys.* **17**, 593 (2017).
* “Optoelectronics: optical properties and electronic structures of complex metal oxides”, **W.S. Choi**, S.S.A. Seo, H.N. Lee. Published in “*Epitaxial Growth of Complex Metal Oxides*”, Woodhead Publishing (May 14, 2015).

**Academic Activities** (selected)

* Vice Executive Editor for *Current Applied Physics* (2015-2018)
* Referee for APS journals (*Physical Review Letters*, *Physical Review B*, *Physical Review Applied*, & *Physical Review Materials*): Total > 70 communications provided.
* Referee for *Advanced Materials*, *Nature Communications*, *Science Advances*, *Advanced Energy/Functional/Electronic Materials*, *Nano Letters*, *Angewandte Chemie*, *npg Asia Materials*, *Advanced Science*, *Chemistry of Materials*, *The Journal of Physical Chemistry*, and many other Journals.

**Recent Organizations of Academic Conferences** (selected)

* “13th Korea-Japan Conference on Ferroelectrics” (Sep. 20-23, 2020, Seoul, Korea), Program Committee Chair
* “2019 MRS Spring Meeting & Exhibit, Symposium QN07, Emergent Phenomena in Oxide Quantum Materials” (Apr. 22-26, 2019, Phoenix, USA), Symposium Organizer
* “The 9th, 10th, & 11th International Conference on Advanced Materials and Devices” (Dec. 7–9, 2015, Dec. 5–8, 2017, Dec. 10–13, 2019, Jeju, Korea), Program Committee

**Community Outreach** (selected)

* “2019 MRS Spring Meeting & Exhibit 참가기” 최우석, 학회참가기, 물리학과 첨단기술, May 2019, page 44.
* Organizer of public lecture series, 2018 물리야 놀자 중·고생 과학상상터 (May-Jun, 2018, SKKU, Korea)
* “단결정 전이금속 산화물 박막을 이용한 전기화학촉매 현상 연구” 이상아, 이제곤, 최우석, 물리학과 첨단기술의 세계, 물리학과 첨단기술, May 2017, page 21. DOI: 10.3938.PhiT.26.021
* Public lecture “공중부양의 비밀” 2017 물리야 놀자 중·고생 과학상상터 (May 13, 2017, SKKU, Suwon, Korea)