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# Curriculum Vitae

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## Min-su Seo

### EDUCATION BACKGROUND:

2007.08.-2010.02. M.S. degree in Condensed Matter Physics  
Hanyang University.

DISSERTATION : Physical properties and CMOS-process fabrication of two-dimensional magnetic nano-array.

Advisor: Professor YoungPak Lee

2003.02.-2007.08. B.S. degree in Applied Physics  
Hanyang University.

### EXPERIMENTAL SKILL:

1. The fabrication of **ferromagnetic layered film** and theirs **litho-patterning**.
2. Operate liquid helium **re-liquefaction system** and **cryogenic systems**.
3. Electrical and magneto-electrical **transport measurement**.
4. Measuring **magnetic and thermal properties** from a low temperature (1.5 K) to high temperature (1000 K) for variety of materials
5. Hand-on experience in **vacuum utilities** (UHV sputter/e-beam system).
6. Technically proficient in **Labview**, **MS-Excel**, and **Origin**.

### WORK EXPERIENCE:

2017.09. – 2018.11.

#### Seongwoo Instrument

Manager / Technical Development Team

- Development and production of cryostat.
- Fabrication of superconducting magnet application system.
- Technical sales of cryocooler and He-liquefier.

2011.09. – 2016.02.

#### Korea Basic Science Institute

Researcher / Spin Engineering Physics Research

To establish a high-magnetic-field environment using an electromagnet and a superconducting magnet, to understand new physical phenomena of materials by measuring magnetic and thermal properties from a low temperature (1.5 K) to high temperature (1000 K).

- Operation and management of cryogenic high magnetic field equipment. (PPMS, MPMS by Quantum Design / Probe station by Lakeshore / et al.)
- Operate liquid helium re-liquefaction system.

2010.04. – 2011.07.

#### Quantum Photonic Science Research Center (SRC in Hanyang Univ.)

Associate Researcher/ Electron – photon research team

The optical study on the dynamics of biofunctionalized magnetic nanometer chain

- The fabrication of ferromagnetic film and their litho-patterning.
- Operation of surface analysis equipment. (AFM/MFM, MOKE, XRD)
- Operation and management of cryogenic high magnetic field equipment. (PPMS, MPMS by Quantum Design)

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I have been supporting job for basic science a long time. KBSI was an institution that supports basic science research. In addition, Seongwoo Instruments company was a place to support research by developing for user friendly research equipment. Through this, I have achieved a lot of joint research results. I would like to continue research supporting job. If you give me a chance to work in QNS, I will do my best. Thank you for your interest.

## AWARDS:

1. Outstanding Employee Award in Korea Basic Science Institute 2013
2. The Best Poster Presentation award in Korea Physical Society Meeting 2010
3. Honors Graduation Award (Cum Laude) in Hanyang University 2007

## PATENTS:

1. S. Y. Park, Y. S. Choi, **M. S. Seo**, M. S. Kim, "Adiabatic collector for recycling gas, liquefier for recycling gas, and recovery apparatus for recycling gas using same."  
Korean Patent. Pub. No : 10-1447525 (Sep. 29, 2014).  
United States Patent. Pub. No : US 2016/027830 A1 (Sep. 22, 2016).

## ARTICLES (2015~2018):

1. Y. J. Yoo, J. S. Hwang, Y. P. Lee, J. S. Park, J. Y. Rhee, J. -H. Kang, K. W. Lee, B. W. Lee, **M. S. Seo**, "Origin of enhanced multiferroic properties in Dy and Co co-doped BiFeO<sub>3</sub> ceramics,"  
Journal of Magnetism and Magnetic Materials 374, 669 (2015).
2. S.-I. Kim, D. J. Kim, **M. S. Seo**, B.-G. Park, and S.-Y. Park, "Stacking order dependence of inverse spin Hall effect and anomalous Hall effect in spin pumping experiments,"  
Journal of Applied Physics 117, 17D901-1 (2015).
3. S.-I. Kim, D. J. Kim, **M. S. Seo**, B.-G. Park, and S.-Y. Park, "Dependence of inverse-spin Hall effect and spin-rectified voltage on tantalum thickness in Ta/CoFeB bilayer structure,"  
Applied Physics Letters 106, 32409 (2015).
4. S.-I. Kim, **M. S. Seo**, Y. S. Choi, and S.-Y. Park, "Irreversible magnetic-field dependence of ferromagnetic resonance and inverse spin Hall effect voltage in CoFeB/Pt bilayer,"  
Journal of Magnetism and Magnetic Materials 421, 189 (2017).
5. M. Nauman, Y. Hong, T. Hussian, **M. S. Seo**, S. Y. Park, N. Lee, Y. J. Choi, W. Kang, and Y. Jo, "In-plane magnetic anisotropy in strontium iridate Sr<sub>2</sub>IrO<sub>4</sub>,"  
Physical Review B 96, 155102 (2017).
6. M. J. Oh, H. J. Lim, **M. S. Seo**, S. Y. Park, W. N. Kang, and Y. Jo, "Strong Flux Pinning Caused by Phase Distribution Characteristics in (Ba,K)Fe<sub>2</sub>As<sub>2</sub> Films,"  
IEEE Transactions on Applied Superconductivity 28, 7300405 (2018).
7. M. J. Oh, Jonmin Lee, Sehun Seo, Sejun Yoon, **M. S. Seo**, S. Y. Park, Ho-Sup Kim, Dong-Woo Ha, Sanghan Lee, and Youn Jung Jo, "Vortex pinning in artificially layered Ba(Fe,Co)<sub>2</sub>As<sub>2</sub> film,"  
Cryogenics 92, 1 (2018).