

## Curriculum Vitae

# Sangwon Yoon

Nov. 2017

### Professional Preparation

Feb. 2003. **M.S.**, the Catholic Univ. of Korea. Major: Department of Physics,  
Title of thesis: "Study of magnetization relaxation in single crystal of Mn12-acetate"

Feb. 2001. **B.S.**, the Catholic Univ. of Korea. Major: Department of Physics.

### Professional Experience

April. 2017 ~ **Present**      Researcher of Center for Quantum Nanoscience (QNS) of Institute  
of Basic Science (IBS)

July. 2008. ~ March. 2017.    Chief researcher, Magnet & Coil group, SuNAM Co., Ltd.

May. 2003 ~ June. 2008.      Senior researcher, Superconducting Magnet Div., DUKSUNG Co.,  
Ltd.

### Honors, Awards, and Prizes

Best Technical Award, the Korea Institute of Applied Superconductivity and Cryogenics (2016).

### Technical Experiences

Experience in developing superconducting magnets for use in cryogenic and high vacuum

environments.

- 26 Tesla / 25 mm(clear bore) All HTS high field magnet in LHe
- LTS Magnet for a single crystal silicon growth.
- Cryogen free superconducting magnet. (4 T/203 mm, 4 T/102 mm)
- Superconducting LSM (Linear Synchronous Motor)

Experience in developing cryogenic circulation equipment.

- Closed loop liquid nitrogen circulation system.

Experience in developing a superconducting tape electrical characteristics.

- Transport critical current measurement system for a HTS tape (> 1000 A)
- Insert cryostat for a HTS tape performance. ( $I_c$ -B-T-theta)
- Temperature-dependent resistance measuring device.
- Contactless critical current measurement device. (by hall sensor)

Used LabVIEW to control the instrument.

- R-T measurement program.
- V-I measurement program.
- Conduction cooled NMR magnet monitoring program.
- LSM monitoring program.
- 26 Tesla / 25 mm(Clear bore) All HTS high field magnet monitoring program.

## Publications

**Yoon, S.;** Kim, J.; Lee, H.; Hahn, S. and Moon, S. “26 T 35 mm “all-GdBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> multi-width no-insulation superconducting magnet”. *Superconductor Science and Technology*, 29, 04LT04 (2016).

Kim, K.L.; **Yoon, S.;** Cheon, K.; Kim, J.; Lee, H.; Lee, S.; Kim, D.L. and Hahn, “400-MHz/60-mm All-REBCO Nuclear Magnetic Resonance Magnet: Magnet Design”. *IEEE Trans. Appl. Supercond.*, 26, 4302604 (2016).

Kim, J.; **Yoon, S.;** Cheon, K.; Shin, K.H.; Hahn, S.; Kim, D.L.; Lee, S.G. and Moon, S.H. “Effect of Resistive Metal Cladding of HTS Tape on the Characteristic of No-Insulation Coil”. *IEEE Trans. Appl. Supercond.*, 26, 4601906 (2016).

A-Rong Kim; Zhong-Soo Lim; Taewon Kim; Kiwook Yun; **Sangwon Yoon;** Minwon Park; In-Keun Yu. “Development of Critical Current Measurement System of HTS Tape Using Pulsed Current.” *IEEE Trans. Appl. Supercond.*, 26.4 (2016): 1-4.

- C. B. Park; C. Y. Lee; **S. Yoon**; S. Kim, “Development of a Small-Scale Superconducting LSM using Gd-Ba-Cu-O High-Temperature Superconducting Wire”. *IEEE Transactions on Energy Conversion*, vol.PP, no.99 (2016), pp.1-1.
- Kim, A. R.; Kim, K. M.; Park, H.; Kim, G. H.; Park, T. J.; Park, M., Kim, S.; Lee, S.; Ha, H.; **Yoon, S.**; Lee, H. (2015). “Performance Analysis of a 10-kW Superconducting Synchronous Generator”. *IEEE Trans. Appl. Supercond.*, 25(3), 1-4.
- Z.Y.Li; Y.Wang; J.Xu; D.Xu; Z. Hong; Z.Jin; K.Ryu; **S. Yoon**; K.Cheon. “Design and Test Performance of 2G Pancake Coils for HTS DC Induction Heater Prototype” *IEEE Trans. Appl. Supercond.*, 25.3 (2015): 1-5.
- Sangwon Yoon**; Kyekun Cheon; Hunju Lee; Seung-Hyun Moon; Sun-Young Kim; Yungil Kim; Sang-Ho Park; Kyeongdal Choi; Gye-Won Hong. “Fabrication and characterization of 4-T/203-mm RT bore 2G HTS magnet with no-insulation method.” *IEEE Trans. Appl. Supercond.*, 24.3 (2014): 1-4.
- Sangwon Yoon**, Kyekun Cheon; Hunju Lee; Seung-Hyun Moon; Sun-Young Kim; Yungil Kim; Sang-Ho Park; Kyeongdal Choi; Gye-Won Hong. “The performance of the conduction cooled 2G HTS magnet wound without turn to turn insulation generating 4.1 T in 102 mm bore.” *Physica C: Superconductivity* 494 (2013): 242-245.
- Sangwon Yoon**; Kyekun Cheon; Hunju Lee; Seung-hyun Moon; Ilkyu Ham; Yungil Kim; Sang-ho Park; Hyeonggil Joo; Kyeongdal Choi; Gye-Won Hong. “Fabrication and characterization of 3-T/102-mm RT bore magnet using 2nd generation (2G) HTS wire with conducting cooling method.” *IEEE Trans. Appl. Supercond.*, 23.3 (2013): 4600604-4600604.
- Yoon, S. W.**; Yoon, S.; Suh, B. J.; Jeon, W. S.; Kim, Y. J.; Jung, D. Y. (2005). “Effects of a transverse magnetic field on spin tunneling in Mn<sub>12</sub> acetate: Evidence of internal transverse anisotropy”. *Journal of the Korean Physical Society*, 46(2), 498-502.
- Yoon, S.; **Yoon, S. W.**; Heu, M.; Cho, S. B.; Jeon, W. S.; Kim, Y. J.; ... & Suh, B. J. (2004). “Magnetization relaxation of Mn<sub>12</sub>-Ac in the presence of crystal imperfections”. *Journal of Magnetism and Magnetic Materials*, 272, E743-E744.
- Heu, M.; **Yoon, S. W.**; Jeon, W. S.; Jung, D. Y.; Suh, B. J.; & Yoon, S. (2004). “Transverse anisotropy of the single-molecule magnet Mn<sub>12</sub>-PrCl”. *Journal of Magnetism and Magnetic Materials*, 272, E745-E747.
- Yoon, S. W.**; Yoon, S.; Suh, B. J.; Shin, Y. J.; Jeon, W. S.; Kim, Y. J.; & Jung, D. Y. (2004). “Effects of crystal imperfections in Mn<sub>12</sub> acetate”. *Journal of the Korean Physical Society*, 44(2), 365-368.
- Yoon, S. W.**; Heu, M., Jeon; W. S., Jung; D. Y.; Suh, B. J.; & Yoon, S. (2003). “Quantum tunneling and magnetic relaxation in Mn-12 chloropropionate”. *Physical Review B*, 67(5), 052402.