

2023 Winter Conference of KSSC



**Oriental Hotel
Jeju-do, Korea
Feb 15 ~ Feb 17, 2023**

*Organized by
The Korean Society of Superconductivity and Cryogenics*

Legend

PL	Plenary Talk
IN	Invited Talk
O	Oral Talk
P	Poster
PR	PRISM
TP	Theory, Physical Properties
ED	Electronic & Devices Applications
MM	Materials
LA	Large Scale Applications
CR	Cryogenics
EC	Electronic & Devices Applications, Cryogenics
ML	Materials, Large Scale Applications
LC	Large Scale Applications, Cryogenics

SCHEDULE

Feb 15, 2023 (Wednesday)

09:00-11:00	Board Meeting of KSSC	B1 Montblance (Hotel)
12:00-	Registration	Hotel_2F
12:40-12:50	Opening Ceremony	Halla hall 1,2,3
13:00-13:50	Plenary I	Halla hall 1,2,3
13:50-14:10	Break	
14:10-15:25	Session I	Sara hall 2
14:10-15:40	Special I	Halla hall 1,2,3
15:40-15:50	Break	
15:50-17:05	Session II	Sara hall 2
15:50-17:50	Special II	Halla hall 1,2,3
18:00-20:00	Banquet	B1 BUFFET RESTAURANT(Hotel)

Feb 16, 2023 (Thursday)

07:50-09:00	Board Meeting of PSAC	B1 Montblance (Hotel)
09:00-10:15	Session III	Sara hall 2
09:00-10:20	Session IV	Ilchul hall
09:00-10:20	Session V	Halla hall 1,2,3
10:20-10:40	Break	
10:40-12:00	Session VI	Sara hall 2
10:40-11:40	Session VII	Ilchul hall
10:40-12:00	Session VIII	Halla hall 1,2,3
12:00-14:00	Lunch	
14:00-15:30	Session IX	Sara hall 2
14:00-15:30	Session X	Ilchul hall
14:00-15:45	Session XI	Halla hall 1,2,3
15:30-17:00	Break	
17:00-18:00	Poster Session	Halla hall 1,2,3

Feb 17, 2023 (Friday)

08:00-09:00	Board Meeting of KICS	B1 Montblance (Hotel)
09:00-10:30	Session XII	Sara hall 2
09:00-10:30	Session XIII	Ilchul hall
09:00-10:45	Session XIV	Halla hall 1,2,3
10:30-11:00	Break	
11:00-11:50	Plenary II	Halla hall 1,2,3
11:50-12:30	Closing Ceremony	Halla hall 1,2,3

Feb 15, 2023 (Wednesday)

● BOARD MEETING OF KSSC (09:00-11:00)

B1 Montblance (Hotel)

● REGISTRATION (12:00-)

Hotel_2F

● OPENING CEREMONY (12:40-12:50)

Halla hall 1,2,3

● PLENARY I (13:00-13:50)

Halla hall 1,2,3

Chair : Han-Yong Choi (Sungkyunkwan Univ.)

PL I 분광학적 방법을 이용한 고온초전도 근본원리 연구

김창영

(서울대학교 기초과학연구원 강상관계물질 연구단 /
서울대학교 자연과학대학 물리천문학부)

Break (13:50-14:10)

● SESSION I (14:10-15:25)

Sara hall 2

Chair : Younjung Jo (Kyungpook Nat. Univ.)

IN TP I -1 (14:10-14:40)

Topological Josephson effect in hinge states of WTe_2

GIL-HO LEE

(Department of Physics, POSTECH)

IN TP I -2 (14:40-15:10)

Topological triplet-superconductivity in spin-1 semimetal

박문집

(기초과학연구원)

O TP I -1 (15:10-15:25)

Spontaneous breaking of mirror symmetry beyond critical
doping in $Bi2212$

Saegyeol Jung

(IBS-CCES)

Chair : Sangjin Lee (SNU)

IN PR I -1 (14:10-14:40)

Progress Report on Development of Common Base Technologies for High Temperature Superconductor Magnet
Seungyong Hahn
(Department of Electrical and Computer Engineering, Seoul National University, Seoul, 08826, Republic of Korea)

IN PR I -2 (14:40-15:10)

Progress Report on Development of Design Technologies for High Temperature Superconductor Magnet
Seungyong Hahn
(Department of Electrical and Computer Engineering, Seoul National University, Seoul, 08826, Republic of Korea)

IN PR I -3 (15:10-15:40)

고성능 고온초전도 자석용 선재의 기반기술 개발 현황
하흥수
(한국전기연구원)

Break (15:40-15:50)

Chair : Myung Joon Han (KAIST)

IN TP II -1 (15:50-16:20)

Unconventional spin transport in superconductors
Se Kwon Kim
(KAIST)

IN TP II -2 (16:20-16:50)

High-temperature superconductivity observed in polyhydride at high pressure
Zi-Yu Cao
(Center for Quantum Materials and Superconductivity (CQMS) and Department of Physics, Sungkyunkwan University, Suwon 16419, Republic of Korea)

O TP II -1 (17:50-17:05)

Terahertz study of pair-breaking effects on Nb thin films under an in-plane magnetic field
Ji Eun Lee
(Yonsei University)

Chair : Sangjin Lee (SNU)

IN PR II -1 (15:50-16:20)

**Progress Report on Development of Core Technology for
Ultra-High Field and High Field-Homogeneity
High-Temperature-Superconductor Solenoid Magnet**
SangGap Lee
*(Korea Basic Science Institute (KBSI), Cheongju 28119,
Korea)*

IN PR II -2 (16:20-16:50)

**Core Technology Development for High-Current Toroidal
Field High Temperature Superconductor Magnet - Start
Fabrication**
Sangjun Oh
*(Korea Institute of Fusion Energy, Daejeon 34133, South
Korea)*

IN PR II -3 (16:50-17:20)

**고성능 고온초전도 레이스트랙 코일 핵심기술 개발과제 진행 현황
심기덕**
(㈜수퍼제닉스)

IN PR II -4 (17:20-17:50)

**Progress Report on Core Technology Development of High
Temperature Superconductor Magnets for Fast Ramping
Saddle and Multipole Wiggler**
Garam Hahn
*(Pohang Accelerator Laboratory, Pohang University of
Science and Technology, Pohang, 37673, Korea)*

● BANQUET (18:00-20:00)

B1 BUFFET RESTAURANT(Hotel)

Feb 16, 2023 (Thursday)

● BOARD MEETING OF PSAC (07:50-09:00)

B1 Montblance (Hotel)

● SESSION III (09:00-10:15)

Sara hall 2

Chair : Jungseek Hwang (Sungkyunkwan Univ.)

IN TP III-1 (09:00-09:30)

Disorder effects on the global phase diagram of heavy-fermion superconductors

Soonbeom Seo

(Department of Physics, Changwon National University, Changwon 51140, Republic of Korea)

IN TP III-2 (09:30-10:00)

Ab initio construction of interacting Hamiltonian for superconducting Kagome metal CsV_3Sb_5

Myung Joon Han

(KAIST)

O TP III-1 (10:00-10:15)

Evidences for two different superconducting gaps in Kagome compound CsV_3Sb_5 under pressure

Harim Jang

(Sungkyunkwan University)

● SESSION IV (09:00-10:20)

Ilchul hall

Chair : Jae-Hun Lee (SuNAM Co., Ltd.)

IN MM I -1 (09:00-09:20)

The status of MgB_2 wires for practical applications at Sam Dong

Jun Hyuk Choi

(Sam Dong Co., Ltd., 34027, Daejeon, Korea)

IN MM I -2 (09:20-09:40)

Annealing effect on high-entropy alloy superconductor

Ta_{1/6}Nb_{2/6}Hf_{1/6}Zr_{1/6}Ti_{1/6}

Soon-Gil Jung

(Center for Quantum Materials and Superconductivity (CQMS), Sungkyunkwan University, Suwon 16419, South Korea / Department of Physics, Sungkyunkwan University, Suwon 16419, Republic of Korea)

IN MM I -3 (09:40-10:00)

Disorder anisotropy and in-field critical current performance of multi-band MgB₂ materials

Minoru Maeda

(Kangwon National University, Republic of Korea)

IN MM I -4 (10:00-10:20)

The bulk-type superconducting magnet stacked with HTS CCs for application of the magnetic levitation system

Insung Park

(Korea Electrotechnology Research Institute)

 **SESSION V (09:00-10:20)**

Halla hall 1,2,3

Chair : Seokho Kim (Changwon Nat.I Univ.)

IN LC I -1 (09:00-09:20)

Development of KSLV-II and cryogenics

Seungwhan Baek

(KARI)

IN LC I -2 (09:20-09:40)

Low-power cryocooler development status

Jiho Park

(Department of Thermal-Fluid Machinery, Innovative Energy Machinery Research Division, Korea Institute of Machinery and Materials (KIMM), 156 Gajeongbuk-ro, Yuseong-gu, Daejeon 34103, Republic of Korea)

IN LC I -3 (09:40-10:00)

SCL3 Cryogenic Commissioning for RAON Superconducting Accelerator

TAEKYUNG KI

(Institute for Basic Science)

IN LC I -4 (10:00-10:20)

Performance Test and Commissioning of SCL3 Cryomodules for RAON

Danhye Gil

(IBS)

Break (10:20-10:40)

Chair : Myung-Ho Bae (KRISS)

IN ED I -1 (10:40-11:00)

Control of electron-electron interaction in screened graphene evidenced by electron hydrodynamics

Minsoo Kim

(Department of Applied Physics, Kyung Hee University)

IN ED I -2 (11:00-11:20)

Exploring on-chip thermodynamics through unconfined circuit quantum electrodynamics

Byoung-moo Ann

(Quantum Technology Institute, Korea Research Institute of Standards and Science, 34113 Daejeon, South Korea)

IN ED I -3 (11:20-11:40)

Optimal quantum gates for superconducting quantum computing

Sung Un Cho

(Electronics and Telecommunications Research Institute)

IN ED I -4 (11:40-12:00)

Suppression of correlated errors in superconducting qubits with back-side metallization

Jaseung Ku

(Korea Research Institute of Standards and Science)

Chair : Soon-Gil Jung (Sungkyunkwan Univ.)

IN MM II -1 (10:40-11:00)

Recent developments in SuNAM's coated conductor manufacturing process

Jae-Hun Lee (SuNAM Co., Ltd.)

IN MM II -2 (11:00-11:20)

Development Status of LTS Nb₃Sn Strands Nb₃Sn 저온 초전도 선재 개발 현황

김지만

(Kiswire Advanced Technology Ltd, Daejeon, 34026, Korea)

IN MM II -3 (11:20-11:40)

Technical manipulation and enhancing technology of the MgB₂ superconducting materials

Kookchae Chung

(Korea Institute of Materials Science)

Chair : Jiho Lee (Pusan Nat.l Univ.)

IN LC II-1 (10:40-11:00)

Resent Status of 23 kV 60 MVA class 3-Phase Concentric HTS Cable Project in South Korea

Jin Bae Na

(LS Cable&System Ltd.)

IN LC II-2 (11:00-11:20)

A Study on the Thermal Characteristics of Thermal Battery for Cryogenic Cooling of High Temperature Superconducting Magnet for Ultra-high Speed Magnetic Levitation Train

Jeongmin Mun

(Mechanical engineering, Changwon National University, Changwon, Korea)

IN LC II-3 (11:20-11:40)

Genetic Algorithm Based Room-Temperature Shimming Technology for NMR/MRI Superconducting Magnets

Jae Young Jang

(School of Electrical, Electronics and Communication Engineering, Korea University of Technology and Education, Cheonan, 31253, South Korea)

IN LC II-4 (11:40-12:00)

Abnormal-signal detection under a noisy environment using a resonance filter

Seunghyun Song

(Center for Scientific Instrumentation, Korea Basic Science Institute, Daejeon, 34133, South Korea)

Lunch (12:00-14:00)

Chair : Seung Ryong Park (Incheon Nat.l Univ.)

IN TPV-1 (14:00-14:30)

Superconductivity enhanced in the vicinity of fluctuating orders: tale of two layered systems

Kee Hoon Kim

(Center for Novel States of Complex Materials and Research, Department of physics and astronomy, Seoul National University, Seoul 08826, South Korea / Institute of Applied Physics, Department of physics and astronomy, Seoul National University, Seoul 08826, South Korea)

IN TPV-2 (14:30-15:00)

Anderson localization and field driven delocalization of in-gap-state BdG quasiparticles in Fe-based superconductor

Jhinhwan Lee
(IBS CALDES)

O TPV-1 (15:00-15:15)


Observation of strongly anisotropic superconducting gap structure in Fe(Te,Se)

Younsik Kim
(Seoul National University)

O TPV-2 (15:15-15:30)

Growth and electronic structure studies of single copper-oxygen plane epitaxial films

Youngdo Kim
(Center for Correlated Electron Systems, Institute for Basic Science)

 **SESSION X (14:00-15:30)**

Ilchul hall

Chair : TAEKYUNG KI (IBS)

O EC I -1 (14:00-14:15)

Steady Floquet-Andreev states in graphene Josephson junctions

Sein Park
(Postech)

O EC I -2 (14:15-14:30)

Subbands in topological insulator nanowire identified by magneto-thermal voltages

Du Hyuk Kwon
(Department of physics, Chungnam National University, Korea Research Institute of Standards and Science)

O EC I -3 (14:30-14:45)

Single-shot dilution refrigerator for sub-Kelvin cooling

Dohoon Kwon
(KAIST)

O EC I -4 (14:45-15:00)

Liquid hydrogen station for large capacity and fast charging

변병창
(한국기계연구원)

O EC I -5 (15:00-15:15)

Heat Transfer Mechanism from Sea Water to LNG in Open-Rack Vaporizers

Bo Hyun Kim
(Hong Ik University)

O EC I -6 (15:15-15:30)

A study on improvement of cryogenic boiling cooldown performance by metal surface teflon coating

Hojun Cha

(Changwon National University, Smart Manufacturing Engineering)

SESSION XI (14:00-15:45)

Halla hall 1,2,3

Chair : Wooseung Lee (KBSI)

O ML I -1 (14:00-14:15)

Protection approaches for magnetocaloric materials of La(Fe,Si)13-H alloy powders

Kookchae Chung

(Korea Institute of Materials Science)

O ML I -2 (14:15-14:30)

Local atomic interaction and its impact on superconductivity in GdBa₂Cu₃O_{7- δ }/La_{0.7}Sr_{0.3}MnO₃ heterostructure}

Jun Yung Oh

(Department of Physics, Chungbuk National University, Cheongju, Korea)

O ML I -3 (14:30-14:45)

Superconducting properties and vortex avalanches of high entropy alloys synthesized by melting and powder metallurgical processes

Jong-Soo Rhyee

(Kyung Hee University)

O ML I -4 (14:45-15:00)

A study on the analysis of insulation breakdown of superconducting coils through FEM(finite element analysis)

Minkyung Jeong

(Korea National University of Transportation)

O ML I -5 (15:00-15:15)

All-REBCO NMR 자석의 균일도 개선을 위한 다층 수동보정기술 연구

Hongmin Yang

(군산대학교 / KBSI)

O ML I -6 (15:15-15:30)

A Design Study on 500 kW Fully Superconducting Motor with HTS Armature Winding

Jonghoon Yoon

(Seoul National University)

O ML I -7 (15:30-15:45)

Non-linear Operation Control of NI-class HTS Magnet Using Power Electronic System for SMES Application

Chaemin Im

(Department of Electrical and Computer Engineering, Seoul National University, Seoul, 08826, Korea)

Break (15:30-17:00)

 **POSTER SESSION (17:00-18:00)**

Halla hall 1,2,3

Theory & Physical Properties

Chair : Soonjae Moon (*Hanyang Univ.*)

- TPP1** Vertex correction and interband coupling in superhydride superconductor LaH10
Jin Mo Bok
(POSTECH, APCTP)
- TPP2** Superconductivity via Higher-Order Topological Insulator
Myungjun Kang
(Hanyang University)
- TPP3** Terahertz Electrodynamics in High-Entropy Alloy Superconductors
Ji Eun Seok
(Department of Physics, Yonsei University)
- TPP4** Temperature-dependent Spectral Weight Evolution in Underdoped $\text{YBa}_2\text{Cu}_3\text{O}_{7-6}$
Mingi Jho
(KAIST)
- TPP5** Optical study of anomalies in highly overdoped Bi2212
Hwiwoo Park
(Department of Physics, Sungkyunkwan University)
- TPP6** Optical study of kagome metals RV_6Sn_6 (R = Y, Sc)
Dongwook Kim
(Department of Physics, Hanyang University)
- TPP7** Density wave-like behavior in optical response of 9R BaRuO_3 thin film
Hyungwon Nam
(Department of Physics, Hanyang University, Seoul, 04763, Republic of Korea)

- TPP8** **New experimental platform for two-dimensional helium film adsorbed on a graphene substrate**
Eunseong Kim
(KAIST)
- TPP9** **Synthesis of Ternary-Superhydride Superconductor**
Seokmin Choi
(Center for Quantum Materials and Superconductivity (CQMS) and Department of Physics, Sungkyunkwan University, Suwon 16419, Republic of Korea)
- TPP10** **Coherent phonon oscillations of IrTe₂**
Hongchen Gao
(Chungbuk National University, Cheongju, Korea)

Electronics & Devices Applications

Chair : Minsoo Kim (Kyung Hee Univ.)

- EDP1** **Dynamic filtering of single-electron wave function**
Min-Sik Kim
(JBNU, KRISS)
- EDP2** **Fast Accurate Readout of Superconducting Transmon Qubits with Compact Purcell Filter**
Seong Hyeon Park
(Seoul National University)

Materials

Chair : Jun Hyuk Choi (Sam Dong Co., Ltd.)

- MMP1** **Development of high-performance MgB₂ superconducting wires at Sam Dong**
Dong Gun Lee
(Sam Dong Co., Ltd.)
- MMP2** **Influence of La_{0.7}Sr_{0.3}MnO₃ Addition on Phase Transition and Local Structure of (Bi, Pb)-2223 Superconductors**
Muhammad Angga Anugrah
(Department of Physics, Chungbuk National University)
- MMP3** **초전도 단결정 마그넷**
Sung Hyun Jung
(Sunmoon University)

- MMP4 Development of PLD heater using resistance heating wire**
Jeongtae Kim
*(Cryogenic Apparatus Research Center, Korea
Electrotechnology Research Institute, Changwon, Korea)*
- MMP5 Study on Saddle Coil Winding Machine for
Superconducting Coated Conductor**
Seongjin Yang
*(Pohang Accelerator Laboratory, Pohang,
Gyeongsangbuk-do, Korea (the Republic of).)*
- MMP6 Evaluation of adhesive characteristics in Cu-stabilized CC
joints fabricated by flux-free hybrid welding method**
Arman Ray Nocedal Nisay
(Andong National University)
- MMP7 Widthwise bending effect induced in REBCO CC tapes'
demonstration coils**
Michael Bihasa De Leon
(Andong National University)
- MMP8 Exploring the Impact of Cu Edges on the Delamination
Resistance of Cu-Stabilized REBCO Coated Conductor
Tapes under Transverse Tension**
MARK ANGELO ESPIRITU DIAZ
(ANDONG NATIONAL UNIVERSITY)

Large Scale Applications

Chair : Young Jin Hwang (KMOU)

- LAP1 SFCL을 적용한 22.9 kV 모선 연계 시범 운영**
Min Jee Kim
(LS ELECTRIC)
- LAP2 Effect of Surface Condition on Soldered Joint of
GdBCO-Coated Conductor Tape**
Younghoon Kim
*(Department of Materials Science and Engineering, Korea
University, Seoul, 02841, Korea)*
- LAP3 Study on the Optimized Superconducting Joint Technique
using GdBCO CC tape**
Hyun Sung Noh
*(Department of Materials Science and Engineering, Korea
University, Seoul, 02841, Korea)*
- LAP4 Effect of Open Cell Structure Porous Metal Foam on the
Thermal Characteristics of Current Leads**
Seoung Eon Kim
*(Department of Materials Science and Engineering, Korea
University, Seoul, 02841, Korea)*

- LAP5** Investigation on Effect of Shape Enhancement of HTS Current Lead for Reducing Electromagnetic Interaction
Min Kyu Sun
(Department of Materials Science and Engineering, Korea University, Seoul, 02841, Korea)
- LAP6** A study on the field emission conditioning and field enhancement factor of RAON Half-wave Resonator (HWR) cavity
Sungmin Jeon
(Kyungpook National University)
- LAP7** A preliminary study of HTS high current cables for magnetic energy storage system
Miyeon Yoon
(Tech University of Korea)
- LAP8** Comparison the measured values with numerical and analytical calculation results for magnetization loss in superconducting conductors
Miyeon Yoon
(Tech University of Korea)
- LAP9** Current Status of Superconducting Magnet for RAON In-flight Fragment Separator
Do Gyun Kim
(Institute for Basic Science)
- LAP10** Investigation on stress analysis model of HTS racetrack coil considering of anisotropic properties
Changhyung Lee
(Changwon National University)
- LAP11** Electrical and Thermal Characteristics Analysis by Leakage Currents of Spiral HTS Racetrack Coils
Jongho Choi
(Changwon National University)
- LAP12** Design of a 1 MW Superconducting Motor for Aircraft using Multi-Width and Multi-Thickness for Increased Power Density
JuKyung Cha
(Department of Electrical and Computer Engineering, Seoul National University)
- LAP13** Comparison of the Bulk High Temperature Superconducting Motor Topology
Jaheum Koo
(Department of Electrical Engineering, Pusan National University)
- LAP14** Electromagnetic design of superconducting radio-frequency cavity via continuum sensitivity analysis
Kyungsik Seo
(Seoul National University)

- LAP15 Comparison of Quasi-3D and 3D Models of Superconducting Axial Flux Motor**
Hao Ming
(Seoul National University)
- LAP16 Experimental study on no-insulation HTS coil with contact lap joint inserted**
Geonyoung Kim
(Seoul National University)
- LAP17 Characteristic study of composite material for a spacer in superconducting magnet with conduction cooling system**
Hyunsoo Park
(Department of Electrical and Computer Engineering, Seoul National University, Seoul 08826, Republic of Korea)
- LAP18 Critical Current Measurement and Correction of No-Insulation HTS Coil**
Bonghyun Cho
(Pusan National University)
- LAP19 Measurement of Contact Resistance of Mechanically Contacted ReBCO Tapes**
Wonju Jung
(Seoul National University)
- LAP20 Magnetic Field Behavior of Saddle-Shaped NI HTS Dipole Magnet over Consecutive Charge and Discharge Sequence**
Jeonghwan Park
(Seoul National University)
- LAP21 Transverse emittance increment and beam loss calculation in energy ramp for superconducting synchrotron**
Woojin Song
(Pohang University of Science and Technology, Pohang, Gyeongsangbuk-do, Korea (the Republic of))
- LAP22 Conceptual Design of 20 K Conduction-Cooled Operation of a Parallel-Connected HTS Magnet**
Wonseok Jang
(Seoul National University)
- LAP23 Fabrication of Single Strap Joints Between REBCO Wires Using Resistive Materials**
Kibum Choi
(Department of Electrical and Computer Engineering, Seoul National University)
- LAP24 A study on the Electrical Breakdown Characteristics of Liquid Nitrogen to Design Transmission Superconducting Apparatuses**
Bimaridi Afif
(Korea National University of Transportation)

- LAP25** A Study on the Analysis of dielectric Characteristics under Vacuum Conditions for the Development of High Temperature Superconducting Magnets for Cancer Treatment Particle Accelerator
Woocheol Shin
(Korea National University of Transportation)
- LAP26** Basic Study of the Charging/Discharging Characteristics in High Temperature Superconducting Coils
Seongkeon Park
(Kangwon National University)
- LAP27** Experimental Study on Current Distribution in HTS Stacked Cable with Inter-Strand Contact
Jung Tae Lee
(Department of Electrical and Computer Engineering, Seoul National University)

Cryogenics

Chair : Jiho Park (KIMM)

- CRP1** Experimental analysis of condensation and evaporation heat transfer for non-flammable mixed refrigerant under low temperature conditions
Cheonkyu Lee
(Carbon Neutral R&D department, R&D Institute of Clean Manufacturing System, KITECH)
- CRP2** Integration of Refrigerator and Forced-Flow Cooling for HTS Coils, Radiation Shield, and Current Leads
Yu Mi Cha
(Hong Ik University)
- CRP3** Preliminary Numerical Model for Forced-Flow Gas Cooling of HTS TF Magnet
Jeong Gyu Lee
(Hong Ik University)
- CRP4** Liquid-Hydrogen Storage Tank with GM cryocooler for Zero or Reduced Boil-off Loss
Seong Ho Bang
(Hong Ik University)
- CRP5** Experiments of Magnetic field effect on thermal contact conductance with different interstitial materials in low temperature
Junhyuk Bae
(KAIST)

- CRP6** **Experimental validation on a single stage Stirling cryocooler**
Bokeum Kim
(KAIST)
- CRP7** **A numerical study on the thermal-hydraulic performance of the metal 3D printed airfoil heat sink for cryocooler**
Jaehwan Lee
(Changwon National University)
- CRP8** **Process analysis of LH2 cooling and cold heat utilization according to the flight profile of a 500 kW HTS motor for electric propulsion aircraft**
Youngjun Choi
(Department of Smart Manufacturing Engineering, Changwon National University, Republic of Korea)
- CRP9** **A study on the design of the internal cooling pin structure of a superconducting rotator cooling with cryogenic gas helium**
Yubin Kim
(Smart Manufacturing Engineering, Changwon National University, Republic of Korea)
- CRP10** **Development of 40 K-100 W Gifford-McMahon cryocooler for the first time in Korea**
Kwangjin Oh
(Cryo H&I)
- CRP11** **Development of a 10 ton/day class air liquefaction system for liquid air energy storage**
Sehwan In
(Korea Institute of Machinery and Materials)
- CRP12** **Performance simulation of the Stirling cryocooler with short cold finger**
Yong-Ju Hong
(Korea Institute of Machinery & Materials)

Feb 17, 2023 (Friday)

● BOARD MEETING OF KICS (08:00-09:00)

B1 Montblance (Hotel)

● SESSION XII (09:00-10:30)

Sara hall 2

Chair : Kyungwan Kim (Chungbuk National Univ.)

IN TP V -1 (09:00-09:30)

Signatures of chiral charge density wave in the photoemission intensity

Yeongkwan Kim

(Korea Advanced Institute of Science and Technology, Daejeon, Korea)

IN TP V -2 (09:30-10:00)

Low-Energy Interband Transition in the Infrared Response of Ultraclean SrVO₃

Soonjae Moon

(Hanyang University, Seoul, Korea)

IN TP V -3 (10:00-10:30)

Physical properties of the normal phase of spin-triplet superconductor of UTe₂

Chang-Jong Kang

(Chungnam National University)

● SESSION XIII (09:00-10:30)

Ilchul hall

Chair : Seungwhan Baek (KARI)

O EC II -1 (09:00-09:15)

Experimental investigation on no-vent fill (NVF) process with various fill configurations

Jinwook Kim

(Korea Advanced Institute of Science and Technology (KAIST))

O EC II -2 (09:15-09:30)

Design Data of Helium Gas-Cooled Binary Current Leads with Spiral Fins

Na Hyeon Kim

(Hong Ik University)

O EC II -3 (09:30-09:45)

Introduction of RISP SRF Test Facility Cryogenic System for Mass Production

Heecheol Park

(Institute for Basic Science)

O EC II -4 (09:45-10:00)

The Cooling Structure of High Temperature Superconducting Motor Considering Boiling Heat Transfer of Liquid Hydrogen

Kihwan Kim

(Smart Manufacturing Engineering, Changwon National University, Republic of Korea)

O EC II -5 (10:00-10:15)

Development of sorption compressor for 5 K cooling with thin-plate shape sorption cells

Junhyuk Bae

(KAIST)

O EC II -6 (10:15-10:30)

Design of Cryogenic Cone Type Support Considering Electromagnetic Force of Superconducting Magnetic Levitating Train

Seungcheol Ryu

(Changwon National University, Smart Manufacturing Engineering)

● SESSION XIV (09:00-10:45)

Halla hall 1,2,3

Chair : Kookchae Chung (KIMS)

O ML II -1 (09:00-09:15)

Antiperovskite X3SnC: A new platform for quantum phase transition (X = lanthanide)

Jongho Park

(Seoul National University)

O ML II -2 (09:15-09:30)

2세대 고온초전도 선재의 폭 방향 두께 균일화를 위한 차등 증착 기술 연구

김관태

(Korea Electrotechnology Research Institute)

O ML II -3 (09:30-09:45)

Flux Pinning Enhancement in ZnO buffered MgB2 Films induced by Local Structure Distortion

Rico Pratama Putra

(Department of Physics, Chungbuk National University)

O ML II -4 (09:45-10:00)

Ferromagnetic shim design of NMR magnets using topology optimization

Minchul Ahn

(Kunsan National University)

O ML II -5 (10:00-10:15)

A Numerical Study on Delamination Behavior of Epoxy-impregnated REBCO Racetrack Coil

Uijong Bong

(Department of Electrical and Computer Engineering, Seoul National University)

O ML II -6 (10:15-10:30)

Screening-current-induced Strains in REBCO Insert Coils

Yufan Yan

(Seoul National University)

Break (10:30-11:00)

● **PLENARY II (11:00-11:50)**

Halla hall 1,2,3

Chair : Jeonwook Cho (KERI)

PL II (11:00-11:50)

Progress in the electromechanical evaluation of HTS conductors for applications

Hyung-Seop Shin

(Andong National University, Andong, 36729, Korea)

● **CLOSING CEREMONY (11:50-12:30)**

Halla hall 1,2,3

- Awards

- Closing Remarks

● Organizing Committee

Seyong Choi (*Kangwon Nat.I Univ.*)

Sangmo Cheon (*Hanyang Univ.*)

Eun-Gook Moon (*KAIST*)

Kyungwan Kim (*Chungbuk Nat.I Univ.*)

Myung-Ho Bae (*KRISS*)

Jun Hyuk Choi (*Sam Dong Co., Ltd.*)

Young Jin Hwang (*KMOU*)

Youngkwon Kim (*IBS*)

Tuson Park (*Sungkyunkwan Univ.*)

2023 Winter Conference of KSSC

The Korean Society of Superconductivity and Cryogenics

Korea Electrotechnology Research Institute,
12, Jeongiui-gil, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea (51543)

TEL. +82-55-280-1680 / FAX. +82-55-280-1049

E-mail: kssc1998@gmail.com

Homepage: <http://super.or.kr>