

# PASREG

2025

28<sup>th</sup> - 30<sup>th</sup> Nov. 2025, Tokyo, Japan

Tokyo University of Marine Science and Technology



## 28th November, Friday

17:30 - 19:30 Welcome Reception & Registration

## 29th November, Saturday

8:45 - 9:30 Opening day: Registration & Coffee break

9:30 - 9:35 Welcome Speech

### Session 1: REBCO bulk processing 1

Chair: Difan Zhou & Naomichi Sakai

- 1-1 9:35 - 9:55 [Invited] Filip Antoncik (University of Chemistry and Technology)  
Recent Advances and Industrial Applicability of Single-Direction Melt Growth
- 1-2 9:55 - 10:15 [Invited] Takanori Motoki (Aoyama Gakuin University)  
Recent advancements in Single-Direction Melt Growth (SDMG) for homogeneous and scalable REBCO bulks

10:15 - 10:35 Coffee break & Preparing for poster session

### Session 2: Innovative applications and characterization 1

Chair: Guomin Zhang & Tetsuya Ida

- 2-1 10:35 - 10:55 [Invited] Jean L ev eque (Universit e de Lorraine GREEN)  
Superconducting machine using bulk for aircraft application
- 2-2 10:55 - 11:15 [Invited] In-Gann Chen (National Cheng Kung University)  
Simulation and observation of the motion trajectory of micron-sized iron particles in a Y-Ba-Cu-O HTS bulk with strong trapped magnetic fields
- 2-3 11:15 - 11:35 [Invited] Takashi Nakamura (RIKEN)  
Mobile NMR spectrometer practically implemented with bulk superconducting magnets
- 2-4 11:35 - 11:50 Philippe Vanderbemden (University of Liege)  
Thermal properties of bulk  $GdBa_2Cu_3O_7$  / Ag superconductors prepared by Single Direction Melt Growth (SDMG) process

11:50 - 13:00 Lunch

13:00 - 14:00 Coffee break & Poster presentation



## Session 3: MgB<sub>2</sub> and iron-based superconductors

Chair: Jacques Noudem & Akiyasu Yamamoto

- 3-1 14:00 - 14:20 [Invited] Jacques Noudem  
(Université de Caen Normandie, ENSICAEN, CNRS CRISMAT)  
Toward to overcome the magnetic flux jumps of the bulk MgB<sub>2</sub> superconductors processed by Spark Plasma synthesis and sintering
- 3-2 14:20 - 14:40 [Invited] Muralidhar Miryala (Shibaura Institute of Technology)  
Advancing Critical Currents: Powering Compact MgB<sub>2</sub> superconductors
- 3-3 14:40 - 15:00 [Invited] Shiv Singh  
(Institute of High Pressure Physics of the Polish Academy of Sciences)  
Superconducting properties of bulk Sm-based oxyprictide processed by high gas pressure, cubic anvil, and spark plasma sintering techniques
- 3-4 15:00 - 15:15 Michael Eisterer (TU Wien)  
Field and temperature-dependence of grain boundary currents in K-doped BaFe<sub>2</sub>As<sub>2</sub> bi-crystalline films
- 3-5 15:15 - 15:30 Nur Rahmawati Ayukaryana  
(Tokyo University of Agriculture and Technology)  
Investigation of Mechanical Alloying Effects on Lattice Parameters and Y-As Phase Formation in Y-doped Ba<sub>0.6</sub>K<sub>0.4</sub>Fe<sub>2</sub>As<sub>2</sub> Superconducting Bulks
- 15:30 - 16:10 Coffee break & Poster presentation

## Session 4: Characterization and simulation

Chair: Zigang Deng & Tomoyuki Naito

- 4-1 16:10 - 16:25 Santiago Guadarrama (GREEN - Université de Lorraine)  
3D Multiphysics simulation of HTS bulks with artificial holes during pulsed-Field magnetization
- 4-2 16:25 - 16:40 Satsuki Okumura (University of Tokyo)  
Three-dimensional numerical analysis of levitation forces of radial superconducting magnetic bearings
- 4-3 16:40 - 16:55 Michela Fracasso (DISAT, Politecnico di Torino)  
Magnetic Shielding Performance of Bi-2223 Bulk and Hybrid Layouts: an experimental and 3D Modelling Investigation
- 4-4 16:55 - 17:10 Yanxing Cheng (Southwest Jiaotong University)  
Redescription of inhomogeneity and anisotropy in bulk superconductors of high-temperature superconducting pinning maglev
- 4-5 17:10 - 17:30 [Invited, Remoto] Mark Ainslie (King's College London)  
Numerical modelling of Ba122 bulk superconductor magnetisation
- 18:00 - 20:00 Banquet



## 30th November, Sunday

9:00 - 9:30 Registration & Coffee break

### Session 5: REBCO bulk processing 2

Chair: Filip Antoncik & Takanori Motoki

- 5-1 9:30 - 9:50 [Invited] Pavel Diko (Institute of Experimental Physics, SAS)  
Microstructure and properties of REBCO bulks: influence of TSMG, SDMG and high temperature post annealing
- 5-2 9:50 - 10:10 [Invited] Difan Zhou (Shanghai University)  
Recent progress on processing and magnetization of HTS bulks superconductors at Shanghai University
- 5-3 10:10 - 10:25 Xiwen Zhang (Hangzhou Kede Magnetic Components)  
The microstructure and superconducting properties of YBCO bulks prepared by combined-modified precursor powders
- 5-4 10:25 - 10:40 Hiroto Hakoishi (Iwate University)  
Machining of Ag-added GdBCO bulk into a ring shape using a lathe and its trapped field characteristics
- 5-5 10:40 - 10:55 Mayin Si (Southwest Jiaotong University)  
The influence of semi-spherical shallow pit on the equivalent magnetic susceptibility of HTS bulk
- 10:55 - 11:30 Coffee break & Group photo

### Session 6: Innovative applications and characterization 2

Chair: Jean L  v  que & Kazuya Yokoyama

- 6-1 11:30 - 11:50 [Invited] Mitsuru Izumi  
(Tokyo University of Marine Science and Technology)  
An HTS rotor for a ship propulsion application
- 6-2 11:50 - 12:10 [Invited] Zigang Deng (Southwest Jiaotong University)  
The development status and prospect of HTS pinning maglev in SWTJU
- 6-3 12:10 - 12:30 [Invited] Guomin Zhang  
(Institute of Electrical Engineering, Chinese Academy of Sciences)  
Researches on a New-type Superconducting Flywheel Energy Storage System
- 6-4 12:30 - 12:45 Tetsuo Oka (Shibaura Institute of Technology)  
Levitation property of permanent magnets on cryocooler-cooled superconducting bulk magnet and its application to contactless mixer
- 6-5 12:45 - 13:00 Peng Zhao (Beihang University)  
Lateral drag performance of HTS translational levitation above different superconductor combinations used for satellite semi-physical simulation
- 13:00 - 13:20 Conclusions & End of the conference



Poster Session (29th November, 13:00 - 14:00 and 15:30 - 16:10)

Chair: Tetsuo Oka & Yutaka Terao

- P1 In Gyeong Park (Superconductor Magnetic Levitation Technologies)  
The effect of seed numbers on the magnetic levitation force of melt-growth processed YBCO bulk superconductors with multi seeding
- P2 Chan-Joong Kim (Superconductor magnetic levitation technologies)  
Production of large grain YBCO bulk superconductors by a melt growth process with multi-seeding
- P3 Ryutaro Ashioi (Iwate University)  
Crystal growth and superconducting properties of YBCO bulks fabricated by the SDMG method using a SmBCO seed plate
- P4 Ryo Asako (Aoyama Gakuin University)  
Control of the carrier doping state for REBCO melt-textured bulks grown by the SDMG method
- P5 Jun Endo (Aoyama Gakuin University)  
Misfit angles and superconducting properties of REBCO melt-textured bulks grown on multiple seed plates by the SDMG method
- P6 Naoya Matsunaga (Aoyama Gakuin University)  
Preparation of GdBCO melt-textured bulks by TSMG and SDMG method
- P7 Keita Kunimoto (Aoyama Gakuin University)  
Preparation of SDMG processed REBCO bulks with dilute impurity doping and their field-trapping properties
- P8 Serua Tursyntyay (Kazakh-British Technical University)  
Synthesis and Characterization of BSCCO-Based High-Temperature Superconducting Ceramics
- P9 Malik Shadab (Shibaura Institute of Technology)  
Optimizing the Powder-to-Solution Ratio in Boron Ultrasonication to Enhance Bulk MgB<sub>2</sub> Superconductors
- P10 Gaetan Simon (Shibaura Institute of Technology)  
Synthesis of NbB<sub>2</sub> particles in bulk MgB<sub>2</sub> superconductors using Nb<sub>2</sub>O<sub>5</sub> and metallic Nb
- P11 Yota Kakumae (Iwate University)  
Fabrication and trapped field properties of MgB<sub>2</sub> bulks using Mg-vapor under self-pressure
- P12 Yusuke Somazawa (Iwate University)  
Preparation and magnetic field trapping properties of MgB<sub>2</sub> bulks using B powder refined by ultrasonic irradiation or ball milling
- P13 Nodoka Shimizu (Tokyo University of Agriculture and Technology)  
Search for new iron-based superconductor with FeSi layer
- P14 Fumiya Shimoyama (Tokyo University of Agriculture and Technology)  
Study on Hydrogen-doping to SmFeAsO Polycrystalline Bulks Using Metal Hydrides
- P15 Shunya Tomioka (Nagoya University)  
Fluorination / Hydrogenation of SmFeAsO bulk samples via topotactic reaction
- P16 Ichiro Mizuto (Tokyo University of Agriculture and Technology)  
Critical properties of K-Ba122 bulk using spark plasma sintering with high milling energy
- P17 Yoshihisa Kamiya (IMRA JAPAN)  
CaKFe<sub>4</sub>As<sub>4</sub> superconducting bulk: reducing oxides to improve  $J_c$
- P18 Michela Fracasso (DISAT, Politecnico di Torino)  
Cryogenic Scanning Hall Probe Magnetometry for Local Magnetic Characterisation of Bulk and Coated Superconductors



- P19 Yuto Hirumi (The University of Tokyo)  
Three-dimensional numerical analysis of superconducting magnetic bearings for reducing electromagnetic rotational losses
- P20 Li Wang (Southwest Jiaotong University)  
Dynamic Response of YBCO Bulks Maglev System Under High Frequency Excitation
- P21 Chong Lv (Southwest Jiaotong University)  
Motion Stability of the Levitation and Suspension with  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  HTS Bulks and NdFeB Magnets under Electromagnetic Compensation Subsystem
- P22 Kazuya Yokoyama (Ashikaga University)  
Improvement of pulsed-field magnetization by simple approach: FAVS method (First Applying a Very Small magnetic field)
- P23 Naomichi Sakai (Shibaura Institute of Technology)  
Development of single-sided diffusion NMR device using the high magnetic field gradient on the surface of a RE-Ba-Cu-O bulk superconducting magnet
- P24 Mio Ito (Tokyo University of Agriculture and Technology)  
Image Analysis of Superconductor Microstructures Using Deep Learning
- P25 Muneo Futamura (Akita Prefectural University)  
Improved Vertical Stability of Bulk Superconducting Levitation by Auxiliary Permanent Magnets
- P26 Tetsuya Ida (Tokyo University of Marine Science and Technology)  
Trapped magnetic field by a single pulse magnetic field using waveform control technology in HTS bulk
- P27 Toshiteru Kii (RIKEN SPring-8 Center)  
Insertion Device using bulk Superconductor for Future Light Sources
- P28 Devendra Kumar Namburi (University of Glasgow)  
Superconducting Nanowire Single Photon Detectors tuned for 1064 nm