

Editorial Foreword

SNF Issue No. 54

We are pleased to present Issue 54 of the Superconductivity News Forum. This is the first one launched with the new SNF website, and we hope you will enjoy the new format.

This issue includes first the announcement of the signature of a Memorandum of Understanding between the Cryogenics and Superconductivity Society of Japan (CSSJ), and the European Society of Applied Superconductivity (ESAS) which in this way extends the international support to the SNF initiative. This agreement is now properly reflected in the new SNF web site.

We include three presentations made at Magnet Technology 28 (MT-28) celebrated in Aix-en-Provence (France). This information about MT-28 is completed with a highlight concerning the visit to the site of ITER presented by co-editor Dr. K. Kabayashi. We then include four presentations made at the 16th European Conference of Applied Superconductivity (EUCAS 2023) celebrated in Bologna (Italy). Finally, we include as well five presentations made at Cryogenic Engineering Conference and International Cryogenic Materials Conference (CEC-ICMC 2023) celebrated in Honolulu (Hawaii, USA).

The presentations from MT28 include two plenary talks. The first one is from Dr. Liye Xiao (Institute of Electrical Engineering, Beijing), and it refers to the hot topic “The Prospect of Carbon-Neutrality-Driven Energy and Power and the Possible Application of Superconductors”. The second one is from Dr. Denis Le Bihan (Neurospin, Saclay) and reports about progress on “Exploring the Human Brain with Ultra-High Field MRI: Perspective from the Iseult Project”. Finally, Dr. Ziad Melhem (Oxford Quantum Solutions) further advances in an Invited talk about the progress in defining the international “Superconductivity Global Alliance (ScGA)”.

From EUCAS 2023 we include the plenary talk of Dr. Teresa Puig (ICMAB – CSIC) related to her presentation “Overview on Progress, Challenges and Frontier Research of Coated Conductors for Applications.” Additionally, we have included three Invited talks. The first from Dr. Kazumasa Iida (Nihon University, Japan) presents an overview of “Fe-based Superconducting Thin Films and their Potential for High Field Applications”. The second one is made by Dr. Jan Plecháček (CAN Superconductors), and it covers an update of the “Current Progress in HTS Bulks and Materials for Industrial Applications”. The third is the electronics-related presentation of Dr. D. Scott Holmes (IRDS CEQIP) on “Superconductor Electronic Logic Family Metrics and Comparisons”.

Concerning CEC-ICMC 2023, we include the plenary talks delivered by Dr. Rodney A. Badcock (Paihau-Robinson Research Institute, New Zealand) about one of the issues which were widely tackled in this conference: “Electric Aircraft: Solving the Propulsion Materials and Engineering Challenges” and the presentation by Dr. Paul Chu (Univ. Houston, USA) titled “From High-temperature Superconductivity to Room-temperature Superconductivity: From Ambient Pressure to Very High Pressure”. We then include three

invited talks. The first one is from Dr. Judy Wu (Univ. Kansas, USA) who talked about “Ca-repaired BaZrO₃ Nanorods/YBa₂Cu₃O_{7-x} Interface for Enhanced Pinning in YBa₂Cu₃O_{7-x} Nanocomposites with 2-8% BaZrO₃ Doping”. The second one was delivered by Dr. Goran Majkic (University of Houston, USA) about “Understanding In-Field Performance of REBCO Conductor with Artificial Pinning Centers by Scanning Raman Spectroscopy and 2D-XRD”. Finally, we include the Invited talk delivered by Dr. Ziad Melhem (Oxford Quantum Solutions) related to “Cryogenic Solutions to Address Net Zero Emissions Targets”.

We hope that you will find the content of SNF Issue No. 54 informative and interesting. Remember to periodically check back to the site for continuous updates and announcements.

Xavier Obradors and the SNF Editorial Team