

## Editorial Foreword

This is the first preview of the Issue 52 of the Superconductivity News Forum which contains a large number of new presentations made at four different conferences: 15<sup>th</sup> European Conference on Applied Superconductivity (EUCAS 2021), 35<sup>th</sup> International Symposium on Superconductivity (ISS 2022), 2<sup>nd</sup> International Conference on Emissions Free Air Transport Through Superconductivity (EFATS 2022) and the Applied Superconductivity Conference 2022 (ASC 2022).

The most recent set of pdf files corresponds to a selection of three invited presentations made at ISS 2022, a hybrid conference celebrated in Nagoya (Japan) in 29<sup>th</sup> November – 1<sup>st</sup> December 2022. We include, first, a review of the advances in creating HTS Magnets for Spherical Tokamaks (Rod Bateman), then a design of a HTS magnet for an Induction Heating Device (Satoshi Fukui) and, finally, an electrodynamic suspension magnet made with Coated Conductor Tapes (Guangtong Ma).

The next contributions of selected talks correspond to the first six presentations already available from ASC 2022. This was a very well attended conference having already a full personal participation which was celebrated in Honolulu (Hawaii, USA) in 23<sup>th</sup> – 28<sup>th</sup> October 2022. Unfortunately, participants from a few countries, like China, were still not able to attend the conference. We certainly hope that the normalization of celebrating conferences with full participation of members from all the countries will become a reality. Our selection of contributions from ASC 2022 includes plenary and invited talks, as well as presentations from the awarded students. This preview issue already includes five invited speakers and one student awardee. We expect to include additional presentations in the full SNF Issue 52.

In the Electronics section of ASC 2022 we have selected four presentations related to a contribution to a Superconducting Quantum Computing Technology Roadmap (Scott Holmes), two additional contributions pertain to digital technologies (Christopher Ayala and Akira Fujimaki), and we complete this section with a contribution from Sergey Tolpygo related to the development of planarized NbN layer electronics.

Finally, we include an invited presentation by Patrik Vonlanthen related to the development of Ultra-High-Field NMR magnets and one contribution from the awarded students (Laura Wheatley) related to a nanoscale tomography analysis of Nb<sub>3</sub>Sn wires.

A third group corresponds to a selection of 11 presentations made at EFATS 2022, a hybrid conference celebrated in Glasgow (U.K.) in 30<sup>th</sup> – 31<sup>st</sup> August 2022. This conference covers a wide spectrum of aspects related to the new topic of considering HTS materials and systems as competitive inputs for the big challenge of having sustainable electric aircrafts. The conference was attended by academic and industrial partners and several of them have been included in this issue. A wide list of topics was covered: REBCO coated conductors, MgB<sub>2</sub> wires, cables, motors, magnets, cryocoolers.

A final selected talk is an additional contribution from the virtual conference EUCAS 2021 celebrated in Moscow in September 2021. It corresponds to the plenary talk made by Tabea Arndt and Mathias Noe from KIT which is devoted to the expected impact of high temperature superconductors in the challenge of achieving a green energy system.

We hope that you will find the content of this SNF preview issue informative and interesting.

Xavier Obradors and the SNF Editorial Team