

Preface

The 21st International Conference on RF Superconductivity, SRF 2023, was held at the Amway Grand Plaza Hotel in Grand Rapids, Michigan, USA from Sunday 25 June 2023 to Friday 30 June 2023. Tutorial sessions were held prior to the conference (Thursday 22 June 2023 to Saturday 24 June 2023) in East Lansing, Michigan, USA, on the campus of Michigan State University (MSU). SRF 2023 was hosted by MSU's Facility for Rare Isotope Beams (FRIB).

SRF 2023 was an in-person conference, in contrast to the virtual format of SRF 2021 which was a consequence of the COVID-19 Pandemic. The SRF 2023 organizers were relieved to be able to return to a traditional format again, 4 years after the previous in-person conference in 2019.

Some statistics from SRF 2023 are included in Table 1 below. The conference brought together 282 participants, including delegates from 34 countries, and 13 industrial exhibitors. The SRF 2023 tutorials featured 12 lectures on selected topics in RF superconductivity; 62 people participated in the tutorials. Material from the tutorial lectures is included in the proceedings.

The organizers were able to provide limited support for student participation in the conference. The student grants covered the registration fees and lodging; 15 students received grants. A special student poster session was held in parallel with the welcome reception on Sunday 25 June 2023. A total of 46 posters were presented in the student poster session.

The main science program was distributed into 10 oral sessions and 3 poster sessions. The oral session topics were Facilities, Fundamental R&D, SRF Technology, and Applications. The SRF Applications session was included in the program for the first time, providing an opportunity for researchers and industrial suppliers to present their R&D work on applications of SRF technology. Oral sessions were held in the morning Monday through Friday; poster sessions were held in the afternoon Monday through Wednesday. A keynote talk was presented on Wednesday evening. Student poster award winners were invited to deliver 10-minute presentations in the last oral session on Friday.

SRF 2023 was held 60 years after the publication of the first SRF R&D paper by researchers at Stanford University. A special commemorative session was convened on Tuesday evening, featuring talks from 3 of the SRF pioneers who did groundbreaking work that is the foundation for the present success of our field. This was an excellent chance for SRF practitioners and newcomers to learn about the early history of our field. After the commemorative session, a brief ceremony was held in remembrance of people from the SRF community who have passed away.

A total of 73 oral presentations were made at SRF 2023, including 66 invited or contributed orals, 1 keynote talk, 3 commemorative talks, and 3 presentations by student poster award winners. A total of 248 posters were presented in the Monday-Wednesday poster sessions. A team of 9 editors reviewed a total of 208 papers submitted for publication in the proceedings.

The traditional SRF conference boat trip was a Thursday afternoon cruise on a 19th century steamship replica on Michigan's Grand River; 252 people joined the boat trip. The conference banquet was held at the Grand Plaza Hotel after the boat trip. The banquet included a ceremony honoring past and upcoming retirees from the SRF community.

The conference concluded on Friday afternoon with a visit to the campus of Michigan State University for a tour of the Facility for Rare Isotope Beams, which began user operations in May 2022. FRIB is now the largest heavy-ion SRF accelerator in the world.

Prizes were selected and awarded by the International Science Program Committee (SPC) for outstanding student posters and outstanding oral presentations by early-career investigators. Presenters who completed their PhD within 3 years of the conference were eligible for early-career investigator awards. The prizes were selected based on the following criteria:

- Relevance and impact of the scientific work
- Novelty and quality of the scientific work
- Quality of the poster or oral presentation
- Interaction and professionalism towards the SPC

The student poster award winners were

First Prize: **Mattias McMullin**, TRIUMF, for the poster “Thermal Feedback in Coaxial SRF Cavities”

Second Prize: **Yue Zong**, Shanghai Institute of Applied Physics, for the poster “Realization of Accelerating Gradient Larger than 25 MV/m on High-Q 1.3 GHz 9-Cell Cavities for SHINE”

Third Prize: **Daniel Seal**, Cockcroft Institute, for the poster “Optimization of Niobium Thin Film Deposition Parameters for SRF Cavities”

The early-career award winners were

Liana Shpani, Cornell University, for the oral presentation “Development of High-performance Niobium-3 Tin Cavities at Cornell”

Yasmine Kalboussi, CEA-Saclay, for the oral presentation “Surface Engineering by ALD for Superconducting RF Cavities”

Edward Thoeng, University of British Columbia/TRIUMF, for the oral presentation “First Results from beta-SRF-Testing SRF Samples at High Parallel Field”

The success of SRF 2023 was due to the excellent collaboration between the international science program committee/organizing committee, scientific program advisory board, and local organizing committee. We appreciate very much the work and enthusiasm of the participants, as well as the continuous support of societies, institutes, and laboratories worldwide contribute, all of which contribute hugely to the success of our field!



Kenji Saito, MSU/FRIB
SRF 2023 Conference Chair

Table 1: SRF 2023 Statistics

Conference participants	282
Countries represented	34
Industrial exhibitors	13
Tutorial participants	62
Student grants	15
Boat trip participants	252
Oral presentations	73
Student poster presentations: Sunday	46
Poster presentations: Monday-Wednesday ^a	248
Editors	9
Papers published	208

^aIncluding student posters, as presenters in the Sunday student poster session were invited to present their posters again during one of the regular Monday-Wednesday poster sessions.