

Sponsored session at 27th International Conference on Magnet Technology, Fukuoka Hybrid, 2021.11.15-19

A special session "Lesson learned" was sponsored by IMR, Tohoku University, at 27th International Conference on Magnet Technology, Fukuoka Hybrid, 2021.11.15-19. The session provided lessons based on the operation and the troubles, which are not so accessible in spite of those importance. This session focuses on those quite important lessons learned in HTS and LTS devices.

The 27th International Conference on Magnet Technology (MT27) was held at Fukuoka International Congress Center, Fukuoka, Japan and online (hybrid) from November 15 to 19, 2021. MT27 is a world largest international conference on magnet technology with the theme of "Innovation in Superconducting Magnet Technology." 5 plenary talks, 177 regular and invited orals, and 739 posters are presented. There are 822 conference attendees (195 onsite and 627 online) from 23 countries including 227 students. At the opening ceremony, the Crown Prince Akishino kindly delivered his video message expressing his recognition of the importance of the superconducting technology for the advancement of sciences and resolution of global issues that humanity faces at present such as various illness and climate change.

The special session "Lesson learned" was planned at MT27. Generally, most successes and achievements are reported in the conferences and literatures. However, the lessons based on operations and troubles are not so accessible in spite of those importance. The special session provided quite important lessons learned in low temperature and high temperature superconducting devices. The program of the special session is shown in Fig. 2. 6 special talks of "lessons learned" in Fusion, accelerator and high field magnet facilities were given. Dr. M. Bird introduced the historical operation of high field magnets beyond 27 T at National High Magnetic Field Laboratory (NHLFM) for 27 years. Some failures of superconducting outsert for the 45 T hybrid magnet and 32 T superconducting magnet were provided. In addition, Prof. S. Hahn from NHMFL and Soul National University gave recent progress on the super

-conducting magnet developments with "Non insulation" technique, which can provide stable operation and good protection for HTS magnets. The attendees of the session learned many experiences, which are not provided in general conferences. In addition, GIMRT-IMR logo was shown on the MT27 web page and the program booklet as a sponsor. One page advertisement of GIMRT also appeared in the program booklet.

References

[1] <https://csj.or.jp/conference/MT27/>



Fig. 1 Chairpersons of the special session "Lesson Learned", Prof. P. Bruzzone (EPFL) on-line and S. Awaji (Tohoku University) on-site.

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Special Session “Lesson Learned”

(sponsored by Institute for Materials Research, Tohoku University)

Special session “Lesson learned” is organized in the evening (JST) on Nov. 17. It is quite important to share the knowledge obtained in a history of superconducting devices such as accelerator, fusion, NMR/MRI, high field magnet and so on. Most improvements and achievements can be found in the literatures. On the other hand, lessons based on the operation and the troubles are not so accessible in spite of those importance. This session focuses on those quite important lessons learned in HTS and LTS devices. Six experts from fusion, accelerator, high field magnet communities are invited. The session organizer is Prof. Pierluigi Bruzzone, PSI, Switzerland.

Title	Speaker
Successes & Failures in Design Solutions During the 30 Year Life of ITER (and how we could have improved)	Neil Mitchell (ITER Organization)
Lessons Learned in the Development of Accelerator Magnets based on Nb3Sn and HTS	Stephen Gourlay (LBNL)
Lessons learnt in HL-LHC interaction region superconducting magnets: two case studies	Ezio Todesco (CERN)
Some Lessons Learned During 27 Years Operating Above 27 Tesla	Mark Bird (FSU)
Lessons Learned in No-insulation HTS Magnet Technology	Seungyong Hahn (Seoul National University)
Bringing a Nuclear Quality Approach to Superconducting Magnets	Liao Min (ITER Organization)

Fig. 2 Program of the special session “Lesson Learned” at MT27 appeared on the web-site [1].