

Editorial Forward Issue No. 29

July 30, 2014 (E29). Issue No. 29 presents selected and annotated plenary and invited presentations from the recent ICEC25-ICMC2014 Conference held at Enschede, The Netherlands, July 7 to 11, 2014. They highlight progress in cryoengineering and in superconducting materials processing and manufacturing and design of magnets.

Cryoengineering:

Cryogenics at the European Spallation Source ([CRP42](#)) requires cooling for cryomodules at 2 K, 40 K and from 4.5 to 300K, with supercritical H₂ as well as liquid He (LHe) and LN₂. The elaborate design and installation of the various cryoplants, cryogenic distribution lines, as well as He recovery and storage components are highlighted. Cooling without liquid cryogens is addressed in invited presentation [STP381](#), where progress in thermoelectric or solid-state cooling technologies is elucidated. The invited [STP382](#) presents space applications, with the challenging cooling for Soft X-ray Spectrometers down to 50 mK by adiabatic demagnetization refrigerators. The invited [STP383](#) presents cryogenics considerations for possible future CERN circular hadron supercolliders, beyond the present LHC. Furthermore, a comprehensive approach to all aspects of space cryocooler developments is summarized in the plenary presentation [CRP44](#).

Materials and Magnets:

The plenary presentation [CRP43](#) discusses materials challenges in the ITER toroidal magnet systems, while the invited [STP384](#) presents a study of microstructure and critical current density correlations in round and flat BSCCO superconducting wires.

New Paper Highlights:

We also included in this Issue three recent paper highlights, one on superconducting fault current (SFCL) modeling ([STH20](#)), another on record high magnetic field trapped in superconducting bulk ([STH21](#)) and the third ([STH19](#)) on recent advances in the processing of 122 Fe-based superconducting wires and tapes, which brings them nearer to practical applications.