Editorial Forward Issue No. 33

August 17, 2015 (E33). This issue was delayed by two weeks to accommodate selected presentations and preprints from two most recent international conferences: CEC-ICMC 2015 (June 28 to July 2) held in Tucson, AR, USA, and ISEC 2015 (July 6 to 9) held in Nagoya, Japan. The selected conference material includes presentations (slide shows or posters) of papers not submitted for publication in peer-reviewed journals. To presentations added are explanatory notes or extended abstracts.

We select conference contributions, which in our opinion deserves wide dissemination. The selection is done by SNF Associate Editors and reviewers mostly from conference plenary and invited presentations. Only part of our selection appears in SNF, because not all of selected authors wish to have their work included or don't find time to provide explanatory notes. What appears in SNF should give only a taste of interesting work the readers will soon find in conference journal publications or proceedings.

This year's CEC-ICMC 2015 highlighted in plenary and topical sessions the merits of superconducting materials for applications. The plenary CRP52 demonstrated the potential offered by current developments in superconducting and cryogenics technologies for dramatic impacts on the future of aviation, by utilizing "Superconducting Turboelectric Distributed Aircraft Propulsion". Recent progress in the development of bulk superconducting materials, reported in plenary CRP51, shows how close we are to applications.

Of the invited presentations, STP450 demonstrates merits of 10 MW class superconducting wind turbine generators. The invited STP449 explains the cryogenic system process design of the European Spallation Source, the ESS neutron scattering facility. Attractive prospects for the use of 'classical' high-temperature superconductors are highlighted in three overviews. While STP454 presents novel technologies for advanced overpressure processing of Bi-2212, STP453 is demonstrating the effectiveness of laser striation for AC loss reduction of coated conductors, and STP452 reports on the record engineering current densities achieved in HTS conductors on round core, the CORC cables. Our selection also includes STP451 on the prospects of the novel iron chalcogenides for low-temperature high-field use. The proceedings of CEC-ICMC 2015 will appear in the Open Access IOP Conference Series: Materials Science and Engineering (MSE), which is part of IOP Conference Series.

ISEC 2015 accepted overall over 60 submitted papers, which will be published in a special Issue of IEEE Transactions on Applied Superconductivity (TAS). The SNF selection includes two out of 6 ISEC plenary presentations, both not submitted to TASC: CRP54 gives a broad overview on work ongoing on energy efficient SFQ computing, including memory and fabrication process, while CRP53 overviews exciting fundamental research work on coherent quantum phase slip, a quantum conjugate to the Josephson effect.

The invited preprint ST461 demonstrates 10k-gate-scale Adiabatic-Quantum-Flux-Parametron circuits, an interesting alternative to the main approach addressed in CRP54. High-frequency work is represented by invited preprint ST60 on quantum arrays for high-dynamic-range microwave reception and invited poster ST459 on the effect of LC shunting on I-V characteristics of irradiated Josephson junctions, of possible interest to quantum metrology. SQUID applications are represented by invited poster presentation STP458, a step towards magneto-encephalographs with better performance in relatively inexpensive shielded rooms, and invited preprint ST457 describing a novel SQUID microscope for scanning of room-temperature geological rock samples.

Finally, a few especially interesting regular contributions were selected for inclusion in this Issue. Only two authors consented, both working on SQUID applications in the same areas as those invited: presentation STP456 on ultra-low magnetic field MRI without shielding, and preprint ST455 on magnetic prospecting of mineral resources.