Editorial Forward Issue No. 34

October 30, 2015 (E34). This Special Issue in dedicated exclusively to EUCAS 2015 plenary slide presentations (all not submitted as papers for publication in *IEEE Trans. Appl. Supercond.*) and selected invited slide presentations all but one also not submitted there, i.e., with one invited paper preprint included. Most, but not all, slide presentations are annotated to make them better understandable to readers who did not attend these live presentations. In addition, included are slide presentations and extended abstracts, or full text preprints, of the three EUCAS 2015 papers awarded the "Young Investigator Prize" (see PA30 on winning authors). One prize has been awarded in each of the subject areas of electronics, large-scale applications, and materials (including wire & tape conductors), corresponding to the main technical categories of EUCAS and the field of applied superconductivity. An overview and general conclusion of that successful major conference, written by the Pascal Tixador, Chair of EUCAS 2015, are published as Event Highlight HE105.

Below we characterize per the field category the material included in the Issue:

Electronics

We selected only one plenary EUCAS presentation (PL-5) by Alexey Ustinov on the novel subject of superconducting metamaterials. Of invited presentations we included one (2A-E-O1) on integrated circuits processing for the major energy saving computing (C3) IARPA project, two on detectors for astronomy and other possible applications, namely kinetic inductance detectors (3M-E-O2.1) and hot-electron-nanobolometers for astrophysics (3A-E-O2.1) and also one (3A-E-O1.1) on deployable, SQUID-based, MRI systems (LFMRI).

Large Scale

No plenary presentations are included. However, we feature presentations on the two major on-going HTS cable projects, Essen (1A-LS-O1.1) and Yokohama (2A-LS-O1.3), together with lessons learned in the US cable project (1A-LS-O1.2). Furthermore, we included an invited preprint on coils for the EU wind turbine generator project (2M-LS-O1.1). From the Special Session on modeling for applications, included are invited keynotes (3A-LS-O1.2, 3A-LS-O1.3) and invited posters (3A-LS-O1.7, 3A-LS-O1.8, 3A-LS-O1.16) on important tools in the mechanical and electro-magnetic performance modelling methods for superconductivity applications.

Materials and Conductors

It pleases us most that all of the plenary presentations on superconducting materials can be published, some of them annotated. We begin with Wilfried Goldacker's ESAS award plenary (PL-ESAS Award) on the development and characterization of advanced Roebel-Coated-Conductors and their far-reaching prospects for magnet technology, electrical and power engineering. Sustainable progress in the heterostructure growth processes of nanocomposite coated conductors, where robust production technologies are now in place, are presented in PL7 by Teresa Puig. Teruo Izumi (PL3) elucidated the Japanese contributions to the development of high-performance coated conductors, its status and future. This is complemented by a report (PL10, Marina Putti) on the nature of superconductivity in novel superconducting materials, MgB_2 and iron-based superconductors together with progress in related processing methods. A comprehensive overview of the manufacturing of both low-temperature and high-temperature superconductors, like NbTi and Nb_3Sn, Bi-2212 and YBCO, together with their

applications in the power grid in China are given in PL4 by Pinxiang Zhang. Finally, we included two invited Presentations as follows: In 3M-M-02.1 described are advanced methods of careful determination of the electromechanical properties of selected cuprate superconductors. Such methods eventually govern the handling of these materials during applications. The other presentation (3A-WT-O1) is on field and temperature scaling of the critical current density in commercial REBCO coated conductors.