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Editorial

Symposium on Radiation Measurements and Applications

On June 9–12, 2014, the Symposium on Radiation Measurements and Applications (SORMA XV) took place at the University of Michigan campus. This was the 15th in the long-running series traditionally held every four years in Ann Arbor, and marked its 50th anniversary since inception. Attendance peaked again at nearly 500 conferees, with 135 students in attendance.

Radiation detection and measurement science has always been an active field because of the large number of applications that depend upon such measurements, but the new emphasis on global nuclear security has added challenges to our expertise that were unimaginable just a decade ago. These important contemporary issues have attracted new engineers and scientists, and have accelerated R&D progress in materials, methods, and systems. SORMA XV presented a snapshot of the progress on the most significant technological problems being addressed by our community (Fig. 1).

Fig. 1. Professor Fred Becchetti presents the history of the bubble chamber and its evolution into contemporary radiation detectors.

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The Organizing Committee was again passionate about ensuring this forum remains open and accessible to all practitioners who are dedicated to our craft, and we were again pleased to find a large number (135 of 500 attendees) of both domestic and international students in attendance. This continues to bode well for the future of our field.

We gratefully acknowledge the encouragement and generous support of our federal and local sponsors. These organizations understand the importance of our science and the value of this symposium. In particular, the College of Engineering at the University of Michigan generously provided the funds to offset most of the cost of attendance for the attending students, and the Department of Energy (NNSA) kindly provided the funds for the publication of these proceedings. While the other U.S. federal agencies that traditionally supported this conference were restricted from providing direct support to the meeting, much of the fine work presented at this symposium was funded through their research grants. Because of their direct and indirect support, the symposium provided an engaging technical forum for attendees coming from around the globe.

As General Chair for SORMA XV, I wish to share my admiration for and gratitude to the small core group of volunteers who are the life and spirit of this conference. Prof. Geehyun Kim continued to distinguish himself as the Associate Chair for the meeting, serving as the conference leader and our motive force. He is the face of the conference for its web presence, and our central hub for all matters dealing with the flow and organization of people, presentations, and papers. Professor Zhong He again so ably served at the Technical Chairman, and brilliantly led the selection and organization of presentations. Professors Becchetti, Hammig, Clinthorne, and Pozzi shared their incomparable expertise, guided the selection of topics, sessions, presentations, and were absolutely essential to execution of the meeting.

At the University of Michigan, we are fortunate to have a superb Conference Management unit that handled all of the administrative details that involved securing housing, facilities, transportation and food, as well as the handling of the financial aspects of the meeting. While they remain anonymous to the attendees, their hard work ensured the meeting ran smoothly and efficiently, and allowed the Organizing Committee to focus on the technical program. Kudos to these invisible souls, particularly Ms. Kathleen Owens and Ms. Eileen Shields (Fig. 2).

Fig. 2. SORMA XV attendees exchanging ideas during one of the featured poster sessions.

The Technical Program spanned three fully-packed days, and consisted of 3 plenary sessions, 21 oral sessions, and 4 poster sessions. The plenary talks were particularly noteworthy: Dr. John Palms, a nuclear physicist and former President of the University of South Carolina, reflected on a history of more than half century of developments in nuclear technology. Professor Fred Becchetti followed with an enlightened talk on the history of the bubble chamber, and the role of its successors in modern radiation measurements. The plenaries finished with a talk by Prof. Sung Park showing the progress and challenges in proton beam therapy. These plenary talks set the backdrop for the ensuing technical sessions that revealed innovations in the critical technology areas, including semiconductors, scintillators, gas-filled detectors, ultra-high resolution devices, electronics, and the applications that exploit them. To see the full spectrum of our field was stunning, and we hope that this volume captures some of the scientific excitement that was present during these days (Fig. 3).

This volume is technically rich and highlights a small subset of the work presented during the symposium. From the 470 abstracts submitted to the meeting, the Technical Committee selected only 110 papers for publication in this Special Issue, i.e., less than 25%. In some sense, this volume should probably be called “selected works from SORMA XV”, rather than the meeting proceedings. A few words are needed to explain the change.

Many archival journals have stopped publishing conference proceedings because of the negative impact on their primary figure-of-quality, the impact factor. To avoid the many small papers that generate few citations, SORMA agreed to publish only a limited selection of conference papers, encouraging those articles that would be longer, richer in technical content, thoroughly referenced, and more substantive. These papers are typically generated by the senior and established researchers in their fields, and so we opted to only invite the fully-registered authors, i.e., senior researchers, to contribute articles. We encouraged student contributions to be assimilated by their accompanying faculty advisor into a single, more comprehensive article representing the accomplishments of their research group.