Preface

Calorimetric particle detection with scintillation counters started in nuclear physics after World War II, and in the following seventy years calorimeters have become essential detectors in particle physics experiments providing measurements of the energy and position of particles and jets, energy flow information, particle identification, and fast trigger information used in real-time event selection. The first CALOR conference was held at Fermilab in 1990 and this series of conferences has become the main meeting to exchange research findings in all areas of calorimetry, including recent results from large running calorimeter systems, beam test results, ideas for the design of new particle physics experiments, underground experiments, experiments in space, and so on.

The XVIIth International Conference on Calorimetry in Particle Physics, CALOR 2016, was held in Daegu, South Korea from 15-20 May, 2016. This conference supported presentations and profound discussions on calorimeters at the Large Hadron Collider, experience with current calorimetric systems, calorimeters for future accelerator experiments such as the High Luminosity LHC, including discussion of the challenges for future calorimeters, and new concepts in calorimetry.

On May 16, 2016, CALOR2016 opened with four interesting invited talks on new physics searches at CMS and ATLAS, on dark matter searches, on neutrinoless double beta decay experiments, and on the history of calorimetry over the last seventy years. There was good harmony that, in the most recent physics results, calorimeters played important roles in accelerator and non-accelerator experiments and in the summary of the history of calorimetry. During the afternoon of the first day, the calorimeters at the Large Hadron Collider were discussed, mainly CMS and ATLAS experimenters presented talks on calibration, monitoring, trigger, energy measurement, and the performance of their calorimeter systems, displaying the role of calorimeters in important new physics searches.

The second day brought interesting studies performed in various experi-
ments not at the LHC, for example, in the morning session, experience with the current calorimeter systems for NA62, SND, CMD-3 at the VEPP-2000 collider, ISS-CREAM, AMoRE, and CaloCube were discussed. It was a good opportunity to witness calorimeters from deep underground up to calorimeters in experiments in space. In the afternoon, the conference hall was full of enthusiasm for calorimeter studies for future accelerator physics experiments. These studies involved much effort in worldwide particle physics communities on calorimeters at sPHENIX, a future electron-ion collider, CEPC, Mu2e, Belle II, etc.

The main topic of the third day was the upgrades of the ATLAS and CMS calorimeters soon to be exposed to a High Luminosity LHC. The afternoon session was reserved for an excursion to Gyeongju, the capital of the Shilla Kingdom 1300 years ago. We visited Gyeongju with its well preserved ancient Korean heritage and its natural environment, and took time to feel the atmosphere of this historic site in Korea.

The morning of the fourth day was devoted to discussions of calorimeters for the High Luminosity LHC experiments, mainly the upgrade of the endcap calorimeter of CMS and the tile and liquid argon calorimeters of ATLAS. The rest of the fourth day detailed the endeavors to solve known calorimeter issues such as radiation-hardness, precise energy measurement, precision timing to mitigate pile-up effects, calibration for a calorimeter in a space station experiment, and so on.

The last day was devoted to new concepts in calorimetry, in particular new concepts for future lepton collider experiments which require excellent electromagnetic and hadronic performance. All time slots were filled with talks on the particle flow algorithm calorimeters.

The five days of CALOR 2016 were a precious time when we could discuss various studies of calorimeters and calorimetry in particle physics experiments. It was a great honor to host and organize CALOR 2016 where world calorimeter experts got together and shared their knowledge and experience. Most of all, I would like to express my gratitude to the members of International Advisory Committee who allowed Kyungpook National University to host CALOR 2016 on behalf of the local organizing committee. I should not forget to thank the session conveners who made the sessions go smoothly and drew meaningful discussions. I am also grateful to the institutions and industrial partners who provided generous support, namely Kyungpook National University, Center for High Energy Physics, Radiation Science Research Institute, NOTICE, TPS, and AutoTech Korea. I specially thank John Hauptman for reviewing the proceedings. Without the happy collaboration of the members of the local organizing committee
and DEXCO, CALOR 2016 would not have been successful. I would like to express my gratitude for their efforts to host this successful conference. I sincerely appreciate all speakers and participants who enriched CALOR 2016 with their precious talks, discussions and creativity. Calorimetry and calorimeters will become more and more important in future particle physics experiments to obtain better physics data and meaningful results. I am sure that the CALOR conference will prosper and be a main place to develop future world high energy physics experiments.

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on behalf of the Local Organizing Committee