

HSTD12 - Development and Application of Semiconductor Tracking Detectors

Proceedings of the 12th International "Hiroshima" Symposium on the Development and Application of Semiconductor Tracking Detectors (HSTD12)
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International Conference Center Hiroshima, Hiroshima, Japan

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TOPICS:
Simulations
Technologies
Pixel and Strip Sensors
Radiation Tolerant Materials
ASICs
Large Scale Applications
Applications in Biology, Astrophysics, Medicine, ...
New Ideas and Future Applications

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Editorial

The 12th International “Hiroshima” Symposium on the Development and Application of Semiconductor Tracking Detectors (HSTD12) was held on December 15 - 18, 2019, at the International Conference Center Hiroshima, Hiroshima, Japan. The **symposium’s primary goal** is to bring together experts in the design, processing, and applications **to discuss** experiences, lessons learned, and new ideas **in early development stages**. The series of “Hiroshima” symposia has been held traditionally in the Pacific Rim region since the first symposium in Hiroshima in 1993. **The symposia proceedings** have been published in Nuclear Instruments and Methods [1, 2, 4, 5, 6, 7, 8, 9, 10, 11].

To the 12th symposium, a total number of 163 participants were registered with 143 contributions, among which 55 were assigned to oral presentations and 88 to posters. The topics of the contributions covered the field of semiconductor detectors and related areas, from technologies and simulations (10 and 2 contributions, respectively), pixel sensors for tracking and imaging (24 and 14), strip sensors (10), radiation damage and radiation tolerant materials (20 total), ASICs (20), large scale application in particle physics experiments (14), applications in astrophysics, biology, medicine, etc. (12 total), and new ideas and future applications (14 total). Following the tradition, oral sessions were held as plenaries only, while posters sessions were scheduled throughout the entire symposium for presentation and discussion, with coffee, tea, and cookies, during the coffee/tea/lunch breaks.

In past symposia, we **witnessed** the development of silicon-based tracking devices, shown in Fig. 1. The first generation of this evolution were strip sensors, followed by pixel sensors as the second generation. In this symposium, we have seen the birth of silicon-based fast timing detectors in large-scale **applications for the ATLAS and CMS experiments that** will be operational in the mid-2020’s.

The social programme of the symposium included:

- **A welcome reception in the Conference Center in the evening of Saturday, December 14th.**
- **An excursion to Miyajima island to visit the world-heritage Itsukushima shrine and the sacred mountain “Misen” during a half-day break in the afternoon of Monday, December 16th.**
- **The symposium dinner in the evening of December 17th at Hiroshima-city Bunka Koryu Kaikan.**

During the dinner, the participants enjoyed the “Kagura” (dance in dedication to the gods) performance by the dancing team “Saniwa Kagura-Dan”, provided by the Hiroshima Convention & Visitors Bureau. The group performed “Yamata no Orochi” - the story of a god who saved the life of an old couple’s daughter **who was offered in sacrifice** to a **giant**, eight-headed snake, embodied by three snakes in the dance. **The god charmed the serpent** to sleep with “sake” and then defeated **it**.

The symposium was supported by the Hiroshima Convention & Visitors Bureau, through Ms. A. Sawada of the MICE promotion department, which partially covered the fee for the Conference Center, organized a welcome message from the mayor of Hiroshima City, and the entertainment at the symposium dinner. The symposium was made possible by the excellent contributions of the local organizers, Profs. H. Takahashi and T. Mizuno of Hiroshima University, who not only managed and executed the symposium but also complemented a guest editor, Y. Fukazawa.

Among the 143 contributions, 109 papers were included for publication in these proceedings. Like previous issues, the papers were peer-reviewed with the help of many anonymous reviewers in the field **and** a special guest editor, D. Bortoletto, in case of a conflict of interest of the managing guest editor, to whom the organizers wish to extend their appreciation. We also appreciate the support of the publisher’s editorial team: V. Letizia, L. Li, S. Vikram, and others.

The next Symposium will be held in Vancouver, Canada, in 2022¹.

Guest Editors

¹Due to the pandemic of the new corona virus COVID-19, the 13th symposium is postponed by one year, from 2021 to 2022.

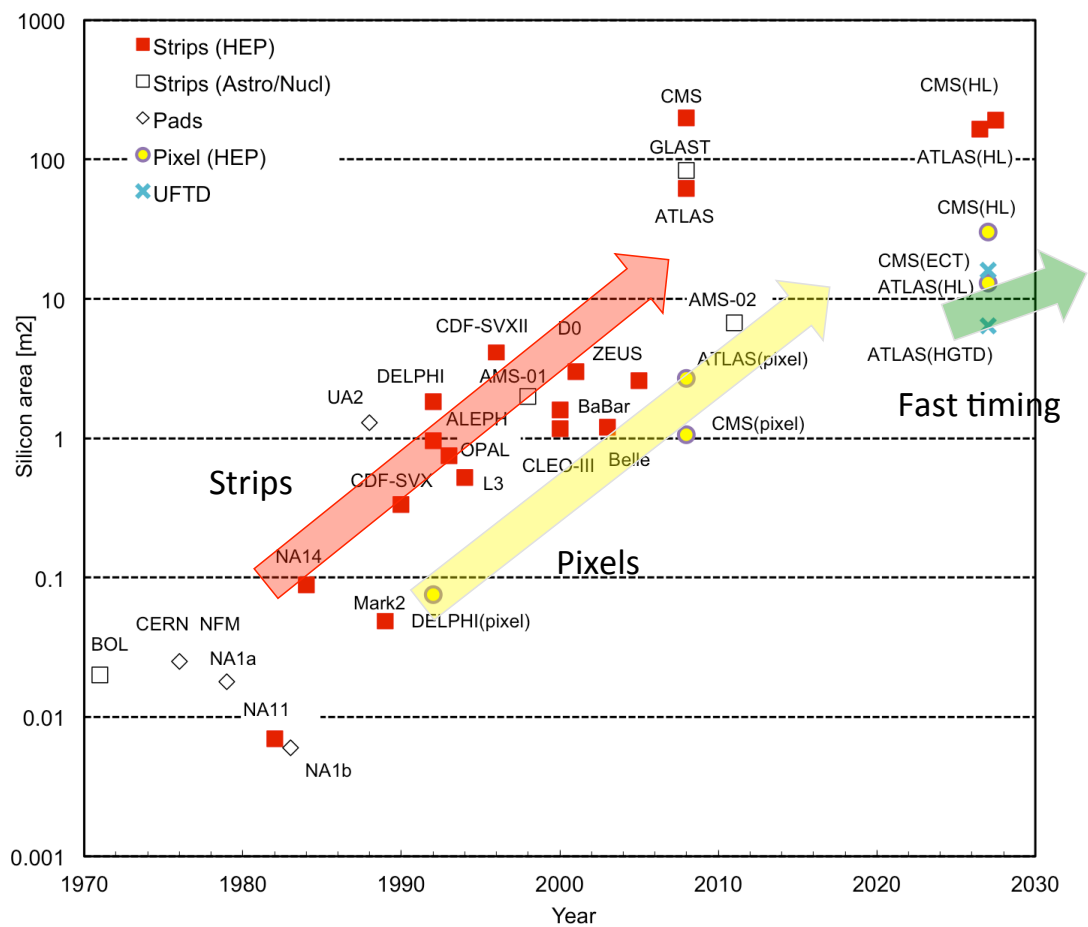


Fig. 1: Evolution of the area of silicon-based detectors. The first wave were strip sensors, followed by a second wave of pixel sensors. A new generation of fast timing detectors with large-scale applications is being developed.

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Symposium Photos



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on the steps of “the Conference Center relief”



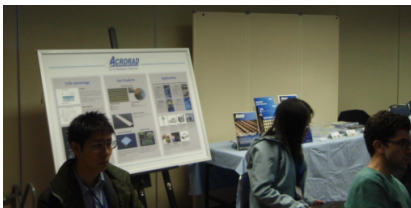
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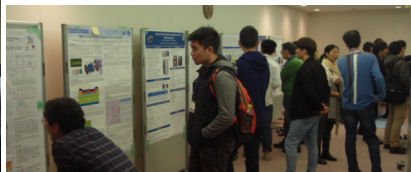
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