



## **29th International Conference on Defects in Semiconductors (ICDS-29) in Matsue, Japan**

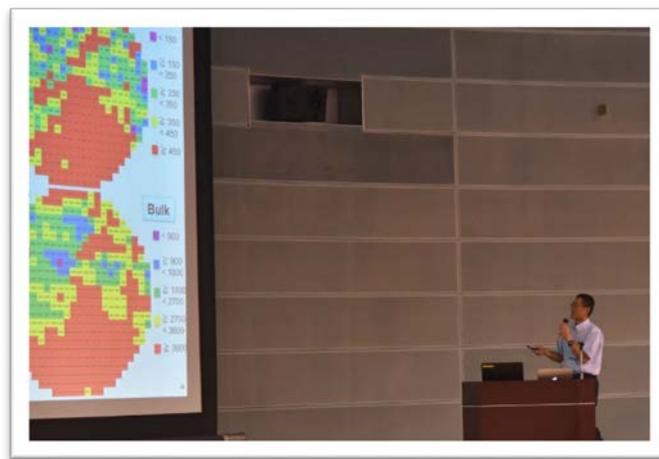
31 July – 4 August 2017

Reported by Katsuhiko Inaba, Rigaku X-ray Research Laboratory, Rigaku Corporation

I participated in the 29th International Conference on Defects in Semiconductors ([ICDS-29](#)) 2017, which was held from July 31 – Aug. 4, 2017 at Kunibiki Messe, Matsue, Shimane prefecture in Japan. Here is a brief report about this conference.

Traditionally, ICDS is held every two years in various cities around the world. It is well known as one of the most influential international conferences to focus on research into the fundamental properties and applications of defects in semiconductor materials. The previous conference was held in Espoo, Finland in 2015.

This year's ICDS 2017 had 279 participants from 32 countries. The scope of this conference covered a wide range of defect physics and technologies, such as the physics of defects in semiconductors like Silicon IV-IV, III-V (including nitrides) or II-VI (including functional oxides) compound semiconductors, defects in organic semiconductors, defects controlling device performance, advances in defect computational methods, etc.

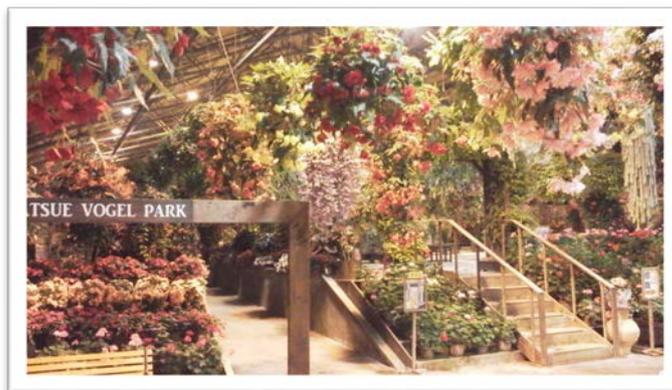


**Presentation by Dr. Omote**

From Rigaku, Dr. Omote, the director of the X-ray Research Laboratory, and I participated in this conference. Dr. Omote presented a lecture on the latest X-ray topography technology entitled: “A Laboratory X-Ray Topography Instrument for Investigating Defects in Single Crystals”, introducing Rigaku’s latest X-ray topography apparatus, “XRTmicron” and the newly-developed automated dislocation evaluation software for X-ray topography images. The sophisticated technologies and new concepts in his presentation were so impressive to the audience that questions and discussions continued long after his presentation.

I made a poster presentation titled: “3-dimensional dislocation structure analysis of Sapphire substrate under GaN epitaxial film using newly developed X-ray Topography Imaging system”, where the three-dimensional dislocation configuration in a sapphire substrate body under a thick GaN epitaxial film was analyzed. A demonstration using output from a 3D printer for the dislocation configuration was of greatly interest to visitors to my poster presentation.

An excursion was scheduled for the third day of the conference, to visit a famous historical site, Izumo Taisha, which is known as home to Susanoo's descendent who established ancient Japan.



***Banquet site, Matsue Vogel Park***

After the excursion, attendees moved to the banquet site, Matsue Vogel Park. The organizing committee announced that the Corbett Prize had been awarded to two young researchers, Liwen Sang, independent scientist at NIMS, Japan (PhD in 2010) for work entitled: "Strain and dislocations in the InGaN-based intermediate-band solar cells", and Elena Pascal, PhD student at University of Strathclyde for work entitled: "Characterization of threading dislocations in nitrides by modeling contrast profiles observed in electron channeling contrast images". This prize is named in memory of James W. Corbett (1994), one of the pioneers in the field of defects in semiconductors, who always helped and encouraged young researchers.



***Rigaku booth with Mr. Mitani***

Extensive discussions took place throughout the conference at the oral sessions and the poster presentations. At the poster presentation site, many researchers visited the exhibition booth of Rigaku.

The 30th ICDS conference will be held from July 21 - 26, 2019, at the Motif Hotel in downtown Seattle, Washington, USA, (Conference Chair: Prof. Matthew D. McCluskey, Washington State University, USA.)