

Yamagata University

Case Study



Yamagata University provides users with a glimpse into the future

As a leading nation in the fields of science and technological development, Japan continually amazes the world with its acute insights in offering innovative solutions in technology. Ranging from highly advanced robotics, electronic house doors and state-of-the-art bathroom designs, Japan is without a doubt a key player in the world of technological innovation. It continues this trend by taking a step further and plunging into the possibilities that the future could potentially bring through advanced simulation and virtual reality (VR).

The five-year-old Research Center for Organic Electronics (ROEL) at Yamagata University serves to promote fundamental and applied research in organic electronics, ranging from

materials, processes, devices and application technologies. Launched in 2013, the Innovation Center for Organic Electronics (INOEL) bears the role of bridging research and development efforts between the university and industry to facilitate commercialization. Two new technology centers had opened, namely the Research Center for Green Materials and Advanced Processing (GMAP) and the Frontier Center for Organic Materials (FROM). In cooperation, these four renowned research centers strive to form a world class hub to provide research and developments that benefit society.

ROEL is known both domestically and abroad as Japan's top institute for organic electronics research. Plans are underway for the implementation of a

Customer:
Yamagata University

Location:
Yonezawa, Japan

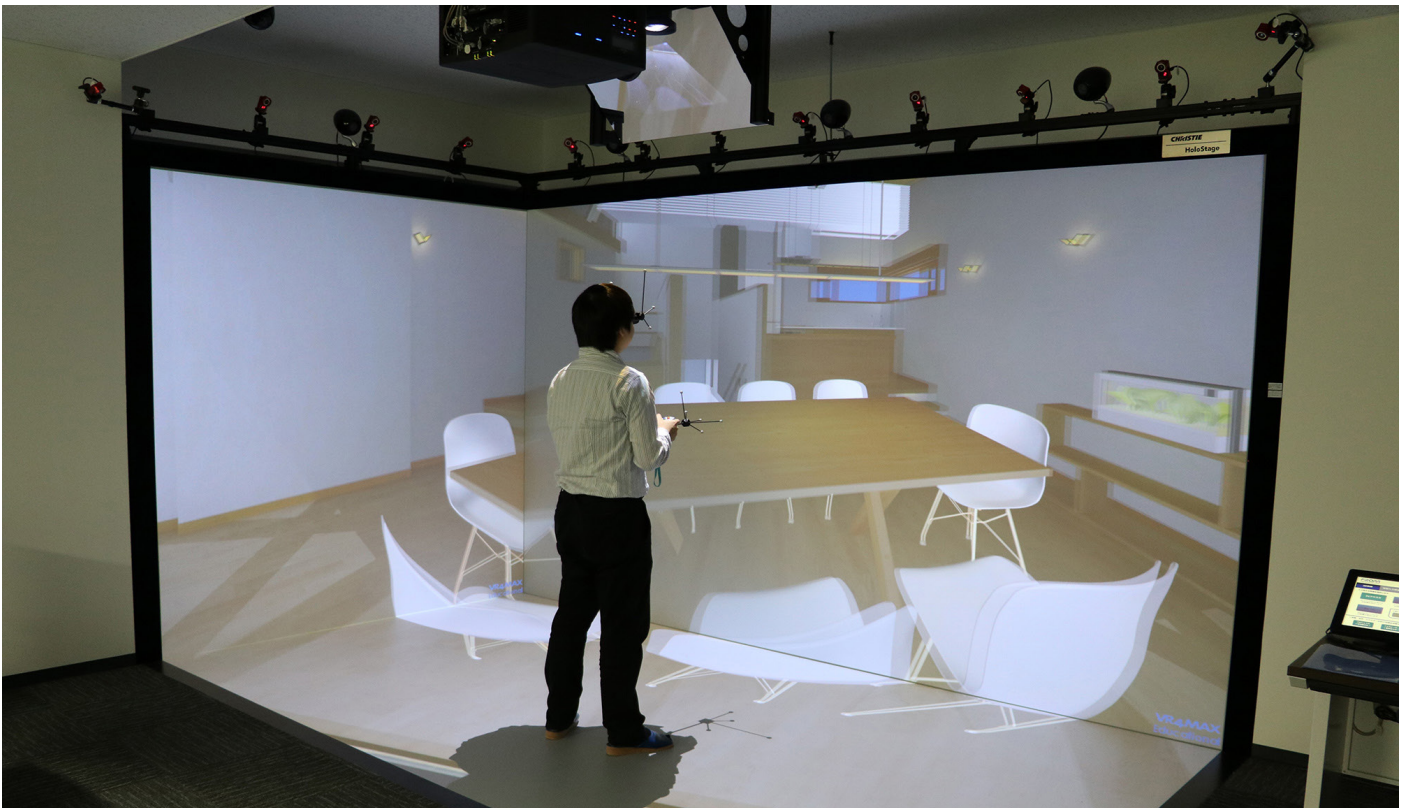
Industry/Market:
• Higher education

Requirements:
• High resolution and stereoscopic projection
• High performance, real-time 3D

Summary:
Using a Christie HoloStage and Christie Mirage M Series projectors, Yamagata University has created a simulation that provides a hands-on experience of what it would be like living in a future with organic electronics.

Products:
• Christie HoloStage (1)
• Christie Mirage HD6K-M (3)
• Christie HD10K-M (1)
• Christie GS Series (1)
• Christie CAVE (1)

Results:
The real-time 3D experience and stereoscopic projection created by Christie offers Yamagata University a high level of visualization and simulation by providing a futuristic experience for users.



▲ The Christie HoloStage produces lifelike 3D visuals at the Research Center for Organic Electronics at Yamagata University.



“smart future house” at INOEL, to fully utilize organic electronics’ technologies, such as organic electronics lighting. The smart future house intends to offer a hands on experience to users, immersing them in a future with organic electronics.

Junji Kido, Research Professor at FROM, explains that before designing what would become the simulation system, he needed to demo a variety of options before choosing a technology provider.

“We studied a variety of equipment to ascertain the one which would provide us with the best projection solutions in a visually spectacular manner, to showcase our rendition of the future. Upon being introduced to the Christie HoloStage®, we were convinced that the realistic and life-sized virtual environment that it offered was ideal for creating a state-of-the-art virtual reality experience,” said Kido.

As the smart future house embodies the living space of a future using organic electronics, it was imperative to portray what future organic electronics would appear like in relation to factors concerning simulation, such as lighting. The Christie HoloStage provides users with a glimpse into such a futuristic world by creating a highly immersive VR experience. Deploying a three-sided screen, Christie’s custom made CAVE system is used to accompany the Christie HoloStage to enable a simultaneous and highly versatile VR

review functions. This is to facilitate a high performance video projection system using VR application.

The Christie HoloStage projects the computer generated images onto each screen by stereoscopic display, creating a virtual 3D space. Depending on the user’s perspective from the tracking sensor of the 3D glasses and controller, they are able to view the projection from various fields, including a bird’s eye view. Three Christie Mirage HD6K-M projectors are also used in FROM to offer a highly immersive experience through the CAVE system. A wide viewing angle is available from the front of the screen and the surface of the floor, along with a high resolution wide screen distinctive from other VR systems, offering the finest in VR quality.

Yamagata University’s conference room is equipped with a massive 300” screen, where the Christie HD10K-M projector is used to provide brightness levels of



▲ The Christie HD10K-M projector installed at Yamagata University's conference room.

10,000 lumens. The Future Hall of the university also deploys a 140" screen, accompanied by a Christie GS Series projector. High brightness projectors providing various field views are extensively used in universities where lecture halls and large conference rooms are situated, hosting a wide array of events such as lectures, academic conferences and symposiums. The university is considering opening access of these venues to local residents, to enable them to utilize the spaces and wide screens available.

In addition to the use of its VR system to create an immersive user experience, FROM is considering to offer its premises to local companies, to enable them to conduct their own research and development. As VR use is a rare novelty in Yamagata prefecture, it would also help to enliven the region by leveraging the proliferation of VR to expand to a

wider audience. This would ensure the continued and dynamic evolution of organic electronics and the smart future house, as the utilization of simulation and VR technology are envisioned to grow rapidly.

"As Christie employs state of the art solutions in digital projection technology, we are well equipped to install our projectors at Yamagata University's various research centers, to help provide a realistic and visually spectacular virtual reality showcase. This exemplifies our stand as a leading company that constantly engages in technological innovations, paving our way towards the future," said Mamoru Hanzawa, Director of Sales, Visualization, Simulation & Solutions, Christie Asia Pacific.

Harry Ikeda, Deputy General Manager, Christie Japan, added that the Company is excited to be part of a



▲ The Christie Mirage HD6K-M projectors are used to offer a highly immersive experience through the CAVE system.

highly advanced futuristic technological display. "Christie is proud to help educate academia and the wider public on the intricacies and uses of organic electronics. Employing simulation techniques and virtual reality systems is indeed a highly engaging manner to mesmerize users by transporting them into the future and offering a glimpse on how different our lives might be like with advances in organic electronics," he said.

As Japan continues to partake in creative technological innovations, the rest of the world peers closely to learn what other unique inventions might surface from the nation. As the thirst for learning and discovery is essential to facilitate the rise of technological advancements, Japan is indeed a good model to emulate. May the Land of the Rising Sun soar higher in the sky as the global community follows its trail towards new beginnings in the near future.

Contact Christie

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