

## **Chijo Onishi (Head Priest, Ganjoji Temple, Japan)**

Chijo Onishi was graduated from Koyasan University Department of Literature, Esoteric Buddhist. Currently, he is head priest, Ganjoji Temple, Shingon Sect Omuro School Financial Affairs Chief, Director of Omura School of Flower Arrangement, Director & General Manager of Social Welfare Organization Hakujukai.

### **Lecture: Conservation of Buddhist religion Cultural Heritage in Japan using Advanced Imaging Technology**

In December 1994 Ninna-ji was inscribed as a UNESCO World heritage Site as one of the Historic Monuments of Ancient Kyoto. Today, Ninna-ji houses the National Treasure Kondo (金堂); Buddhist sculptures and painting; more than 30,000 pieces of documents from the old days; and some newly added religious and artistic objects. These very important cultural assets are kept in different temple buildings and are exposed to changing humidity and temperature, which cause serious degradation of the assets. Ninna-ji started extensive activities to protect these assets through collaboration and site observation of the museum storage rooms, humidity and temperature control of the storage houses, removing of bugs and fungi from the cultural assets. These activities are still on-going. Ninna-ji is also engaged in restoration and conservation projects. For the next five years, one of the main temple buildings (Kannon-do) would undergo repairs and restoration. As part of Ninna-ji's effort to preserve and conserve this heritage, a large-scale digitization of the objects inside the temple was performed prior to the repairs. The objects digitized include wall paintings, painted columns and statues of Buddha and other minor deities. The objects were scanned and digitized at high resolution. Due to the varied nature of size, shape and conditions of the objects, it was deemed necessary to design new imaging devices to suit requirements of the objects. Various imaging techniques were applied including high-resolution trichromatic scanning, multispectral scanning, image focus-stacking, near-infrared scanning and structured light profilometry. The size of the image raw data amounts to a few terabyte of information. Both the trichromatic and NIR scans were performed simultaneously which reduced the time for scanning significantly. The approximate total surface area of the walls scanned is about 100 m<sup>2</sup>. The painted statues and golden Buddha were scanned at various angle and focusing depth to capture 3D shape information. The amount of information and digital contents gathered from this project makes it one of the largest digitization project undertaken in recent years. We believe that it is the responsibility of Ninna-ji to preserve and transfer these cultural heritages to future generations. The original objects should not only be accessible to the public but must also be protected at the same time for future generations. One way to address these two contradicting issues is the use of Digital technology. This technology may be used for archiving and utilization of these assets; recording the color and conditions of the assets; having access to the objects through digital information without direct contact with the objects; and total administration of the objects. These open new possibilities on how cultural assets may be utilized. We are developing our own model for administration and utilization of cultural heritage assets by exploring the potentials of digital technology.

