

Achievements in Intellectual Property

The Japan Institute of Invention and Innovation awarded the Imperial Invention Prize to Toshiba in 2009. The highest prize in the first division of the National Commendation for Invention, the award was presented in recognition of Toshiba's many contributions to progress in science and technology and to industrial development. This year, Toshiba received further recognition with the award of the 21st Century Invention Prize, the highest prize in the second division of the National Commendation for Invention, for an excellent individual invention.

National Commendation for Invention, 2009

Imperial Invention Prize

High speed response overdrive method for low image-lag liquid crystal display televisions (Pat. No. 3167351)

This invention, the overdrive method, is a low image-lag driving method that boosts the response speed in liquid crystal display televisions (LCD TVs) by four times. This dramatic improvement compensates for the drastic degradation of gray-level responses found with the conventional driving method.

In the overdrive method, a novel image-lag mechanism applies voltage to the liquid crystal for a period corresponding to the according to change in picture (brightness), an approach that compensates for liquid crystal response deterioration.

The overdrive method is an essential technology not only for LCD TVs with a 60 Hz refresh rate, but also for next-generation LCD TVs that have double- and quadruple-speed refresh rates and that smoothly interpolate one or three duplicate images between 60 Hz images. It makes a major contribution to growing the market for low-power consumption, environmentally friendly LCD TVs.



REGZA™ LCD TV
incorporating high-speed
response overdrive method



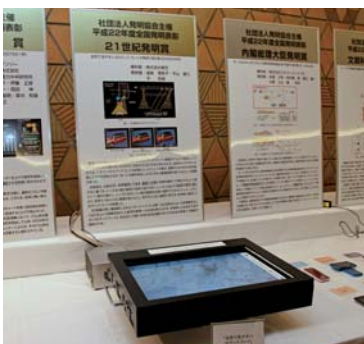
Mr. Norio Sasaki,
President of Toshiba,
with the winners of the
Imperial Invention Prize

National Commendation for Invention, 2010

21st Century Invention Prize

Natural and easily viewable 3D display (Pat. No. 3892808)

In coming years, the market for three-dimensional (3D) displays is expected to be worth hundreds of billions of dollars. A prerequisite for the emergence of such a market is a technological shift from conventional 3D displays, requiring special glasses, to new types of displays that incorporate Toshiba's invention, which, for the first time, realizes a display that delivers natural, easily viewed 3D images. This technology reproduces 3D images with the required depth information. It has the potential for wide application beyond entertainment, medical, educational, and industrial applications. Toshiba expects the 3D display to stimulate creativity and eventually contribute to the realization of a new generation of TVs offering excellent 3D image quality.



Natural, easily viewable 3D
display panel



Mr. Norio Sasaki,
President of Toshiba,
with winners of the 21st
Century Invention Prize