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Title : Large capacity power electronics technology for a sustainable society

Abstract: One of the most emerging global issues is the reducing of CO₂ for sustainability. The climate policies assign great roles to the renewables and the energy efficiency, to which the Power Electronics can contribute very much as a key technology. The talk introduces recent technology trend of industrial power electronics especially on the large capacity in the range of MW. Such technology is expected to contribute to further the promotion of renewables and energy efficiency.

In the talk, the industrial PV inverters are introduced to show the technology trend in the PV fields. The talk explains key technologies for realizing MW-range inverters with very high system efficiency. Then, the energy storage systems (ESSs), for large-scale power plants will be introduced. The ESSs are a key component for stabilizing the power grid by managing power and energy from renewables. The smart control systems are also introduced which integrates renewables, the ESSs and the load in the power grids.

Power electronics technology is applied to everything, it is expected to integrate with communication technology and create new value to society. The concept of "Power Electronics in Everything" will be introduced.