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Sojitz Corporation  
Sojitz Machinery Corporation  
Advanced Capacitor Technologies Inc.  
Sanki Co., Ltd.

## **Sojitz Machinery Begins Sales of Ceiling Crane Power Supply System Using ACT Lithium-Ion Capacitors**

**Power Consumption Slashed 30% by Using Recovered Energy**

Sojitz Machinery Corporation, a wholly-owned subsidiary of Sojitz Corporation, developed and launched a hybrid power supply system for ceiling cranes with Advanced Capacitor Technologies Inc. (ACT), a manufacturer and seller of lithium-ion capacitors, and Sanki Co., Ltd., a crane manufacturer.



A hybrid crane equipped with a lithium-ion capacitor

The new system is a hybrid system that combines a storage battery with an alternating current power supply. The energy generated when the ceiling crane is lowered during use in a factory or other site is recovered\* and stored in an ACT storage module for use to operate and move the crane. By recovering and reusing energy that in the past was released in the air as heat, the power consumed by the crane can be reduced by about 30%, cutting costs through lower electricity consumption and contributing to lower carbon dioxide emissions from energy savings. The environmental contributions of this product were recognized, and the development project received a

subsidy from Shimane Prefecture.

Sojitz invested in ACT in 2009 and has provided support including the assignment of personnel through Sojitz Machinery. Sojitz Machinery, which will act as the agent for sales of this product, has positioned the energy storage and supply field as a major growth field for the future and is accelerating its efforts in the environmental and energy sectors.

Sanki focused on recovering the energy generated when a crane is lowered as a means of reducing energy consumption by ceiling cranes and developed prototypes to improve the module storage capacity, usable life, and quality.

The development costs for this system were approximately 10 million yen for a 15-ton crane. Sojitz Machinery has set targets of the selling five units in 2012, 15 units in 2013, and 30 units in 2014.

Lithium-ion capacitors are storage devices that combine the strengths of secondary batteries such as lithium-ion and lead batteries and electric double-layer capacitors, which can be charged very rapidly. They have long cycle lives and excellent charge and discharge efficiency and can be charged and discharged in short periods. Demand for lithium-ion capacitors is expected to grow in environmental and energy conservation sectors including solar power and energy recovery.

\* Recovered energy is energy obtained when thermal energy generated when the brakes are applied is converted to electrical energy and reused as motive force.



The Premlis® lithium-ion capacitor manufactured by ACT

■ Reference information

Product features

1. Japan's first practical hybrid power supply system for ceiling cranes

2. An environmentally-friendly, energy-saving product

- Cuts ceiling crane power consumption by approximately 30% (actual energy-saving effects will vary depending on the crane use conditions)
- Longer life compared to earlier secondary batteries (expected life is more than 10 years)
- Compared to earlier electrical double-layer capacitors, storage capacity is large and self discharge is minimal
- An energy storage device with low environmental impact on a carbon basis

3. Can be used with new and existing cranes

Not only can this product be used with new crane installations, it is also possible to convert the control method of existing cranes to an inverter and create a hybrid crane. The modifications can be made at the same time, saving customer time. Can also be installed on cranes that use wound wire motors (new JEM motors) and hoist cranes.

4. Simple operation

Operating conditions including power consumption and capacitor charge capacity can be confirmed using a large touch panel.

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