



Japan Battery Regeneration, Inc.

Applying Lead-acid Battery Regeneration Technology to ICT



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Why we joined ITU-AJ

Our company's technology was well understood and welcomed by the ITU-AJ, and we were given a chance to exhibit in Japan Pavilion at ITU TELECOM WORLD 2015 held in Budapest last year. Indeed, we were honored to receive the Entrepreneurship Award at the event. We came to appreciate the importance of ITC activities, and realized that our technology for prolonging the life of batteries and regenerating old abandoned lead-acid batteries have a critically important role to play in ICT and electrification of rural areas of third world countries. We joined ITU-AJ with the idea of expanding our activities worldwide, contributing to the reduction of industry wastes, and protecting the global environment.

Introduction of our company and product

We produce and market an ITE activator for lead-acid batteries called *Super-K* (patented in the U.S., Japan, and China), and we offer proprietary technology for lengthening battery life and regenerating old-abandoned lead-acid batteries using *Super-K*. We are committed to providing the most cost-effective way of regenerating old lead-acid batteries.

Super-K was developed by Dr. Akiya Kozawa (ex-fellow at Union Carbide and former professor at Tohoku University) and his research group at Yamagata University and other Japanese universities. *Super-K* is supported by a great deal of chemistry-related research conducted over many years explaining how and why *Super-K* works, and a vast amount of actual test data compiled by research labs and businesses.

The lead-acid battery was the first type of secondary battery developed, and is the most widely used battery in the world with some 70% share of the secondary battery market. Lead-acid batteries are used to start auto engines, are employed in electric forklifts and golf carts, are used in Uninterruptible Power-supply System (UPS) battery backup systems, and countless other applications. Using *Super-K* and our battery regeneration technology, the life of a typical battery can be dramatically extended 1.5 to 2 times for a remarkable reduction of battery waste and battery cost.

Brief explanation of how the *Super-K* activator works:

By adding *Super-K* to the battery fluid (diluted sulfuric acid), it effectively inhibits hydrogen evolution at the negative electrode, thus enabling the battery to recharge more deeply, and reduces sulfation in the negative electrode. Sulfation is the number one

cause of lead-acid battery deterioration, and *Super-K* effectively dissolves sulfation. *Super-K* can be used on new batteries or batteries currently in use to extend the life of the battery, or on old abandoned batteries to regenerate or recycle the battery.

Recent activities and topics

Testifying to the effectiveness of *Super-K*, a leading Tokyo transport company has been using *Super-K* for over ten years and has not had to purchase replacement batteries for the entire decade-long period. *Super-K* is also used by people who exploit solar power without relying on commercial electricity by employing their own lead acid battery based power generation systems. Finally, a subsidiary of Japan's largest logistics company has launched a battery regeneration service for electric forklift batteries using *Super-K* and our technology.

In overseas markets, Thai golf courses seized upon *Super-K* for its ability to dramatically extend battery life and regenerate old batteries. This slashed costs to buy replacement batteries while at the same time reducing industrial waste.

In a more recent initiative, we are committed to set up a battery regeneration center in Nepal as part of an APT-J3 project. Small-scale low-cost power generation stations are critically important for people living in rural or developing economies to leverage and exploit the power of ICT. Yet the cost of batteries can be a major hurdle in building such power generation systems. Low-cost good quality lead-acid batteries are indispensable, and we are in the perfect position to provide such batteries while regenerating old batteries. We have much to contribute to the green sustainable society through clean energy and responsible environmental stewardship.



Lead-acid batteries undergoing regeneration charging