Lengthen the life of lead-acid batteries & Regenerate old abandoned batteries With “Super-K” and our technology

Lead-acid battery is indispensable for building infrastructure for information technology and telecommunications in non-electrified regions. Introducing our efforts to minimize waste and reduce cost of lead-acid battery.

Hiroshi Tominaga
General Manager

Japan Battery Regeneration,Inc.

Extend Battery Life with Super-K

Cost Reduction & Green Environment

P type Super-K activator
for vehicle batteries

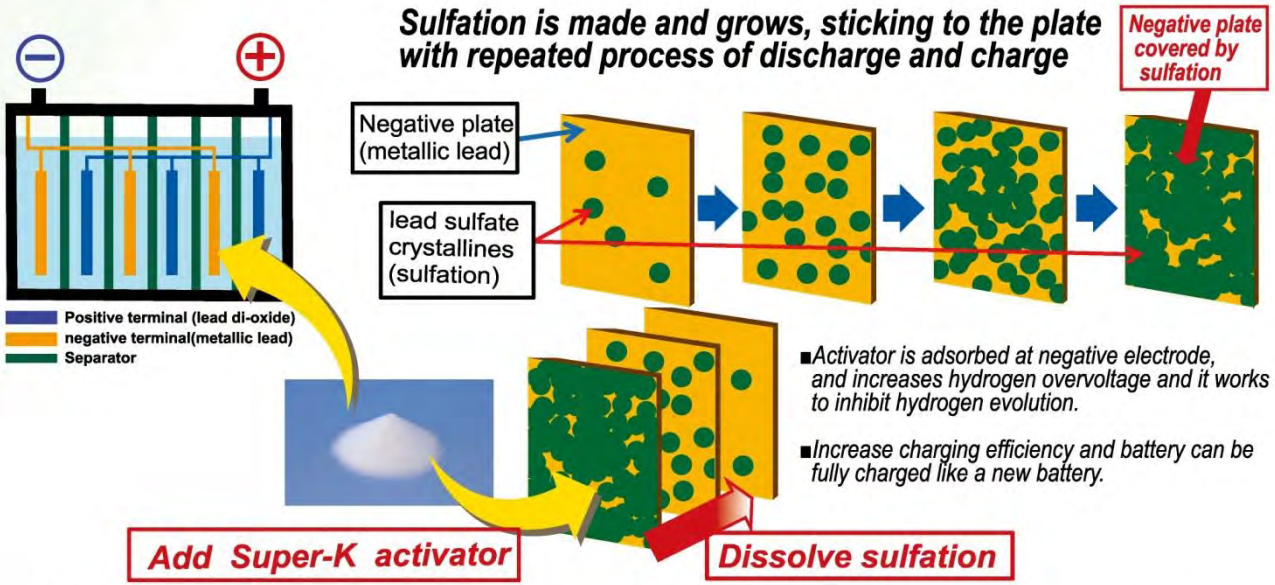
A type Super-K activator
for tubular type & deep cycle batteries

- Super-K Patented Battery additive for lead-acid batteries
- Developed by Dr. Akiya Kozawa and ITE researcher group
- World's most economical way of battery regeneration and re-use of old abandoned batteries
- Extend battery life up to 10 years max. when Super-K is used in batteries deteriorated by sulfation.

- Lead-acid Battery : Useful for electric power storage for building infrastructure for ICT & electrification in non-electrified regions in developing countries.
- Making best use of limited natural resources and reducing cost for battery replacements.

How Super-K activator works

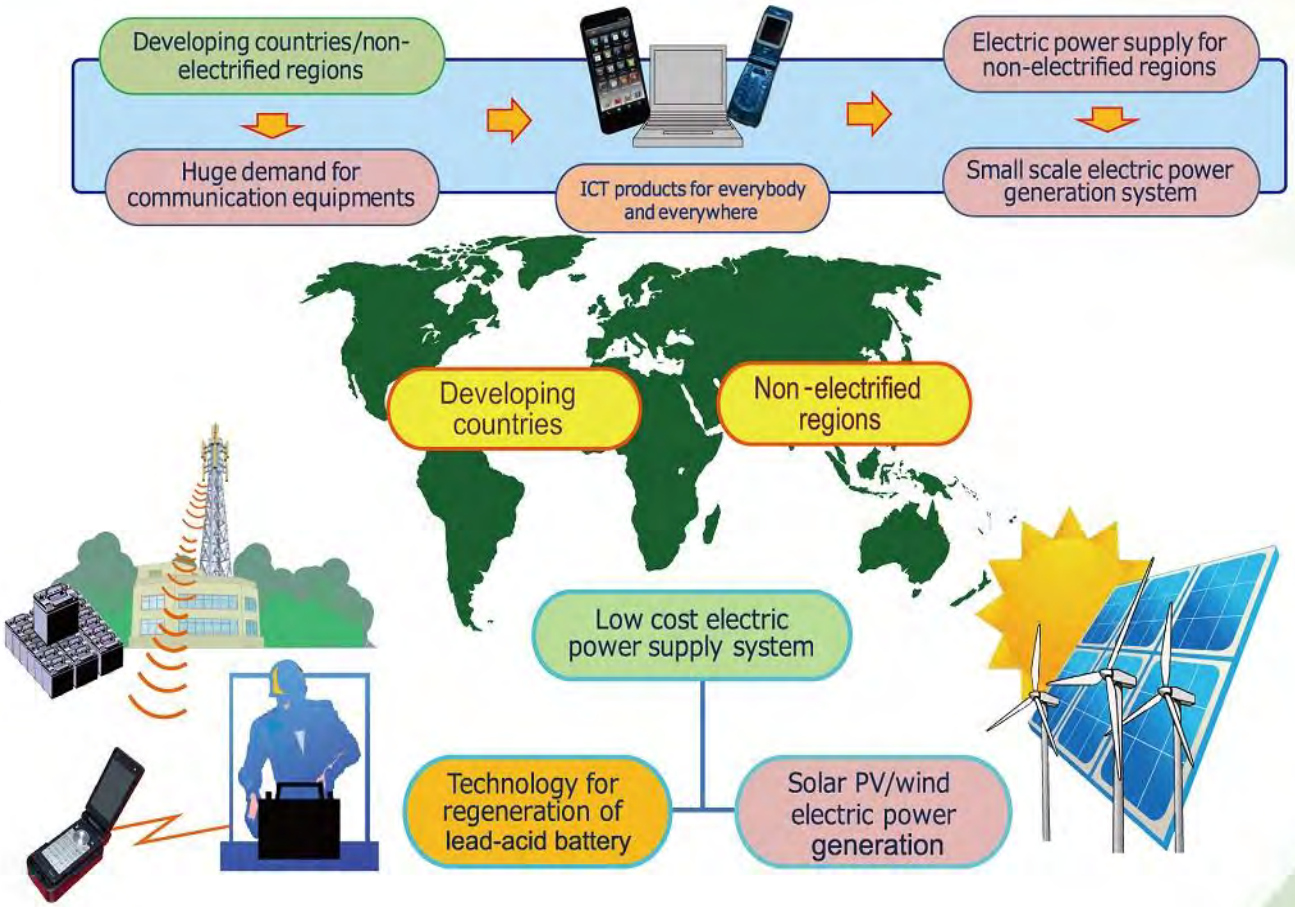
(1) Lead-acid Battery deteriorated by Sulfation



(2) Super-K activator dissolves Sulfation and Battery becomes like New !

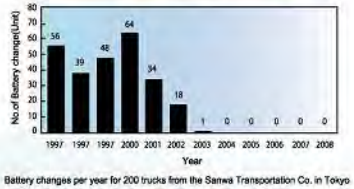
Battery life can be doubled with Super-K. Effective for one or two years.

Technology for extending battery life for ICT infrastructure



Long-term Practical Truck Tests

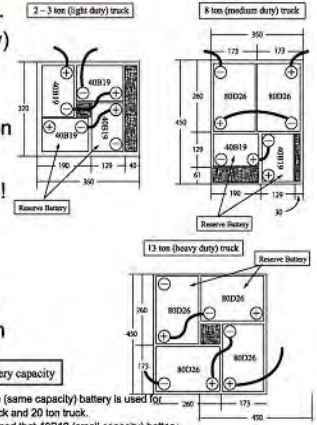
- Tested Super-K ITE organic activator in 200 working truck batteries used by the Sanwa Transportation Corp. located in Tokyo, Japan.
- Number of purchased replacement batteries by year.
  (See graph below) (for 200 trucks where Super-K was put in at the Sanwa Transportation)
- After start putting in Super-K for 200 trucks once every year, they needed to buy only one new battery from 3rd year, and needed to buy none from 4th year .
- Before using Super-K, the average battery replacement was 52.
- This transportation company does not need to buy new batteries at all for more than 10 years



Battery changes per year for 200 trucks from the Sanwa Transportation Co. in Tokyo

Half capacity battery + Super-K

- Dr. Kozawa's idea to use half capacity battery (= half cost battery) for trucks using Super-K
- Super-K activator was added in 50% smaller capacity batteries on 20 trucks for five years:
- 5 Year test had excellent results ! It was not necessary to use any reserve batteries.
- The test confirmed that 50% smaller than originally equipped batteries can last for 5 years with our Super-K activator.



Battery capacity

(1) Same size (same capacity) battery is used for 13 ton truck and 20 ton truck.
(2) We confirmed that 40B19 (small capacity) battery can start engine of 13 ton and 20 ton trucks.
(3) Unit of dimensions: mm

Re-use of abandoned batteries for electric forklift

- Battery cell replacement + Super-K + regeneration charging with ITE designed charger
- Realized recovery of battery capacity to more than 90% of new battery
- Regenerated forklift batteries can be used again for forklift and also for Solar PV systems

Regeneration charging
Front: 48V 280Ah/5h battery
Back: 96V 390Ah/5h battery
ITE-designed Slidax Charger

Life with only Battery & Solar PV (Okayama, Japan)

Green Activist Mr. Ohtsuka and his family during 2004 - 2015

- Living with electric power generated by Solar PV and stored in lead-acid batteries only since 2004.
- Very rare in Japan where electricity supply is stable and fully covered throughout the country.
- Super-K is applied for lengthening the life of batteries for forklift.
- Super-K proved to be effective to lengthen battery life and helpful to delay sulfation of negative electrode of the batteries.
- The same effect of Super-K activator was confirmed at other places where he installed the same PV systems.

For the Future

- Battery cost and replacement battery cost for storing electric power are huge and heavy burden to the people
- Promote penetration of small scale power generation system by lowering the costs necessary for batteries

- Power generation utilizing renewable energy is our goal
- Huge growth is expected for Solar PV and wind power generation
- Large scale power generation systems require huge cost and time

Need to make inexpensive small scale power storage systems

【World's lowest cost solution for extending the life of lead-acid batteries and re-use of abandoned lead-acid batteries by regeneration charging with Super-K】By【ITE Technology for lead-acid batteries 】has big possibilities for use in various situations and will contribute to the utilization of renewable energy for power generation and power storage systems.

Challenges and opportunities for startups

1) Challenges/hurdles for new venture companies:
   a. No name, No brand value
   b. No credibility (established)
   c. No reputation, No recognition
      ** Lack of fund for advertising
      ** However good the technology or products are, people won’t believe in new things easily.

CSFs = Critical Success Factors

1) “FOCUS” After initial stage of Try-and-error, you must FOCUS.
And, narrow down and go deep.
Where is your target niche market ?
Find it out.
** Set up of business model

2) “PASSION” for your business and success

3) Work with a small group of Professionals
Each person in each different field
(Inventor: World’s top level researcher of batteries/additives
President: Passionate believer in our product/technology
Expert of International business
Expert of Intellectual Property, Patent applications)

4) “Flexibility” Adjust to the demand/market/people

5) “Idealism” Contribute to the world

6) “ITU Award”