

Make In India Entrepreneur



Techno-Commercial Report of Battery Rejuvenation.....

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Electro-Chemical Battery Enhancement Process (EBEP):

We **Make In India Entrepreneur (MiiEmart)** Franchise of **Energy And Fire Tech India Pvt. Ltd**, In Technical collaboration with **Battery Services International, L.L.C., USA** uses a very unique technology that brings great benefits to all sorts of lead acid batteries in the market.

Main Causes of Battery Failures:

- **Aging.**
- **Incorrect charging.**
- **Poor maintenance.**
- **Excess heat.**
- **Over Charging.**

Did you know **80% of Lead acid batteries die prematurely due to sulphation**, which we can treat and rejuvenate?

How EBEP Technology Works:

Our **EBEP Technology** allows the recovery of the lost potential of any lead acid battery of any brand, make, application, state-of-charge, level of sulphation, age, size, and price. Our technology for battery improvement can do this in a very quick, safe, and effective manner following scientific method and procedures regarding the maintenance, handling, recharging, and electro-chemistry of lead acid batteries.

Our Technology helps in:

- a. Restoration of any lead acid battery at the end of its useful life.**
- b. Recovery of almost full potential of batteries by de sulphation.**
- c. Routine maintenance to get optimum performance of batteries.**
- d. Prevention of the loss of back up time of any lead acid battery.**

If you have a battery Bank that is made up of individual **VRLA, AGM, Gel, or flooded batteries** then you can do a huge cost saving for your organization and be a valuable part in saving the environment by using our **Electro-Chemical Battery Enhancement Process (EBEP)** to increase the serviceable life of all your batteries. The objective of the EBEP process for your batteries is to sustain and prolong continuous performance, secure reliability, extend life span, and maximize return on investment. The EBEP rejuvenation process will enhance life (potential) to the so called dead batteries which are actually sulphated and will also Yield the following benefits:

- a. It will enhance the useful life of your batteries by Approx two year (warranty 12 months)**
- b. Guaranteed to cut expenditure in replacement batteries.**
- c. Will recover lost capacity or back up time.**
- d. Recover low internal resistance of each cell.**
- e. Reduces the amount of charge current required to keep them a full capacity.**
- f. Reduces the rate of water loss per cell.**
- g. Restores plate potentials and voltage.**
- h. Protects grid plate and paste from passivation due to hard sulphation & corrosion.**
- I. Recovers the soft porosity of sulphated plates.**
- j. Reduces the risk of thermal runaway.**
- k. Helps the environment by extending battery life.**

Procedure:-

Our power recovery technology for secondary batteries is based on an **ELECTRO-CHEMICAL** procedure that we call the **Genesis Battery Power Recovery Process**.

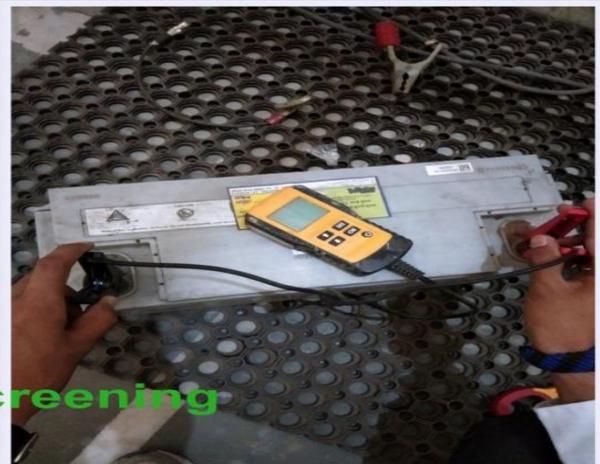
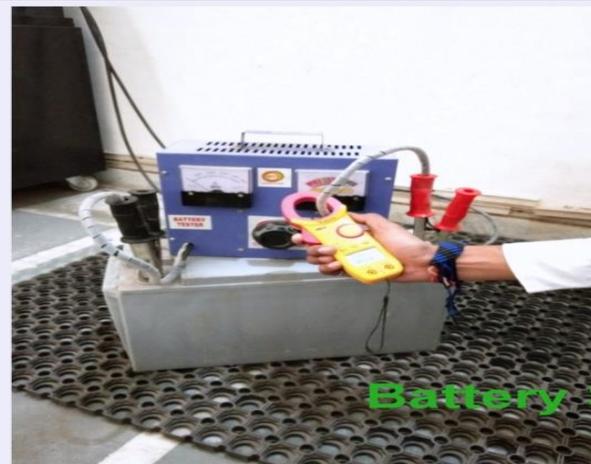
This methodology was designed to follow strict scientific principles of electrochemistry of lead acid batteries. The Over-all purpose of the methodology is to recover the lost potentials of any lead acid battery in any state of health, including those considered to be scrap , or spent, and out of service in any state of charge. Batteries can be flooded or sealed, AGM, GEL and VRLA of any brand, size, voltage, amperage and any manufacturing age. The main characteristic required for success is that the batteries should be mechanically intact inside.

We use **EBEP (Electrochemical battery enhancement process)** technology, power plus additive / XTR additive which are imported from **BSI (Battery Services International) USA** , to sustain healthy, soft , moisture and porous lead sulphate ($PbSO_4$) particles. X-charger rejuvenates these batteries over a process time of 12-18 hours by charging them with patented wave-form current.



This Genesis method includes the following steps:-

Screening:-This step is for identifying batteries not good for reconditioning covers visual checkup and health checkup of batteries.

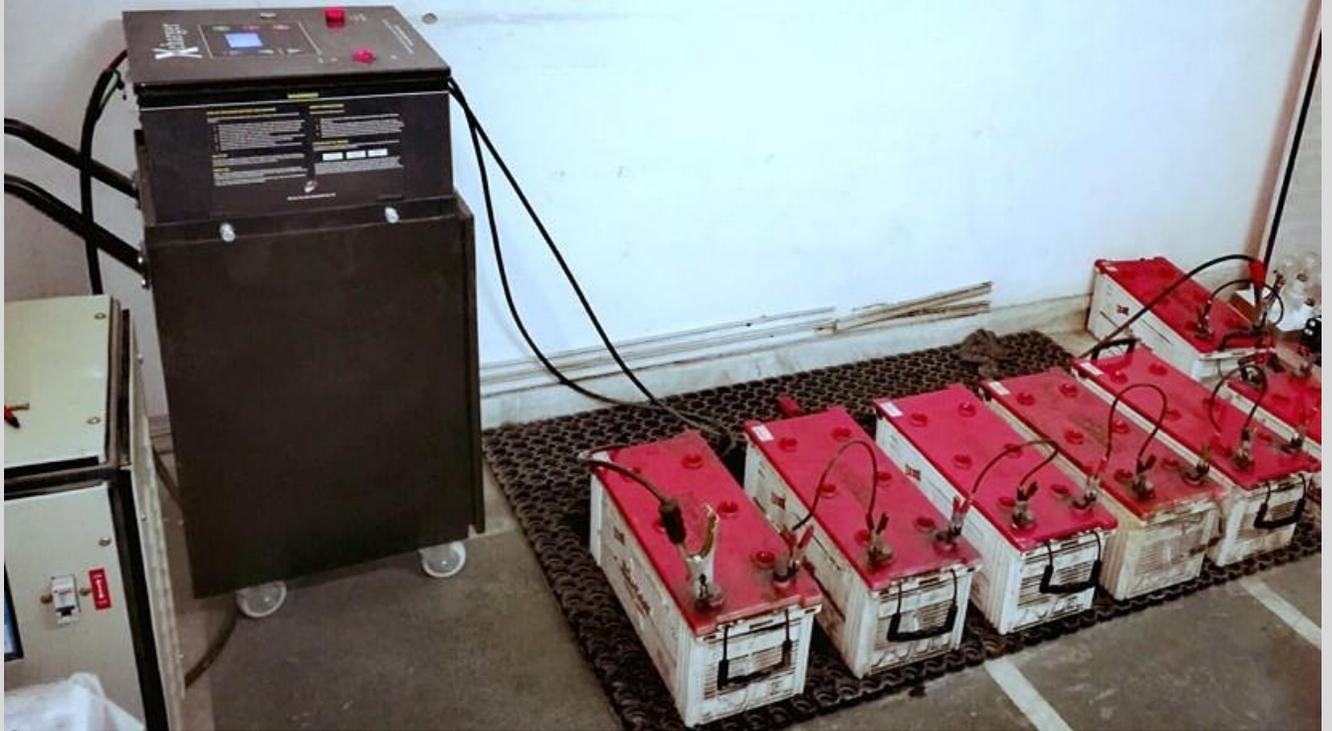


Hydration:- Hydration refers to pour distilled water into batteries and ensure plates not in dry condition.

Regen-Diagnostic:- This step is done to conduct various tests to access the battery condition for rejuvenation . This diagnose test does various level of tests which helps in identifying these batteries as qualified or not for rejuvenation even after they have passed in screening test.



Recovery and Charging:- This function is designed to desulphate and recover the lost capacity of all types of lead acid batteries. The combination of charger and solution restores five potency in the battery and make it healthy. These potency are - **Voltage, Internal Resistance, Capacity, SOC and CCA.**



Final Quality Control Test:-

This step is done to conduct various test to check technical parameters, required for battery at final stage before the battery is put to service use and ensures that the battery is capable to give the service life on its application. Thus, because of the EBEP one can gain a great benefit from not spending unnecessary Money on battery replacements. This environment friendly process will extend the useful life of any new, weak or discarded UPS bank battery at a fraction of the cost of new batteries. Our re-energizing process starts with selecting batteries which still have sound plates (ageing of 1 yr to 6 yrs) and removing the excess sulphation. Energy and Fire-tech technology dissolves the hard crystallized sulphate from the plates and returns it into the electrolyte thus re-establishing the normal battery voltage and amperage. The Energy and Fire-tech Re-energizing station activates the Energy and Fire-tech solution to recondition the plates and then recharges the batteries to finish the process.



Are you Going to Buy a
New Battery?
STOP
We can Rejuvenate your
Old Battery.

 **ENERGY&FIRE**
CONSERVE ENERGY AND SAVE LIFE



Cost Saving:

Table: 12 Volt Battery

Battery Detail (Inverter Battery)	
Battery Voltage	12 Volt
Battery rating	180 Ah
New Battery Price	12000 INR (Approx)
New Battery Life	3 Year Approx
New Battery Cost/Year	4000 INR
Rejuvenation Cost With 1 year Warranty	2000 INR
Cost Saving/Battery/Year	2000 INR
Saving (%)	50%

Table: 01

Cell Detail	
Cell Voltage	2 Volt
Cell Rating	100 Ah
New Cell Price	1800 INR (Approx) (18 Rs Per Ah)
New Power Bank Warranty*	1 year
New Cell Cost	1800 INR
Rejuvenation Cost with 12 Month warranty**	600 INR (6 Rs Per Ah)
Rejuvenation Cost For 1 Year	600 INR
Cost Saving/Cell/Year	1200 INR
Saving (%)***	67 % Per Annum (Approx.)

Table: 02

Power Bank Detail	
Power Bank Voltage	48 Volt
Power Bank Rating	440*24= 10,560 Ah
New Power Bank Price	1,90,080.00 INR (18 Rs Per Ah)
New Power Bank Warranty*	1 Year
Power Bank Cost/Year	1,90,080.00 INR
Rejuvenation Cost With 12 Month Warranty**	63,360.00 INR(6 Per Ah)
Rejuvenation Cost For 1 Year	63,360.00 INR
Cost Saving/Power Bank/Year	1,26,720.00 INR
Saving (%)***	67 % Per Annum (Approx)

*** Expected Battery Bank Life More Than 1 Year.**

**** Expected Life of Rejuvenated Battery Bank is More Than 1 Year.**

***** Saving Depends on Cost of New Battery Bank**

Main Causes of Hazards to environment:

We need to rejuvenate batteries because when they are disposed off the harmful substances present in the batteries permeate into the soil, groundwater and surface water through landfills and also release toxins into the air when they are burnt in municipal waste combustors.

In addition smelting lead, disposing plastic waste and Landfills also generate methane gas leading to the 'greenhouse effect' and global climatic changes.

Through our rejuvenation technology we enhance the battery life and delay the scraping which helps the environment.

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