Manganese X Energy Corp CEO Martin Kepman Explains Benefits of Using Rechargeable Batteries

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Saint-Laurent, April 20, 2021 - How will Manganese-based battery chemistry ensure more power, capacity, and longer battery life for our electronic devices, smartphones, and energy storage reserve systems.

Manganese and Rechargeable Batteries

Commercial Lithium, lithium-ion (Li-ion) batteries suffer from low energy density and do not meet the energy storage emporium's growing demands. Therefore, building the next-generation rechargeable Lithium, lithium-ion batteries with higher energy density, superior safety attributes, lower cost, and a longer life cycle is of a paramount importance. "Manganese is a candidate for disruption in the lithium-ion battery space. Manganese has elemental qualities that have the potential to improve density, capacity, rechargeability, safety and battery longevity. The timing for establishing a North American Manganese resource could not be better. With the global push for greener technology and lessening the carbon footprint, Manganese X is poised for leadership in providing a domestic supply of manganese for the rechargeable battery industry, everything from the small consumer batteries in electronic devices, smartphones and energy storage power reserves, to the EV and hybrid electric vehicle industry," Martin Kepman, CEO of Manganese X Energy Corp.

Manganese is poised to provide a viable component that may replace the existing rechargeable battery chemistry by using its elemental qualities. It has the potential to improve and extend the life of all future rechargeable batteries that could become the new Nickel Manganese Lithium-ion batteries. These future design battery chemistry improvements to the rechargeable battery will improve overall safety. Manganese has the ability to support elevated temperatures thus mitigating the risk of thermal reaction events, causing fire or explosion. Manganese has been incorporated into alkaline manganese disposable batteries for years, because of its stable nature.

Source: micro.magnet.fsu.edu

"The alkaline-manganese dioxide battery contains electrolytically manufactured manganese dioxide and aqueous alkaline electrolyte, as well as zinc metal as a powder. Electrolytic manganese dioxide is more pure than standard reagent manganese dioxide, and has a greater reactivity. The electrolyte is caustic, and therefore, reduces the hydrogen gassing rate."

Several new energy reserve cases are being extensively studied to achieve smaller and lighter next-generation rechargeable Lithium and Nickel Manganese Lithium-ion batteries that can outperform commercial Lithium-ion batteries. Furthermore, Manganese X Energy Corp. is strategizing to extract and produce high quality grade MNSO4, 99.95%, Manganese sulphate from it's Battery Hill deposit in Woodstock, NB. Elementally Manganese has the potential to provide these optimum energy enhancements thus achieving a useful and balanced product improving the current levels and future characteristics of rechargeable Lithium and Lithium-ion batteries.

Rechargeable batteries can provide various benefits to their users. These include:

Longer Battery Service / Shelf Life

It is said that disposable batteries have a longer shelf life than rechargeable batteries. However, if one looks more closely and takes more of a long term perspective, rechargeable batteries will prove to have a longer battery service life than most disposable batteries. The main points to consider here are the rechargeable battery run time, shelf life, and life cycle. Run time is usually undefined since it relies on the type of application or device used. Battery chemistry is one big factor that affects the three aspects mentioned above.

Rechargeable batteries are conventionally found in such chemistries as Nickel Metal Hydride (NiMH), Lithium Rechargeable (Li-ion, or any Lithium-based rechargeable battery), Nickel Cadmium (NiCad/NiCd), and Lead Acid.

Battery run time is synonymous for the length of battery service in a single-use. Shelf life refers to how long one can store the battery and preserve its freshness on the "shelf." Technically, it is the number of cycles of charge and discharge a cell consumes until it reaches the maximum charge threshold.

Another thing to note here is the battery's self-discharge rate. Self-discharge is directly proportional and highly dependent on fluctuations of temperature, capacity and battery life will be affected when temperatures are colder, which extends battery life. Increasing the temperature will also increase the battery's discharge rate as well as increase its capacity. Rechargeable battery characteristics that one should consider are energy density, operating temperature, and recharge time.

Environment-Friendly

Rechargeable batteries are traditionally environment-friendly compared to pre-eminent batteries. Aside from Nickel Cadmium (NiCad), which is now rarely used today (apart from some special application requirements), rechargeable batteries are preferred for a variety of characteristics over primary ones.

Batteries with rechargeable characteristics are said to have 12% less impact on water pollution, 30% less impact on air pollution, 28% less impact on global warming, and nine times less impact on air acidification. Their nature to recharge complements its services to the global conservation of natural resources, prevents soil degradation, and mitigates the harming of flora and fauna.

Manganese has been used in primary alkaline batteries for years and they have been deemed to be more environmentally friendly when mercury free.

Source: nwfdailynews.com

" Assuming that you're asking about ordinary residential/consumer grade batteries formulated from alkaline, manganese, and carbon-zinc, you might be surprised to hear that these batteries are not considered hazardous waste, and they can be safely disposed of in your household waste."

Cost-Effective

The price of a rechargeable battery versus a primary one can dissuade people from adopting the technology because of their exorbitant initial costs, but buying rechargeable batteries and studying all of their positive qualities makes them appealing to the consumer long term. The user will understand that over time that rechargeable batteries are far more cost-effective than disposable batteries. Primary batteries may not cost much initially but they will eventually require a greater outlay of money. When studied more closely and based on type, size, quality, temperature the batteries are exposed to, and the actual devices supported, the differences can be shockingly attractive.

Convenience

Rechargeable batteries give people the convenience to just sit back and relax while waiting for their

electronic devices, smartphones and energy storage reserve systems to get fully charged. As for personal convenience, one can use USB rechargeable batteries anytime, anywhere, for as long as they want. This also keeps you from paying frequent visits to battery shops and replacing primary batteries again and again. The convenience of rechargeable batteries helps avoid situations when there is an urgent need, and you don't have the resources to reach your local market and buy a battery, by simply finding an electrical outlet to recharge your device containing a rechargeable battery.

These are probably the most notable benefits of rechargeable batteries that one can appreciate. On the other hand some rechargeable batteries have their limitations, as well. However, going for rechargeable batteries over disposable ones have clear advantages.

If we look deeply into the pros mentioned above then we'll realize that they certainly outweigh the cons of using a rechargeable battery. Rechargeable batteries can be specifically useful for moderate to high current draw applications. By buying and committing to rechargeable batteries, we can be world citizens by doing our small but rather responsible bit to help nature and the planet. It's imperative that the proper disposal of these batteries are integral to completing the conservation loop, helping the recycling process by preserving our natural resources, while keeping the environment clean.

Given that more and more battery makers are using manganese to reduce battery costs, build superior products, and improve safety, it is reasonable that environmentally friendly manganese miners are going to become big suppliers to the rechargeable battery manufacturers who are in pursuit of revolutionizing the rechargeable battery industry. This is amongst the many goals a Canadian-based Manganese X Energy Corp. aims to achieve.

Resources:

Are Rechargeable Batteries Better Than Alkaline? Most of the Time

In some cases, single-use batteries are still the better option.

Credit... Jenice Kim By Sarah Witman Ms. Witman is an associate staff writer at Wirecutter, a product recommendation site owned by The New York Times Company.

Many of my favorite things as a child like my Walkman, for example required AA or AAA batteries. Batteries back then weren't always reliable. Sometimes I'd flip open the battery slot of a rarely used toy to find a crusty, whitish discharge from a leaky AA inside, or I'd leave the '90s-era rechargeable batteries juicing up on a bulky charger for an entire day only to have them die after just a few hours of use.

Since then, rechargeable batteries have become less expensive, more reliable, and much longer lasting. As Isidor Buchmann, chief executive and founder of Cadex Electronics a battery technology company based in Canada, explains on Battery University , the company's educational resource site, many of today's rechargeable batteries are made of nickel-metal hydride (NiMH), a more efficient material than reusable alkaline, and are chemically sealed to prevent battery leakage from crusting up your electronics. They hold a charge for much longer than the rechargeable batteries that were available in the 1990s or even a few years ago and you can recharge them hundreds of times over.

[Wirecutter spends hundreds of hours researching and testing gear so you don't have to.

Sign up for our weekly newsletter to get recommendations and real-world advice on upgrading your life.] In most cases, today you're better off using rechargeable batteries over disposable ones. They're safe and reliable, they create less environmental waste, and as we explain in the Wirecutter guide to rechargeable batteries , they pay for themselves after about six recharges, even with the added cost of a wall charger (for which we also have a recommendation Going by a 2012 case study for the California Department of Resources Recycling and Recover, we can estimate that about 4 billion disposable batteries are shipped to

the US each year. That means the average US household burns through about 47 batteries per year. But you could buy just 12 rechargeable batteries every four years (the average life span of some popular rechargeable batteries) instead of the 188 disposables you would otherwise need. And you wouldn't lose much performance: The best rechargeables can power your devices on a single charge for just as long as most high-quality single-use batteries can, but at a fraction of the cost over time.

However, single-use batteries are still the better option in a few instances:

Source: nytimes.com

Rechargeable Batteries: The 3 Types and Their Advantages

You don't need to be a gadget lover or technology geek to understand the significance of cells. Many gadgets and devices that we use in our everyday life still run on batteries. This can be highly frustrating if you rely on disposable batteries it can seem like you're stuck in an ongoing circle of low batteries and replacement expenses.

But what if there was a way to get out of that loop? Fortunately, there is: using rechargeable batteries. Below, you'll learn exactly what to expect from these batteries and why they're a wiser choice than disposable ones.

Source: greenhomegnome.com

5 Benefits of Rechargeable Batteries

Making the switch from disposable batteries to a set of rechargeable batteries and an accompanying charger can prove to be an extremely worthwhile investment, offering many benefits.

Battery chargers and rechargeable batteries are available almost anywhere, and there are endless options available to the consumer.Listed below are five major benefits of using rechargeable batteries, rather than the disposable alternative.

1. Eco-Friendly two main types of rechargeable batteries , with the nickel metal hydride (NiMH) variety being the most environmentally wise choice. Even with this in mind, nickel cadmium (NiCd) rechargeable batteries are still a better choice than disposable batteries.

Rechargeable batteries of any type are preferable to disposables because of the amount of waste throw away brands create. Using a battery charger and rechargeable cells, can save hundreds of dead batteries from making their way into the landfills and therefore save you quite a lot of money.

Rechargeable batteries are also far more energy efficient requiring much less energy to charge than is needed to manufacture disposables.Everybody should be doing their bit for the environment and switching to rechargeable batteries is a small step that can have a large impact.

Source: mumsthenerd.co.uk

About Manganese X Energy Corp

Manganese X Energy Corp. (TSXV: MN) (FSE: 9SC2)(OTC : MNXXF) FRANKFURT: 9SC2 with its head

office in Montreal QC, owns 100% of the Battery Hill property project (1,228 hectares) located in New Brunswick Canada. Battery Hill is strategically situated 12 kilometers from the US (Maine) border, near existing infrastructures (power, railway and road). It encompasses all or part of five manganese-iron zones, including Iron Ore Hill, Moody Hill, Sharpe Farm, Maple Hill and Wakefield. In his master's thesis on the Woodstock area manganese occurrences, Brian Way (2012) reports that the area "hosts a series of banded iron formations that collectively constitute one of the largest manganese resources in North America, approximately 194,000,00 tons." When sharing on social media please help us by using these hashtags:

#ManganeseXEnergyisElectricGold #ManganeseXMinerforElectricGold

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