Tech Insider Stories 31 March 2023

Story 1: Here's a creative idea – put solar panels between railroad tracks!

Source: Wonderfulengineering.com Story by Jannat Un Nisa

Link: https://wonderfulengineering.com/this-is-the-worlds-first-solar-panel-carpet-on-a-railway-track-and-it-may-generate-electricity/

- Last week we talked about floating solar panels on water reservoirs, and this is another unusual placement idea.

- A Swiss start-up called Sun-Ways will soon install solar panels between railroad tracks in the western part of Switzerland.

- The idea is simple - why not install rugged solar panels in the space between railroad tracks across all, or part of, Switzerland's 3,300-mile-long national rail network?

- And what if you devised a self-powered, multi-car, train-like vehicle that could lay down the solar panels, and then pick them up and store them when maintenance is required for the tracks – and then reinstall them?

- That's what Sun-Ways is proposing.

- Sun-Ways predicts that if Switzerland's railroads had solar panels between their tracks that would generate one Terawatt-hour of solar energy per year, equivalent to around 2 percent of Switzerland’s total electric energy consumption.

- Imagine if we put solar panels between the approximately 160,000 miles of rail lines here in the United States!

    - Using the Swiss model calculations, you could theoretically generate 48 Terawatt hours of power each year!

    - That’s a little more than the entire State of Oregon uses annually.

Story 2: New autonomous pile driving robot will accelerate solar farm construction

Source: Forbes Story by Heather Wishart-Smith

Link: https://www.forbes.com/sites/heatherwishartsmith/2023/03/20/built-robotics-unveils-autonomous-pile-driving-robot-expediting-solar-rollout/?sh=274dc9187591

See video here: https://www.youtube.com/watch?v=8Na6NF11iPc

- Large solar farms require thousands of 12- to 16-foot-long steel support piles upon which the solar panels are mounted.

- Traditional manual labor installation methods today can complete around 100 piles per day.

- To dramatically speed up this process a California-based outfit called Built Robotics this month introduced a huge autonomous, artificial intelligence-guided pile driving robot called the RPD 35, or Robotic Pile Driver 35.

- To visualize this robot, picture a big, modified construction excavator equipped with a special device at the end of its arm that picks up steel “H” piles [or beams] which are stacked on wing-like platforms projecting from the front and rear of the robot.

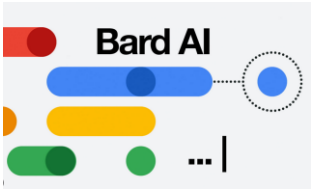
- Designed to build large, utility-scale solar farms, the approximately 3-and-a-half-ton robot can autonomously:

    - survey the site,
    - determine the optimal distribution and placement of piles,
    - grab a pile from one of the two onboard storage “wings”
    - drive the piles into the ground to a depth of eight feet deep with less than an inch tolerance,
    - and then inspect them at a rate of up to 300 piles per day.

Story 3: More artificial intelligence in your life - First we had OpenAI’s ChatGPT, now there’s Google’s Bard

Source: eWeek.com Story by Drew Robb

Link: https://www.eweek.com/artificial-intelligence/chat-gpt-vs-google-bard/?utm_source=rss&utm_medium=rss&utm_campaign=chat-gpt-vs-google-bard-generative-ai-comparison



- A few weeks ago, we talked about Microsoft injecting artificial intelligence capabilities into its Bing and Edge browsers using technology called ChatGPT from an outfit called OpenAI.

- The competition is now really heating up with Google recently announcing its alternative called "Bard". Which I've been playing around with this week.

- Both ChatGPT and Google's Bard are generative artificial intelligence tools.

- Generative AI is a type of AI system that, in response to user prompts and questions, is capable of generating text, images, or other media, and also analyze or summarize content from huge knowledge databases.

- Generative AI is a hot button topic these days!

    - Experts have been, and continue, debating the good and bad things about generative AI, but all agree this emerging technology is going to change our digital lives.

- Regardless of how this works out over time, Google's Bard AI platform is expected to rapidly gain users.

- That's because Google has vast expertise in artificial intelligence.

Story 4: Scientists invent oxygen-ion battery as a longer lasting alternative to lithium-ion batteries

Source: TechXplore.com Based on Vienna University of Technology announcement

Link: https://techxplore.com/news/2023-03-oxygen-ion-battery.html

Source: Popular Mechanics Story by Jackie Appel

Link: https://www.popularmechanics.com/science/energy/a43391877/oxygen-ion-battery-could-change-energy/

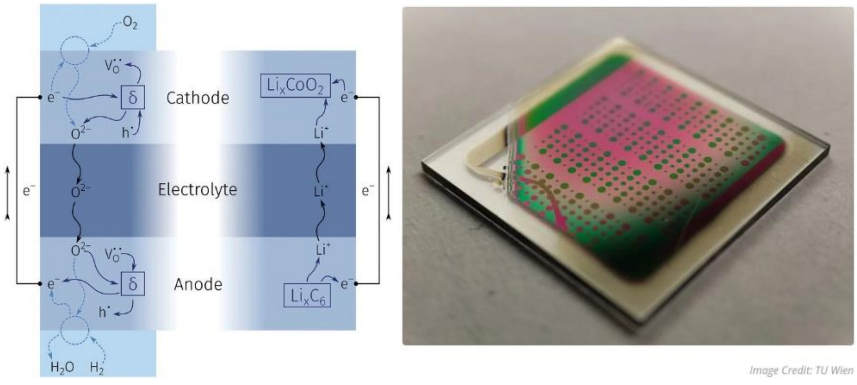


Image Credit: TU Wien

- Today lithium-ion battery technology is everywhere, in electric cars, smartphones, you name it.

- But researchers keep hunting for alternatives.

- Scientists at the Vienna University of Technology have now succeeded in developing an oxygen-ion battery alternative that offers important advantages over lithium-ion batteries.

- While the new oxygen-ion battery technology does not offer the high energy densities of lithium-ion batteries, it does offer a major breakthrough advantage.

- As we all know, the lithium-ion battery in your phone or other products, gradually loses storage capacity, and ultimately dies.

- But the storage capacity of an oxygen-ion battery can be regenerated to offer an extremely long service life.

- Another way the new oxygen-ion batteries differ from lithium-ion technology is the use of ceramic materials within the battery, which play a role in the generation of electrical output.

- The significance of the use of ceramic materials goes beyond just a technical composition difference.

    - Unlike lithium-ion batteries, which can present a fire hazard, the use of ceramic materials in an oxygen-ion battery makes them non-flammable.

- When it comes to how this new battery technology will be used, the Vienna University of Technology team says oxygen-ion batteries would not be good candidates for small devices, like your smartphone.

    - Instead, they believe oxygen-ion batteries would be an excellent solution for large-scale energy storage systems, for example huge banks of batteries to store electrical energy from wind or solar farm sources.