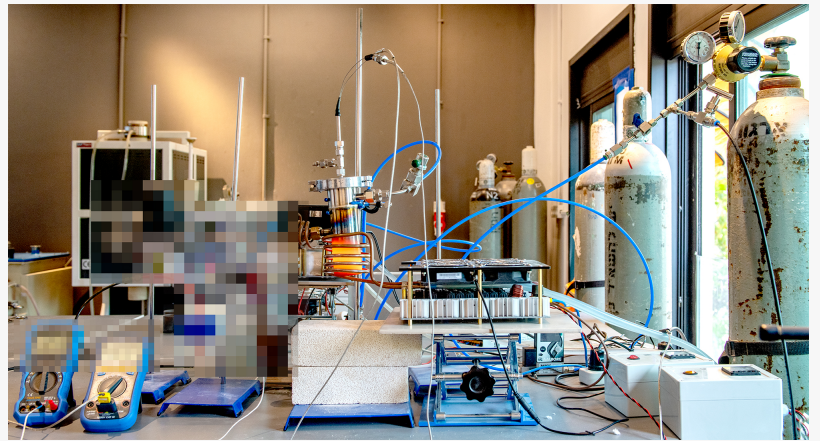


Helios Secures \$6M in Seed Funding for Sustainable, Carbon-Free Steel Production

On the path to develop onsite resources for the Moon, scientists stumble across novel approach to iron production – at 20% lower cost

TAL AVIV, OPTIONAL, ISRAEL, June 17, 2022 /EINPresswire.com/ -- TEL AVIV, ISRAEL, June 17, 2022 – Today Helios announces that its ambition to create an emission-free future for the steel industry will be fueled by \$6M in capital, thanks to a seed round led by At One Ventures, the “net positive to nature” investment firm, and Doral Energy-Tech Ventures. Deep tech investor Metaplanet and a global Top 5 mining company are also participating in the round.



Lab Experiment

Current methods of steel production emit large quantities of CO₂ through the reduction of iron ore with carbon. For every ton of steel, approximately 2 tons of CO₂ are emitted, making the industry responsible for 8% of humanity's carbon footprint. Additionally, the U.S. steel industry relies on natural gas and coal coke and breeze for fuel, accounting for roughly 6% of total energy consumed by manufacturing.

Helios, led by founder and CEO Jonathan Geifman, did not set out to make green steel at a lower cost. The company's original goal – and still is today – is to produce oxygen to sustain recurring missions to the moon by producing it on site. Their proprietary technology extracts oxygen from lunar regolith, the mixture of powdery dust and broken rock on the surface of the moon.

“On the moon we don't have the luxury of using carbon for energy, and you also have to be extremely efficient – you cannot waste or emit anything,” said Geifman. “The extraterrestrial environment really pushes your R&D to the extreme. You cannot be iterative; you must reinvent processes entirely. That is how we came up with this completely novel method of extraction that we soon realized would be beneficial for life on earth as well.”

“It's fascinating to me that while Helios was focused on creating technologies to further sustainable Moon missions and habitation – literally taking its ‘moonshot’ – they stumbled across

this brand-new process to benefit life on earth," said Uri Oron, Director of the Israel Space Agency at the Ministry of Innovation, Science and Technology. "This is a great example of the close connection between space technology and its impact on our lives here on Earth," he added.

Helios scientists discovered that the technology created for the reactor built to extract oxygen and iron from regolith could also be used to extract 99% pure iron from iron ore, using an entirely novel chemical process. The method requires 50% less energy than what is currently used in the industry, while operating at temperatures so low that a household oven will suffice to initiate the process.

In addition to the energy cost reduction, the process also eliminates 100% of the direct CO2 emissions. Using renewable energy to heat the system will make the whole process carbon free.

Unlike other green steel technologies, Helios does not require steelmakers to dramatically alter their existing processes. The company is designing a module that can be integrated into Direct Reduction of Iron (DRI) furnaces. This approach will reduce cost and facilitate faster adoption.

"Given the frictionless integration approach and superior unit economics compared to conventional iron reduction approaches, we saw potential in Helios to impact steelmaking and decarbonize the industry faster than incumbent technologies," said Laurie Menoud, Partner, At One Ventures. "We believe they will accomplish their master goal of enabling sustainable human life in space, but in the meantime, they are enabling sustainable human life here on earth."

Helios will leverage the new funding to demonstrate its technology on a larger scale, comparable to industry norms. Additionally, it will begin commercial agreements to build pilot plants globally, with the capacity to produce multiple tons of iron per day, as well as enhancing integration of its technology into the chain of production.

About At One Ventures

At One Ventures invests in deep-tech startups catalyzing a world where humanity is a net positive to nature. The firm is highly technical and was founded by Tom Chi, former Head of Experience and founding member at Google X. At One Ventures finds, funds, and grows companies that are using disruptive deep tech to upend the unit economics of established industries while dramatically reducing their planetary footprint. please visit

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