

“THE AQUALUNAR CHALLENGE”

Water on the Moon: UK Space Agency names NAICKER SCIENTIFIC a finalist in the Aqualunar Challenge

- The Aqualunar Challenge is a £1.2m international prize funded by the UK Space Agency’s International Bilateral Fund and delivered by Challenge Works.
- The Aqualunar Challenge is awarding £300k to ten UK teams developing technologies to purify ice frozen in the Moon’s soil to make human habitation on the lunar surface viable.
- NAICKER SCIENTIFIC LTD has been awarded £30,000 to develop key aspects of its *SonoChem System* in pursuit of the grand prize.

Wednesday 24 July 2024 (Tetbury, England) – NAICKER SCIENTIFIC LTD is one of ten cutting-edge teams to have been advanced to the finals of the Aqualunar Challenge. The challenge is rewarding the development of new technologies that could reliably supply water to a permanent crewed base on the Moon by purifying ice frozen in the lunar soil.

NAICKER SCIENTIFIC LTD has been awarded £30,000 to prove that its *SonoChem System* is a viable concept. The proposed chemical processing system incorporates sono-chemical degradation as a core unit operation. Harnessing powerful sound waves, it spontaneously forms millions of tiny bubbles in contaminated liquid water. The extreme temperature and pressure created within each micro-bubble drives free radical and pyrolysis reactions which effectively removes contaminants. This is the first-ever sono-chemical process technology developed for space applications, offering a consumable-free and robust solution for water purification, in the remote and unforgiving lunar environment. As well as having applications for exploration of the Moon and beyond, the technology will have wide application here on Earth – wherever lightweight, robust, low-power water purification is needed.

Lolan Naicker, Technical Director, NAICKER SCIENTIFIC LTD, said:

“My personal interest in the field of In-Situ Resource Utilisation started two-decades ago, while sitting in chemical engineering lectures at university, and day dreaming about how core principles could be applied in space or on other planets. As a company, we’ve been internally exploring ways to adapt traditional chemical process engineering technology for operation in the harsh environment of space for nearly two years - part of our ‘chemistry in space’ initiative. We now have the perfect opportunity to take one of these projects from concept to hardware.”

The Aqualunar Challenge is part of a £1.2m international prize funded by the UK Space Agency's International Bilateral Fund and delivered by Challenge Works – experts in designing and running innovation challenge prizes. The challenge is a collaboration with the Canadian Space Agency (CSA) and Impact Canada.

Around the lunar south pole, it's estimated that 6.5% of the soil (regolith) is water frozen as ice. For a permanent crewed base on the moon to be possible, astronauts will need a reliable supply of water for drinking and growing food, as well as oxygen for air and hydrogen for fuel.

If the lunar ice can be successfully extracted, separated from the soil and purified, it makes NASA's goal of establishing a base by the end of the decade viable. The Artemis campaign, as it is known, is supported by the UK Space Agency through its membership of the European Space Agency.

Paul Bate, CEO, UK Space Agency, said:

“The ambition to build a sustainable human presence on the Moon through the NASA-led Artemis Missions will only succeed if we have ways of generating a reliable supply of clean water. The Aqualunar Challenge showcases a range of innovative ideas from UK teams and individuals to tackle this challenge, while strengthening ties with our Canadian partners.”

Explaining the importance of these new technologies, UK Space Agency reserve astronaut and chair of the Aqualunar Challenge judging panel, Meganne Christian, said:

“To sustain a permanent crewed base on the Moon over years and decades, astronauts will need a reliable water supply, which we can also use to produce oxygen and hydrogen. It is expensive and risky to send a continuous convoy of rockets from Earth to the Moon to keep a base supplied, which is why we need to develop the technologies that can purify the water that is already on the Moon.”

NAICKER SCIENTIFIC LTD will develop key aspects of the *SonoChem System* between now and early 2025, before final judging. In addition to £30,000 in funding, the team will also receive a comprehensive programme of non-financial expert support, mentoring and events from Challenge Works and the UK Space Agency worth a similar value. The Aqualunar Challenge will name one winner and two runners up in Spring 2025, sharing an additional £300,000 to advance their technologies to the next level.

To find out more about the Aqualunar Challenge in the UK and learn more about all ten finalists in detail, visit aqualunarchallenge.org.uk.

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Notes to editors

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About the Aqualunar Challenge

The Aqualunar Challenge is a £1.2m international challenge prize to drive the creation of innovative technologies to make human habitation on the Moon viable by finding ways to purify water buried beneath the lunar surface.

The Aqualunar Challenge is a UK-Canada international collaboration under the UKSA's International Bilateral Fund (IBF). It is being delivered by the UK Space Agency (UKSA) and Challenge Works (part of innovation foundation Nesta), in collaboration with the Canadian Space Agency (CSA) and Impact Canada.

UK-led teams behind the ten most-promising ideas received seed funding of £30k each to develop their ideas in July 2024. In Spring 2025, three teams will be named winner and runners up, sharing in an additional £300k to take their solutions to the next level.

Entries to the UK track are required to be UK-led, however the Aqualunar Challenge has actively encouraged international collaboration within teams. The Canadian track of the prize is running concurrently to the British track rewarding solutions from Canadian-led teams.

About the UK Space Agency

[The UK Space Agency](#) inspires and leads the UK in space to benefit our planet and its people. It is an executive agency, sponsored by the [Department for Science, Innovation and Technology](#).

About Challenge Works

[Challenge Works](#) is a global leader in designing and delivering high-impact challenge prizes that incentivise cutting-edge innovation for social good. It is part of UK innovation foundation agency [Nesta](#). For more than a decade, it has run more than 80 prizes, distributed more than £100 million in funding and engaged with 12,000 innovators.