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EXTRACTION OF HELIUM-3 ON MOON- POTENTIAL SOLUTION TO ENERGY CRISIS ON EARTH

Abstract

The rising crisis of depleting energy resources on Earth has become a subject of prime concern considering the globalization around the world. The fossil fuel which is the backbone of energy for vast purposes on Earth is depleting very quickly and it's believed that it will vanish very soon. The vanishing of fossil fuels can put an end to the development on Earth. Nuclear technology that has been providing huge support in fulfilling the energy requirements has been the subject of severe criticisms in wake of the Nuclear Disasters in Chernobyl, Ukraine and in Fukushima, Japan. The hazards of nuclear radiation have been the prime reason behind the worldwide protest to close down the presently active Nuclear reactors and ban on any future Nuclear Reactor installations. The protest is surely acceptable for the sake of human life on Earth but the requirement of energy sources can't be ruled out for this actively globalizing world. Helium-3, an isotope of helium can produce huge amount of energy but it's not available in enough amount on Earth. Moon is believed to have huge stock of Helium-3 which can play a crucial role in solving the energy crisis on Earth. It's said that Moon has enough stock of Helium-3 to fulfil the energy demands on Earth for the next 5000 years. The extraction and transportation back to Earth remains the biggest hurdle in before any potential use as the source of energy. Manned extraction is considered to be very difficult considering the absence of atmosphere and the value of acceleration due to gravity. In this direction, a fully autonomous Robotic system can play a crucial role in performing the extraction on Moon. The system consisting of a Robotic Spacecraft and a Rover can perform the operation to extract and transport back Helium-3 to Earth. The Spacecraft designed in such a manner that the Rover can go back inside the Spacecraft with Helium-3 onboard it and can travel back to Earth similarly as the manned missions to Moon were completed. The Rovers designed to travel not only on the surface of Moon only but it should also be capable to travel beneath the surface as Helium-3 is believed to be present deep inside the Lunar surface. The development of this technology can be very effective in extracting the Helium-3 from Moon and transporting it back in solving the energy crisis on Earth.