

'Artificial sun' sets a new record

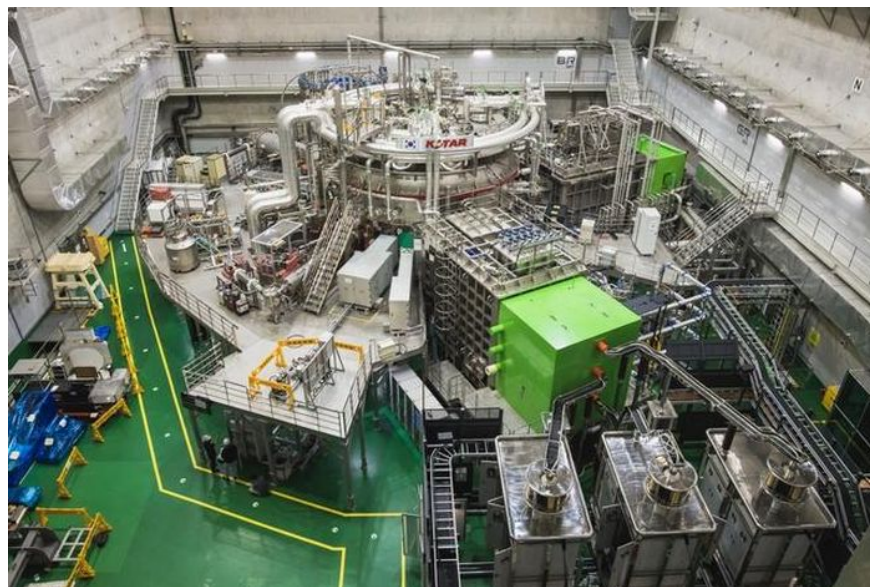
KSTAR's goal is to maintain a temperature of 100 million degrees Celsius for 300 seconds by 2026, a milestone needed to scale up fusion energy production.

Scientists from the KSTAR Research Center of the Korean Institute of Fusion Energy (KFE) have just announced a new world record for the time it takes to maintain a temperature of 100 million degrees Celsius - 7 times hotter than the core of the surface. sky - up to 48 seconds in a nuclear fusion experiment.

This is an important step forward in clean energy technology.

Nuclear fusion, also known as fusion, mimics reactions in the cores of stars including the sun; in which two or more nuclei fuse together to form a new, heavier nucleus, releasing enormous energy.

Man-made fusion reactions - also known as "artificial sun" technology - are considered the leading clean energy solution for the future, able to provide limitless energy sources without causing pollution. Carbon causes global warming.



The most common way to achieve this potential but challenging energy source is to use a tokamak reactor, in which hydrogen variants are heated to extremely high temperatures to create plasma.

According to KSTAR Director Si-Woo Yoon, creating high-temperature and high-density plasma, in which the reactions are sustained for long periods of time, is important for fusion reactors to set new records and create So the energy source is large enough to serve human life.

The new record of 48 seconds achieved through tests from December 2023 to February 2024 beat the 2021 record of 30 seconds, thanks to the adjustment of several processes including using tungsten to replace carbon. in the diverter, helping to more effectively separate the heat and impurities generated by the fusion reaction.

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Last February, another group of scientists from Oxford City - England set a record for energy produced by fusion reactions - reaching 69 megajoules in 5 seconds, nearly enough to power 12,000 homes. also within 5 seconds.

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