



Przeclaw News

Przeclaw News (Poland)

31 Oct 2023

English translation

A revolutionary technology to produce 3D printed metals with mixed properties

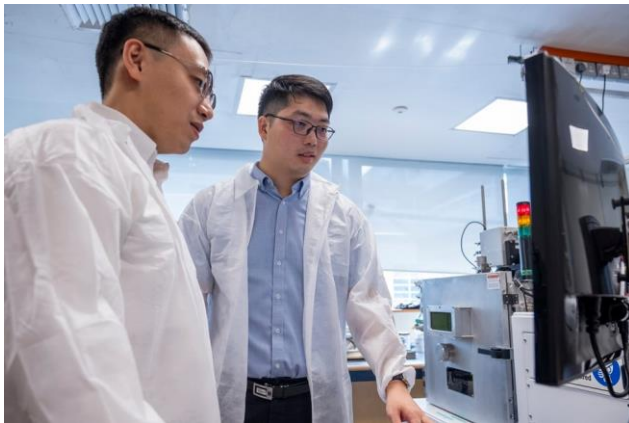


Photo: Dr Gao Shubo (left), a research fellow at NTU in Singapore, and Dr Li Qi, a researcher at the Singapore Science, Technology and Research Agency, are the first and second authors of a study on a new method that allows custom-made 3D printed metal parts containing... With different properties In their experiments, they used a laser powder melting machine (right) to 3D print the parts.

Phil Lee

Researchers have developed a new method that can 3D print custom metal parts that have different properties, for example, some areas of metal are stronger than others.

The new technology, developed by researchers led by NTU Singapore and the University of Cambridge, uses 3D printing steps. Unlike traditional metal-making processes, it does not require additional raw materials, mechanical processing, or radical manufacturing processes to achieve a similar effect, such as coating metal with another material, which can help reduce production costs.

In addition to designing a 3D printed metal part with different strength levels, the new process should theoretically allow manufacturers to design parts with other characteristics, such as different levels of electrical conductivity or corrosion resistance in the same metal.

The researchers – led by Professor Gao Huajian, a distinguished university professor at NTU Singapore, and Associate Professor Matteo Città of the University of Cambridge, who was a member of the NTU faculty at the time of the study – were inspired by the "heat and impact" methods. Similar to thousands of years used in blacksmithing to develop a new process.

This led them to combine the principles of materials science and mechanical engineering and apply 3D printing techniques commonly used to remove defects in printed metals and prevent them to alter the microscopic structures of metals to alter their properties.

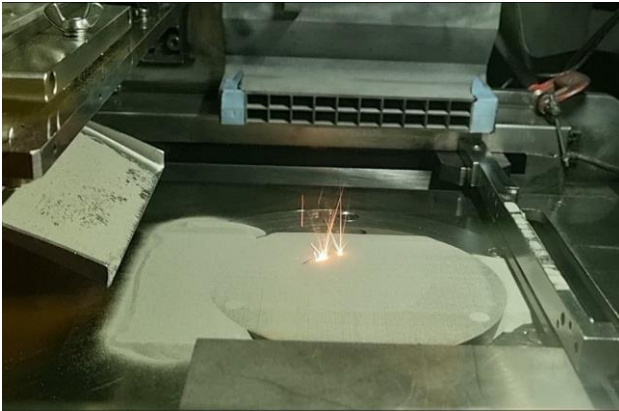


Image: One of the laser powder melting machines used in NTU Singapore and University of Cambridge experiments to 3D print metals with different properties.

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