

New 3D printing techniques especially for stainless steel materials

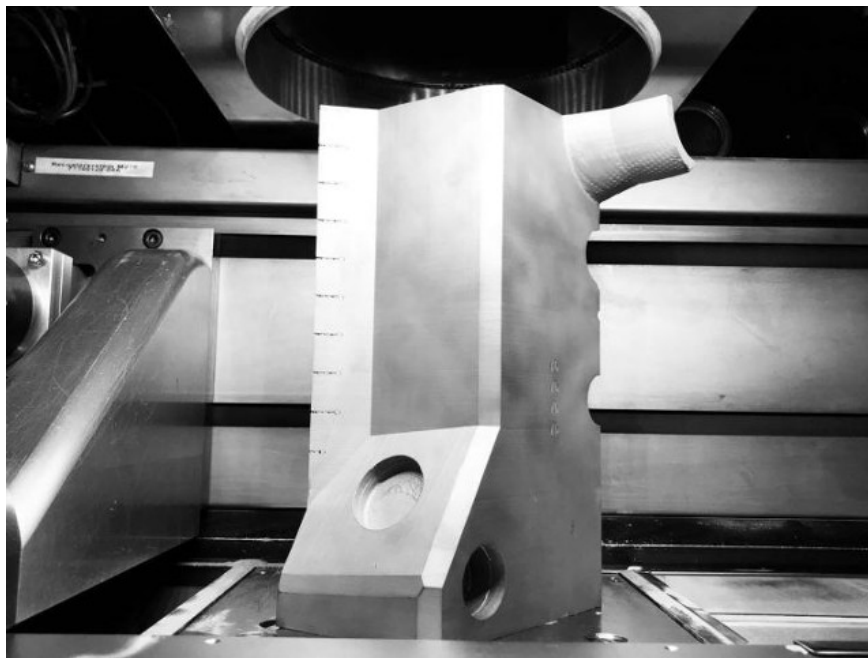
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Most metal shaping methods lead to a reduction in toughness, a situation created and resolved by researchers from Birmingham University.

The team, which includes teams from Stockholm University, Sweden and Zhejiang University, China, claims that this study is an important step in using 3D printing technology as a major production tool. .

Researcher at Birmingham University, Dr. Leifeng Liu, said: *"3D printing . is known as a method of producing previously inaccessible shapes, and our work. It also provides the ability to create new-generation structural compounds with significant improvements in durability and toughness "* .



According to the research team, this was done thanks to the extremely fast cooling rate - estimated at 1000 ° C per second to 100 million degrees Celsius per second - which cannot be done in the production of digital large amount in the traditional way until 3D printing method appeared.

Quickly cooled metals lead to an unbalanced state that allows some microstructures such as small molecular transfer networks (micro-sized micro-sized dislocation networks), which are revealed in the article. is the main reason for the improved mechanical properties of the metal.

" This work allows scientists to study a completely new tool to design new alloy systems with super-muscular properties ," Liu added. " It also helps 3D printing methodologies have access to areas that require high mechanical properties such as metal structural parts, aerospace and automotive components ."

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