T15-071

Tohoku University's Invention

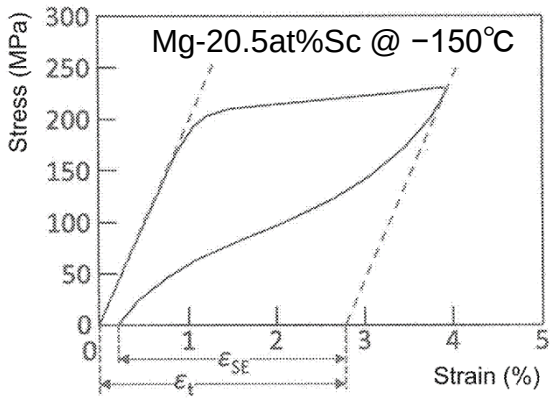
Magnesium alloy exhibits superelastic effect

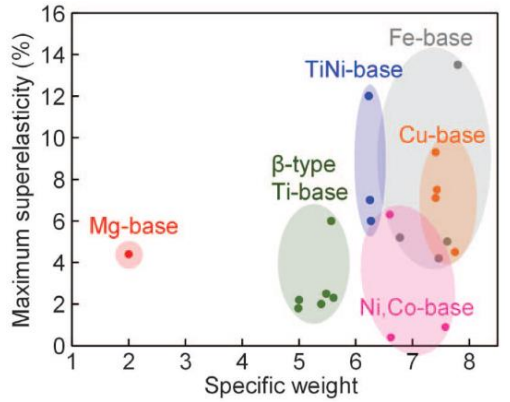
Specific gravity is less than one third of Nitinol! The lightest superelastic alloy worldwide without allergic elements

Introduction

Conventional superelastic and shape-memory alloys are generally composed of elements having high specific gravity, and the ones composed of lightweight elements have not been reported yet. Although superelastic and shape-memory alloys for medical applications are being intensely investigated, a typical TiNi alloy (Nitinol) is still difficult to apply to patients owing to allergic effect caused by nickel.

The present invention provides superelastic and shape-memory alloy having the specific gravity less than one third of Nitinol by using magnesium. As well known as the good biocompatibility of magnesium, the alloy is expected to be applied to medical field.





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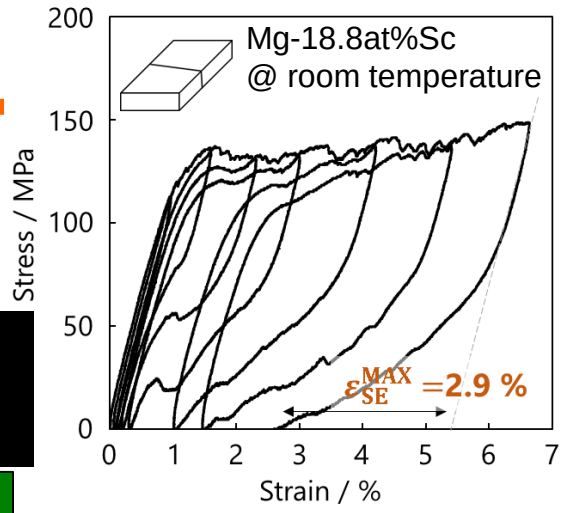
Application

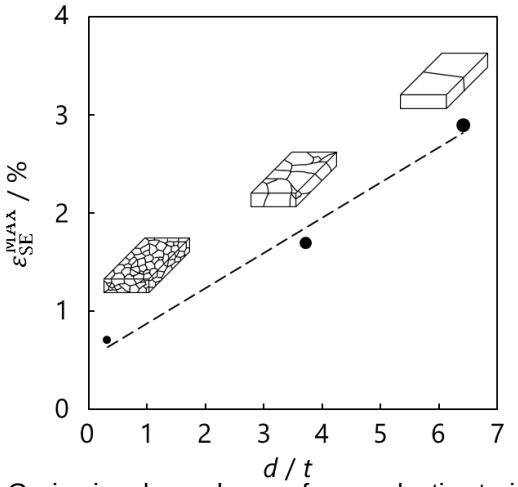
- Stents
- Shock-absorbing materials
- Glassframes
- Sports equipment

Effect

- Superelasticity
- Shape-memory
- Weight reduction

Material samples are available under material transfer agreement (negotiable about amount and price).





Grain size dependence of superelastic strain

Scripta Materialia 168 (**2019**) 114-118

Patent Information

Patent No.: JP6497686
Application No.: EP16855461.6、US15/767,439、CN201680059723.6、HK19119638.5
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