Title (en)

METHOD FOR CUTTING AN AMORPHOUS METAL ALLOY SAMPLE

Title (de)

VERFAHREN ZUM SCHNEIDEN EINER PROBE AUS EINER AMORPHEN METALLLEGIERUNG

Title (fr)

PROCÉDÉ DE DÉCOUPE D'UN ÉCHANTILLON EN ALLIAGE MÉTALLIQUE AMORPHE

Publication

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Application

EP 22754002 A 20220629

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Abstract (en)

[origin: WO2022234155A2] The invention relates to a method for machining an amorphous metal alloy sample (1) using a femtosecond laser, comprising at least a step of irradiating the sample (1) with a laser beam (2) along a reference path (TRef) in order to ablate material of the sample (1), such as to obtain a machined sample (1) maintained in the amorphous state, wherein the laser beam (2) is pulsed and the duration of each pulse is less than 1000 femtoseconds, preferably less than 600 femtoseconds, and the laser beam (2) pulse frequency (f) is greater than 20kHz. According to the invention, the amorphous metal alloy has a submillimetre critical diameter (Dc), and/or a difference (ΔTx) between crystallisation temperature (Tx) and glass transition temperature (Tg) of less than 60°C, and/or a quotient (ΔTx/(Tl-Tg)) of the difference (ΔTx) between crystallisation temperature (Tx) and glass transition temperature (Tg) and the difference between liquidus temperature (Tl) and glass transition temperature (Tg) of less than 0.12.

IPC 8 full level

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