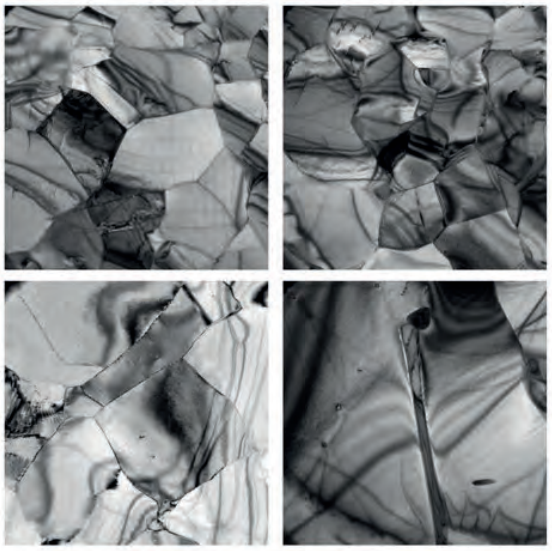
Ternary titanium alloy, a method for producing thereof and use of the same



Description of the solution:

The invention relates to a ternary alloy of titanium, silicon and rhenium and a method of producing a ternary alloy of titanium, silicon and rhenium to achieve high strength or plasticity and its applications.

Benefits of the solution:

- It can be used to manufacture load-bearing components for lightweight structures, critical components operating at high temperatures, structural components, engine skin components, drives, blades or gas turbine vanes.
- One of the processing methods used in the invention resulted in high strength and very high plasticity - the yield point increased by about 100 MPa and the elongation to break by 11% compared to a commercially available alloy.
- The application of the second type of treatment increased the tensile strength of the alloy to 950 MPa.
- In the context of commercial solutions, a 40% and 147% increase in strength was achieved for the available commercial alloy and pure titanium, respectively.

Area of application:

Aviation, power engineering.

Intellectual property:

Inventions: P.440911, EP4261300

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