A case hardened component of titanium - DTU Orbit (07/08/2019)

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The present invention relates to a case hardened component of a titanium alloy, the component having a diffusion zone of a thickness of at least 50 μm, as calculated from the surface of the component, the diffusion zone comprising oxygen and carbon in solid solution and having a distinct phase of a carbo-oxide compound having the composition TiOxC1-x, wherein x is a number in the range of 0.01 to 0.99, which diffusion zone has a microhardness of at least 800 HV0.025 and which carbo-oxide compound has a microhardness of at least 1200 HV0.025. In another aspect the invention relates to a method of producing the case hardened component. In a further aspect the invention relates to a method of oxidising a component of a Group IV metal.

General information
Publication status: Published
Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Centre for oil and gas – DTU, Technical University of Denmark
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Publication date: 2 Jun 2017

Publication information
IPC: C23C8/34
Patent number: WO2017207794
Filing date: 07/12/2017
Priority date: 02/06/2016
Priority number: EP20160172699
Original language: English
Research output: Patent › Patent – Annual report year: 2017 › Research