

Title (en)

COATING OF A COMPONENT MADE OF TEMPERED STEEL AND METHOD FOR THE APPLICATION OF SAID COATING

Title (de)

BESCHICHTUNG EINES BAUTEILS AUS GEHÄRTETEM STAHL UND VERFAHREN ZUM AUFBRINGEN DER BESCHICHTUNG

Title (fr)

REVÊTEMENT D'UN COMPOSANT EN ACIER TREMPÉ ET PROCÉDÉ D'APPLICATION DU REVÊTEMENT

Publication

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Application

EP 08717034 A 20080222

Priority

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Abstract (en)

[origin: WO2008119600A1] The invention relates to a coating of a mechanically stressed surface of a component (1) made at least partially of a tempered steel, produced by the application of a sol-gel layer (7,8), conversion of the sol-gel layer into a gel, and the subsequent sintering of the layer by means of a laser (4), wherein the laser output is controlled such that the tempered steel of the component is not heated above the annealing temperature. In this manner, the object is attained of creating a simple, cost-effective, and environmentally friendly coating method with which electrically insulating oxide-ceramic layers may be formed.

IPC 8 full level

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Citation (opposition)

Opponent : Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.

- DE 102004052135 A1 20051229 - FACHHOCHSCHULE SCHMALKALDEN [DE]
- EP 1176228 A2 20020130 - DAIMLER CHRYSLER AG [DE]
- WO 9944822 A1 19990910 - KONINKL PHILIPS ELECTRONICS NV [NL], et al
- CHUNG J., KO S., GRIGORPOULOS C.P. ET AL.,: "Damage-Free Low Temperature Pulsed Laser Printing Of Gold Nanoinks On Polymers", JOURNAL OF HEAT TRANSFER - TRANSACTIONS OF THE ASME, vol. 127, July 2005 (2005-07-01), pages 724 - 732, XP055525782
- JEFF T.M. DE HOSSON, R. POPMA: "Sintering characteristics of nano-ceramic coatings", DEFECT AND DIFFUSION FORUM, vol. 218-220, 8 August 2003 (2003-08-08), pages 51 - 66, XP055525793, ISSN: 1662-9507
- EZZ T; CROUSE P; LI L; LIU Z: "Laser /sol-gel synthesis: a novel method for depositing nanostructured TiN coatings in non-vacuum conditions", APPLIED PHYSICS A - MATERIALS SCIENCE & PROCESSING, vol. 85, no. 1, 29 July 2006 (2006-07-29), pages 79 - 82, XP019424437
- ANONYMOUS: "Sol-Gel-Prozess, Wikipedia", 10 March 2007 (2007-03-10), pages 1pp, XP055525798, Retrieved from the Internet <URL:https://de.wikipedia.org/w/index.php?title=Sol-Gel-Prozess&oldid=28964399>
- H. K. SCHMIDT: "Anorganische Synthesemethoden Das Sol-Gel-Verfahren", CHEMIE IN UNSERER ZEIT, vol. 35, no. 3, 2001, pages 176 - 184, XP055525804, ISSN: 0009-2851

Cited by

DE102020116991B3; EP3932517A1

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