Sol-gel processing of titanium-containing thin coatings

In recent years, the development of hydroxyapatite thin films has gained significant attention in the field of wear-resistant technologies. The deposition of HAp thin films on various substrates has ...

The aqueous sol-gel synthesis route for MgTi?O? NPs, employing precursors like magnesium chloride (MgCl?) and titanium isopropoxide (TTIP), inevitably results in the presence of ...

In this study, a Ag/ZrO2 hybrid coating prepared by the sol-gel method on a v-type Ti45Nb alloy was applied by the spin coating technique, and the microstructural, mechanical, electrochemical, and tribological properties of the ...

This peculiar multidentate structure allows the formation of complexes that strongly influence the morphology and electronic properties by inserting themselves into the network of the growing ...

(Zr,Ti)C-SiC modified C/C composites were synthesised through a sol-gel process with controlled Zr/Ti molar ratio modulation. Elevated Zr/Ti ratios were found to accelerate carbon fibre ...

Titanium dioxide (TiO2) thin films were deposited on silicon substrates by using a sol-gel dip coating technique. In order to study the influences of the deposition layer on the properties of TiO2 ...

04 Sol-gel synthesis of carbide materials Sol-gel synthesis is employed to produce carbide materials with controlled composition and microstructure. This process involves the formation of a colloidal solution (sol) that gradually ...

This study investigates the fabrication of TiO 2 thin films using the sol-gel spin-coating method, with varying concentrations of titanium (IV) butoxide: 1.0 mL, 1.5 mL, and 2.0 ...

o Sr-BCP coatings showed good biocompatibility and promoted osteogenic cell activity. o The sol-gel coating process formed HA and SrNO 3 crystals on the titanium surface. o Coated samples ...

Here, we demonstrate direct nanoimprinting of mesoporous titania (pTiO?) prepared by a sol-gel-based spin-coating process compatible with large-area fabrication. This material platform is ...

These coatings are synthesized using various methods including sol-gel, electrodeposition, and plasma spraying. The hybrid composition enhances the overall performance of the coating, ...

Najafabadi et al. [20] exploited the DoE methodology based on Taguchi orthogonal design to investigate and

optimize compositional and process parameters of hybrid organic-inorganic ...

This work investigates on how Fe incorporation influences the surface, microstructural, and optical properties of solution precursor plasma-sprayed TiO2 coatings. The Fe-TiO2 coatings were prepared using titanium isopropoxide ...

Figure 1 depicts the sample preparation and NIRI process used in this work. Mesoporous titania (pTiO?) thin-films are first deposited by soft-templated sol-gel preparation, spin-coating, and ...

Optical, structural and morphological properties of titanium dioxide (TiO 2) deposited by spin coating method have been reviewed in the current work. Sol-gel spin coating is a cost ...

The global market for joint implant coatings is experiencing significant growth, driven by an aging population, increasing prevalence of joint disorders, and advancements in medical technology. ...

Zinc oxide films prepared by sol-gel spin coating technique Growth and properties of lead iodide thin films by spin coating Preparation of p-type CuCo 2 O 4 thin films by sol-gel processing ...

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