

양극산화법에 의한 생체적합형 티타늄 표면 개질

문규식, 김재연, 김동현, 천세준, 김효은, 이명훈, 최원열[†]
강릉대학교

Surface Treatments of Titanium Biomaterials by Anodization

Kyu-Shik Mun, Jae-Yeon Kim, Dong-Hyun Kim, Se-Jun Cheon, Hyo-Eun Kim, Myoung-Hoon Lee, Won-Youl Choi[†]
Kangnung National University
([†] e-mail: cwyl@kangnung.ac.kr)

Abstract : The surface was transformed to porous titanium oxide by the anodization of pure titanium. Titanium was anodized in non-aqueous and aqueous electrolytes at different potentials between 5 V and 150 V. Various electrolytes were composed of ethylene glycerol, H₂SO₄, NH₄F and H₂O. We obtained titania nanotube arrays on the micro pore of titanium. Micro pores and nanotubes were obtained by anodization at high potentials and low potentials, respectively. Morphologies of nanotubes and micro pore were characterized by FE-SEM. The unique surface structure is very attractive to electrical and medical applications such as gas sensor, biosensor, dental implant and stent

Keywords : TiO₂, Nanotubes, Anodization, Glycerol

Acknowledgement

이 논문은 2007년도 강원신소재사업단 산업체 주문형프로젝트 지원 사업, 산업자원부 지방기술혁신사업 (RTI05-01-02) 및 에너지관리공단 신·재생 에너지 기술개발 사업 (2007-N-PV08-P-01)에 의하여 수행되었음.