

DEPARTMENTAL SEMINAR

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TOPIC	Surface Constructions of Nano-Micro Structured CaP Biomaterials on Medical Ti Alloys for Highly Improved Biocompatibility		
SPEAKER	Professor Chang-Jian Lin State Key Laboratory of Physical Chemistry & Solid Surfaces and College of Chemistry & Chemical Engineering Xiamen University, PRC		
HOST	Prof Feng Si-Shen		
DATE	29 Jun 2009 (Monday)	TIME 11.00 a.m.	VENUE E5-02-32
SYNOPSIS	<p>Biocompatibility and bioactivity of the implant biomaterials always depend on their surface physicochemical characteristics. A biomimic surface with proper composition and structure of the biomaterials markedly optimize the interaction between organisms and surface of materials, and consequently biological properties for the biomaterials. In the present work, based on the views of bionics, we concentrated our attention to construct various nano-micro nest-like structured calcium phosphate (CaP) and their composite coatings, including octacalcium phosphate (OCP), hydroxyapatite (HAp), micropatterned titanium surface by using electrochemical techniques. The physico-chemical and biological properties of the as prepared nano-micro structured biomaterials were characterized by various physicochemical methods, <i>in vitro</i> and <i>in vivo</i> evaluations respectively. It is demonstrated that the nano-micro structured CaP composite coatings on Ti alloys exhibit a preferable biocompatibility and bioactivity, because they are similar to the natural bone in both chemical composition and micro structure on surface. Meanwhile, the interaction between biomaterials and biospecies and insight into biocompatibility of the prepared nano-micro structured biomaterials were also elucidated from physicochemical and biological aspects.</p>		
BIOGRAPHY	<p>Study of Chemistry at Xiamen University, PhD degree at Xiamen University in 1985, and post-doctoral researcher at National Institute of Standards and Technology, USA in 1987-1990. Associate professor of Xiamen University from 1990 to 1991. Full professor in both Department of Chemistry and State Key Laboratory for Physical Chemistry of Solid Surfaces at Xiamen University since 1991. Distinguished professor of Xiamen University since 2005. From 1997-1999, head of Department of Materials Science, and from 1998-2000, associate dean for College of Chemistry and Chemical Engineering. From 2000 to 2006, director of Department of Science and Technology of Xiamen University. Total publication: more than 300 reviewed papers and 28 patents. Several awards and honors including Outstanding Winner of Doctoral Degree in China (1991), National Foundation for the Outstanding Young Scientists (1996), Second Prize of Innovation, General Arming Ministry (2002) and State Education Ministry (2003), Second Prize of the Progress in Science and Technology, Fujian Government (2004). Currently working together with 2 postdoctors, 10 PhD and 15 master degree students in the area of electrochemical methods, corrosion and protection, biomaterials and cell electrochemistry, and nano electrochemistry. Particular interests in various advanced nano materials from electrochemical aspects, such as biomaterials, environmental and energy materials.</p>		
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