

8<sup>th</sup> International Conference and Exhibition on

## MATERIALS SCIENCE AND ENGINEERING

May 29-31, 2017 Osaka, Japan

**The study on correlation among electric potential of different materials of crown in different corrosion status (artificial saliva)****Huey-Er Lee<sup>1</sup>, Ju-Hui Wu<sup>1</sup>, Yan-Ting Pan<sup>1</sup>, Yu-Ting Jhong<sup>1</sup>, Kuan-Yu Chiu<sup>1</sup>, Chih-Yeh Chao<sup>3</sup>**<sup>1</sup>Kaohsiung Medical University, Taiwan<sup>2</sup>National Pingtung University of Science and Technology, Taiwan

For well corrosion and aesthetics, the common materials of dental crown are included Pt, Pd, Au and Co alloys as well as G5 Ti alloy. After implant therapy, the portion eddy current would occur between the implant and crown because their electrochemical potentials are different. However, the phenomenon will give rise to physical discomfort or implant pitting. Therefore, the present studies are focus to analyze the electrochemical potentials and surface structure of G5 Ti implant and crown made of Pd-37.7Ag (Alloy A), Au-24.90Pd-19Ag (Alloy B), Au-8.5%Pt (Alloy C) or Ni-25%Cr (Alloy D). In the artificial saliva, the electrochemical potentials of alloy A, B, C, D and G5 Ti are 0.12, 0.04, 0.02, -0.46 and -0.32 eV, respectively. Meanwhile, the electrochemical potential of crown will be better if crown contains higher Pd element. The deviation of electrochemical potential between Alloy A-D crown and G5 Ti implant is 0.44, 0.36, 0.34 and -0.14, respectively. Additionally, the characteristic of surface morphology is also shown the same result. It is noted that the deviations of electrochemical potential between Alloy A-C crown and G5 implant are all positive. That means that G5 Ti implant would be anode during implant therapy resulting to corrosion. Moreover, the deviations of electrochemical potential between Alloy D crown and G5 implant is negative and smallest. It implies that G5 Ti implant would be cathode during implant therapy. And, the eddy current between G5 implant and Alloy D crown would be smallest resulting to cause lower physical discomfort or implant pitting. It also means that the Ni-25%Cr alloy is better choice to implant therapy.

**Biography**

Huey-Er Lee graduated from Kaohsiung Medical University, Now was working at KMU and KMU hospital as a professor and practitioner. Her expertise in prosthodontics(esp. in removable partial denture & complete denture), biomechanics and dental materials, She had been a Director, School of Dentistry (2003 ~ 2009) Dean, College of Dental Medicine(2013 ~ 2014) and Director, Department of Dentistry in KMU hospital.(2008 ~ 2013). She worked hard for improving the oral health, esthetics of people and educated the young people for improving knowledge, growing and maturity. She had made OSCE(Objective Structural Clinical Education) system for clerk and intern of dental student, and instructor of PGY(Post Graduate Year program) training system for resident.

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