

Name: Tzer-Min Lee

E-mail: tmlee@kmu.edu.tw

Tel: 886-7-312-1101 ext.2154#10



Education

| | | |
|-----|-----------|---|
| PhD | 1993-1998 | Materials Science and Engineering, National Cheng Kung University |
| MS | 1991-1993 | Materials Science and Engineering, National Cheng Kung University |
| BS | 1987-1991 | Materials Science and Engineering, National Cheng Kung University |

Current position and relevant experience

| | |
|-----------|---|
| 2015-date | Dean, College of Dental Medicine, Kaohsiung Medical University |
| 2015-date | Professor, School of Dentistry, College of Dental Medicine Kaohsiung Medical University |
| 2012-2015 | Vice Dean, College of Medicine, National Cheng Kung University |
| 2012-2015 | Deputy Director, Medical Device Innovation Center (MOE University Advancement), National Cheng Kung University |
| 2010-date | Professor, Institute of Oral Medicine, National Cheng Kung University |
| 2010-date | Professor, Institute of Biomedical Engineering, National Cheng Kung University |
| 2006-2010 | Associate Professor, Institute of Oral Medicine, National Cheng Kung University |
| 2003-2006 | Assistant Professor, Institute of Oral Medicine, National Cheng Kung University |

Specialty

1. Biomaterials
2. Artificial Implants
3. Medical Devices

Reference:

- [1] C. S. Chien, T. Y. Huang, T. Y. Liao, T. Y. Kuo, **T. M. Lee**, "Design and Development of a Solar Power-Assisted Manual/Electric Wheelchair", accepted by Journal of Rehabilitation Research & Development. [SCI]
- [2] C. S. Chien, Y. S. Ko, T. Y. Kuo, T. Y. Liao, H. C. Lin, **T. M. Lee**, T. F. Hong, "Surface properties and in vitro bioactivity of fluorapatite/TiO₂ coatings deposited on Ti substrates by Nd:YAG laser cladding", accepted by Journal of Medical and Biological Engineering. [SCI]

- [3] Y. T. Liu, K. C. Kung, C. Y. Yang, **T. M. Lee***, T. S. Lui, "Engineering three-dimensional structures using bio-inspired dopamine and strontium on titanium for biomedical application", *Journal of Materials Chemistry B*. 45, 7927-7935 (2014). [SCI]
- [4] J. K. Liu, I H. Liu, C. Liu, C. J. Chang, K. C. Kung, Y. T. Liu, **T. M. Lee***, J. L. Jou, "Effect of titanium nitride/titanium coatings on the stress corrosion of nickel-titanium orthodontic archwires in artificial saliva", *Applied Surface Science*. 317, 974–981 (2014). [SCI]
- [5] C. S. Chien, Y. S. Ke, T. Y. Kuo, T. Y. Liao, **T. M. Lee**, T. F. Hong, "Effect of TiO₂ addition on surface microstructure and bioactivity of fluorapatite coatings deposited using Nd:YAG laser", *Journal of Engineering in Medicine*. 228, 379-387 (2014). [SCI]
- [6] K. Yuan, Y. J. Chan, K. C. Kung, **T. M. Lee***, Comparison of Osseointegration on Various Implant Surfaces after Bacterial Contamination and Cleaning: A Rabbit Study, *The International Journal of Oral & Maxillofacial Implants*. 29, 32-40 (2014) [SCI]
- [7] C. S. Chien, T. Y. Liao, T. F. Hong, T. Y. Kuo, C. H. Chang, M. L. Yeh, **T. M. Lee**, "Surface microstructure and bioactivity of hydroxyapatite and fluorapatite coatings deposited on Ti-6Al-4V substrates using Nd-YAG laser", *Journal of Medical and Biological Engineering*. 34, 109-115 (2014) [SCI]
- [8] C. J. Chang, **T. M. Lee**, J. K. Liu, "The effect of bracket bevel design and oral environmental factors on frictional resistance", *The Angle Orthodontist*. 83, 956-65 (2013) [SCI]
- [9] Y.T. Liu, K. C. Kung, **T. M. Lee***, T. S. Lui, "Enhancing Biological Properties of Porous Coatings through the Incorporation of Manganese", *Journal of Alloys and Compounds*. 581, 459-467 (2013) [SCI]
- [10] Y. T. Liu, **T. M. Lee***, T. S. Lui, "Enhanced Osteoblastic Cell Response on Zirconia by Bio-Inspired Surface Modification", *Colloids and Surfaces B: Biointerfaces*. 106, 37-45 (2013) [SCI]
- [11] Y.T. Liu, K. C. Kung, **T. M. Lee***, T. S. Lui, "Characteristics and bioactivity of CaP porous coating with bio-inspired dopamine", *Key Engineering Materials*, 529-530, 233-236 (2013). [EI]
- [12] K. C. Kung, K. Yuan, T. M. Lee*, T. S. Lui, "Effect of heat treatment on microstructures and mechanical behavior of porous Sr-Ca-P coatings on titanium", *Journal of Alloys and Compounds*. 515, 68-73 (2012) [SCI]
- [13] S. P. Yang, C. Y. Yang, T. M. Lee*, T. S. Lui, "Effects of calcium-phosphate topography on osteoblast mechanobiology determined using a cytodetacher" *Materials Science & Engineering C*. 32, 254-262 (2012) [SCI]
- [14] K. C. Kung, **T. M. Lee***, T. S. Lui, Influence of strontium on in vitro bioactivity of heat-treated porous Ca-P ceramics on titanium for biomedical applications, *Key Engineering Materials*, 493-494, 453-457 (2012).
- [15] J. K. Liu, **T. M. Lee***, I. H. Liu, "Effect of loading force on the dissolution behavior and surface properties of nickel-titanium orthodontic archwires in artificial saliva, *American Journal of Orthodontics & Dentofacial Orthopedics* , 140, 166-176 (2011).
- [16] H. B. Chen, H. M. Hsu, J. K. Liu, **T. M. Lee**, "Bond Strengths of Fluoride-releasing Orthodontic Resins Using Plasma ARC and Halogen Lights", *Journal of the Taiwan Association of Orthodontists*, 23, 14-20 (2011).
- [17] C. S. Chien, Y. S. Ko, T. Y. Kuo, T. Y. Liao, T. F. Hong, **T. M .Lee**, "In vitro bioactivity test of FA added with TiO₂ of different phases coated on Ti-6Al-4V substrates by Nd-YAG laser cladding process", *Advanced Materials Research*, 287-290, 2225-2229 (2011).
- [18] C. C. Wang, M. C. Hsieh, and **T. M. Lee***, Effects of Nano-metric Roughness on Surface Properties and Fibroblast's Initial Cyto-compatibilities of Ti-6Al-4V, *Biointerphase*, 6, 87-97 (2011). [SCI]

- [19] C. C. Wang, M. C. Hsieh, S. P. Yang, P. K. Chuang, J. C. Lin, and **T. M. Lee***, Characteristics and cyto-compatibility of collagen/Ca-P coatings on Ti6Al4V substrate, *Surface and Coatings Technology*. 205, 4683-4689 (2011) [SCI]
- [20] S. P. Yang and **T. M. Lee***, "The effect of substrate topography on hFOB cell behavior and initial cell adhesion evaluated by a cytodetacher", *J. Mat. Med.: Mat. in Med.* 22, 1027-1036 (2011) [SCI]
- [21] C. S. Chien, T. Y. Liao, T. F. Hong, T. Y. Kuo, J. L. Wu, **T. M. Lee**, "Investigation into microstructural properties of fluorapatite Nd-YAG laser clad coating with PVA and WG binders", *Surface and Coatings Technology*. 205, 3141-3146 (2011) [SCI]
- [22] K. C. Kung, **T. M. Lee***, J. L. Chen, T. S. Lui, Characteristics and biological responses of novel coatings containing strontium by micro-arc oxidation, *Surface and Coatings Technology*. 205, 1714-1722 (2010) [SCI].
- [23] K. Yuan, **T. M. Lee**, J. S. Huang, "Temporomandibular joint (TMJ) Reconstruction: from alloplastic prosthesis to bioengineering tissue", *Journal of Medical and Biological Engineering*. 30, 65-72 (2010) [SCIE].
- [24] K. C. Kung, **T. M. Lee***, T. S. Lui,, "Bioactivity and corrosion properties of novel coatings containing strontium by micro-arc oxidation", *Journal of Alloys and Compounds*. 508, 384-390 (2010) [SCI].
- [25] C. Y. Yang, **T. M. Lee***, Y. Z. Lui, C. W. Yang, T. S. Lui, A. Kuo, B. W. Huang, The influence of plasma-sprayed parameters on the characteristics of fluorapatite coatings, *Journal of Medical and Biological Engineering*. 30, 91-98 (2010) [SCI].
- [26] Y. C. Wu, **T. M. Lee**, J. C. Lin, S. Y. Shaw, and C. Y. Yang, "Argon-plasma-treated chitosan: surface characterization and initial osteoblast attachment". *J. Biomat. Sci: Polym. E.* 21, 563-579 (2010). [SCI]
- [27] J. T. Lo, B. H. Chen, **T. M. Lee**, J. Han, S. S. Feng, J. L. Li, "Encapsulation of Paclitaxel by Self-Emulsifying O/W Formulations Prepared from Mixed Nonionic Surfactants", *Journal of Pharmaceutical Sciences*, 99:2320–2332 (2010) [SCI].
- [28] C. Y. Yang, C. W. Yang, L. R. Chen M. C. Wu, T. S. Lui, A. Kuo, and **T. M. Lee***, "Effect of vacuum heat treatment of plasma-sprayed hydroxyapatite coatings on their in vitro and in vivo biological responses", *Journal of Medical and Biological Engineering*. 29,296-303 (2009) [SCI].
- [29] C. S. Chang, **T. M. Lee**, J. K. Liu, C. H. Chang, "The effect of microrough surface treatment on miniscrews used as orthodontic anchors", *Clinical Oral Implant Research*. 20,1178-1184 (2009) [SCI].
- [30] Y. C. Wu, **T. M. Lee**, K. H. Chiu, S. Y. Shaw, and C. Y. Yang, "A comparative study of the physical and mechanical properties of three natural corals based on the criteria for bone-tissue engineering scaffolds", *J. Mat. Sci.: Mat. in Med.* 20, 1273-1280 (2009) [SCI]
- [31] C. C. Wang, Y. C. Hsu, F. C. Su, S. C. Lu, and **T. M. Lee***, "Effects of Passivation Treatments on Titanium Alloy with Nano-metric Scale Roughness and Induced Changes in Fibroblast Initial Adhesion Evaluated by a Cytodetacher", *J. Biomed. Mater. Res.* 88A, 370-387 (2009) [SCI]
- [32] C. C. Wang, Y. C. Hsu, M. C. Hsieh, S. P. Yang, F. C. Su, and **T. M. Lee***, "Effects of nano-surface properties on initial osteoblast adhesion and Ca/P adsorption ability for titanium alloys", *Nanotechnology*. 19, 335709-18 (2008) [SCI]
- [33] I. H. Liu, **T. M. Lee***, C. Y. Chang, C. K. Liu, "Effect of Load Deflection on Corrosion Behavior of NiTi Wire" *Journal of Dental Research*. 86(6), 539-543 (2007). [SCI]
- [34] C. Y. Yang, **T. M. Lee***, C. W. Yang, L. R. Chen, M. C. Wu, and T. S. Lui, "The in vitro and in vivo biological responses of plasma-sprayed hydroxyapatite coatings with post-hydrothermal treatment", *J. Biomed. Mater. Res.* 83A, 263-271 (2007). [SCI]

- [35] C. Y. Yang, C. R. Chen, E. Chang , and **T. M. Lee***, "Characteristics of Hydroxyapatite Coated Titanium Porous Coatings on Ti-6Al-4V Substrates by Plasma Sprayed Method", *J. Biomed. Mater. Res.* 82B, 450-459 (2007). [SCI]
- [36] C. W. Yang, **T. M. Lee**, T. S. Lui and E. Chang, "Effect of Post Vacuum Heating on the Microstructural Feature and Bonding Strength of Plasma-Sprayed Hydroxyapatite Coatings", *Materials Science & Engineering C*, 26, 1395-1400 (2006). [SCI]
- [37] **T. M. Lee***, E. Chang, C. H. Yeh, "Microstructure and Corrosion Behavior of Porous Coatings on Titanium alloy by Vacuum-Brazed Method", *J. Biomed. Mater. Res.* 77B, 369-377 (2006). [SCI]
- [38] **T. M. Lee***, "Effect of Passivation and Surface Modification on the Dissolution Behavior and Nano-Surface Characteristics of Ti-6Al-4V in Hank/EDTA Solution" *J. Mat. Sci.: Mat. in Med.* 17, 15-27 (2006). [SCI]
- [39] Y. C. Wu, S. Y. Shaw, H. R. Lin, **T. M. Lee**, and C. Y. Yang, "Bone Tissue Engineering Evaluation Based on Rat Calvaria Stromal Cells Cultured on Modified PLGA Scaffolds", *Biomaterials*, 27, 896-904 (2006). [SCI]
- [40] C. W. Yang, **T. M. Lee**, T. S. Lui and E. Chang, "A Comparison of the Microstructural Feature and Bonding Strength of Plasma-Sprayed Hydroxyapatite Coatings with Hydrothermal and Vacuum Post-Heat Treatment" *Materials Transactions (JIM)*, 46, 709-715 (2005). [SCI]
- [41] **T. M. Lee***, C. Y. Yang, E. Chang and R. S. Tsai, "Comparison of Plasma-Sprayed Hydroxyapatite Coatings and Zirconia-reinforced Hydroxyapatite Composite Coatings: *In Vivo* Study" *J. Biomed. Mater. Res.*, 71A, 652-660 (2004).[SCI]
- [42] C. W. Yang, T. S. Lui, **T. M. Lee** and E. Chang, "Effect of Hydrothermal Treatment on Microstructure Feature and Bonding Strength of Plasma-Sprayed Hydroxyapatite on Ti-6Al-4V" *Materials Transactions*, 45, 2922-2929 (2004). [SCI]
- [43] **T. M. Lee**, C. Y. Yang and E. Chang, "Attachment and Proliferation of Neonatal Rat Calvarial Osteoblasts on Ti-6Al-4V: Effect of Surface Chemistries of the Alloy" *Biomaterials*, 25, 23-32 (2004). [SCI]
- [44] **T. M. Lee**, R. S. Tsai, E. Chang, C. Y. Yang and M. R. Yang, "The Cell Attachment and Morphology of Neonatal Rat Calvarial Osteoblasts on the Surface of Ti-6Al-4V and Plasma-Sprayed HA Coating: Effect of Surface Roughness and Serum Contents" *J. Mat. Med.: Mat. in Med.*, , 13, 341-350 (2002). [SCI]
- [45] E. Chang and **T. M. Lee**, "Effect of Surface Chemistries and Characteristics of Ti6Al4V on the Ca and P Adsorption and Ion Dissolution in Hank's EDTA solution", *Biomaterials*, 23, 2917-2925 (2002). [SCI]
- [46] **T. M. Lee**, R. S. Tsai, E. Chang, C. Y. Yang and M. R. Yang, "Biological Responses of Neonatal Rat Calvarial Osteoblasts on Plasma-Sprayed HA/ZrO₂ Composite Coating" *J. Mat. Med.: Mat. in Med.*, 13, 281-287 (2002). [SCI]
- [47] **T. M. Lee***, B. C. Wang, Y. C. Yang, E. Chang and C. Y. Yang, "Comparison of Plasma-Sprayed Hydroxyapatite Coatings and Hydroxyapatite/Tricalcium Phosphate Composite Coatings: *In Vivo* Study" *J. Biomed. Mater. Res.*, 55, 360-367 (2001).[SCI]
- [48] **T. M. Lee***, C. Y. Yang and E. Chang, "A Comparison of the Surface Characteristics and Ion Release of Ti6Al4V and Heat-Treated Ti6Al4V" *J. Biomed. Mater. Res.*, 50, 499-511 (2000).[SCI]
- [49] **T. M. Lee**, C. Y. Yang and E. Chang, "Effect of Passivation on the Dissolution Behavior of Ti6Al4V and Vacuum-Brazed Ti6Al4V in Hank/EDTA Solution. Part I: Ion Release" *J. Mat. Sci.: Mat. in Med.*, 10, 541-548 (1999).[SCI]
- [50] **T. M. Lee**, E. Chang, and C. Y. Yang, "A Comparison of Corrosion Behavior and Surface Characteristics of Vacuum-brazed and Heat-treated Ti6Al4V Alloy" *J. Mat. Sci.: Mat. in Med.*, 9, 429-437 (1998).[SCI]
- [51] **T. M. Lee**, E. Chang, and C. Y. Yang, "Surface Characteristics of Ti6Al4V Alloy: Effect of Materials, Passivation and Autoclaving" *J. Mat. Sci.: Mat in Med.*, 9, 439-448 (1998).[SCI]

- [52] C. Y. Yang, R. M. Lin, B. C. Wang, **T. M. Lee**, E. Chang, Y. S. Hang, and P. Q. Chen, “*In Vitro and in Vivo Mechanical Evaluations of Plasma-Sprayed Hydroxyapatite Coatings on Titanium Implants: The Effect of Coating Characteristice*”, *J. Biomed. Mater. Res.* 37, 335-345 (1997).[SCI]
- [53] C. Y. Yang, B. C. Wang, **T. M. Lee**, E. Chang, and G. L. Chang, “*Intramedullary Implant of Plasma-Sprayed Hydroxyapatite Coating: An interface Study*”, *J. Biomed. Mater. Res.* 36, 39-48 (1997).[SCI]
- [54] **T. M. Lee**, E. Chang, B. C. Wang, and C. Y. Yang, “*Characteristics of Plasma-Sprayed Bioactive Glass Coatings on Ti-6Al-4V Alloy: An in Vitro Study*”, *Surface and Coatings Technology*, 79, 170-177 (1996).[SCI]
- [55] B. C. Wang, E. Chang, **T. M. Lee**, and C. Y. Yang, “*Changes in phase and Crystallinity of Plasma-Ssprayed Hydroxyapatite Coatings under Heat Treatment: A Quantitative Study*” *J. Biomed. Mater. Res.* 29, 1483-1492 (1995).[SCI]
- [56] B. C. Wang, **T. M. Lee**, E. Chang, and C. Y. Yang, “*The Shear Strength and the Failure Mode of Plasma-Sprayed Hydroxyapatite Coating to Bone: The Effect of Coating Thickness*”, *J. Biomed. Mater. Res.*, 27, 1315-1327 (1993).[SCI]
- [57] B. C. Wang, **T. M. Lee**, E. Chang, C. Y. Yang, “*The Effect of Coating Thickness on the Shearing Strength and Failure Mode of Plasma Sprayed Hydroxyapatite Coatings to Bone*”, *Biomedical Engineering, Application, Basis, Communication*, 4(6), 605-609 (1992).[EI]
- [58] **T. M. Lee**, E. Chang, B. C. Wang, C. Y. Yang, W. J. Chang, “*Characteristics and Biological Responses of Plasma-Sprayed Porous Titanium Coatings*”, *Welding and Cutting*, 8(1), 59-68 (1998).
- [59] **T. M. Lee**, E. Chang, B. C. Wang, C. Y. Yang, “*Characteristics and Biological Responses of Plasma-sprayed Hydroxyapatite Coatings*”, *Welding and Cutting*, 7(6), 63-75 (1997).
- [60] **T. M Lee**, R. S. Tsai, E. Chang, K. A. Lai, C. Y. Yang, and H. Y. Huang, “*Biocompatibility of ZrO₂/ HA Composite Coating*”, *J Orth Surg R.O.C.*, 14, 15-22 (1997).
- [61] C. Y. Yang , B. C. Wang, **T. M. Lee**, E. Chang, “*Bonding Evaluation of Plasma Sprayed Hydroxyapatite Coating on Titanium Alloy*”, *Chinese J of Medical and Biological Engineering*, 11(3), 197-208 (1991).