王志光（Chih-Kuang Wang）
電話：073121101 分機 2677；Email：ckwang@kmu.edu.tw

現職：2014/08~迄今 高雄醫學大學 醫藥暨應用化學系 教授
2021/09~迄今 高雄醫學大學 產學營運處 產學長

學歷：1998 成功大學 材料科學暨工程學系 博士
1992 成功大學 材料科學暨工程學系 碩士
1990 逢甲大學 材料科學與工程系學士

經歷：2017/08~2021/08 高雄醫學大學 產學營運處 產學組 組長
2016/02~2017/07 高雄醫學大學 產學營運處 創新育成中心 主任
2015/01~2016/01 高雄醫學大學 產學營運處 產學組 組長
2011~2012 高雄醫學大學 生命科學院 綜合組組長
2009/08～2014/07 高雄醫學大學 醫藥暨應用化學系 副教授
2003/09～2009/07 高雄醫學大學 醫藥暨應用化學系 助理教授
1998～2003 工業研究院 工業材料研究所 研究員
1995/7-1995/9 美國西北大學材料科學與工程系/材料研究中心博士生短期研究。

研究興趣與領域：

1. 用於骨、軟骨組織工程的新型支架生物材料的設計與製造
2. 用於藥物傳遞之微奈米載體系統
3. 3D 積層製造生物陶瓷應用於客製化/個人化醫療骨植入物。
4. 3D 生物列印之墨水的設計與開發用於軟骨組織工程的再生研究。

榮譽：

1. 100~104、106-108 年度科技部補助大專校院獎勵特殊優秀人才。
2. Chih-Kuang Wang, Tien-Ching Lee, Yan-Hsiung Wang, Shih-Hao Huang, Mei-Ling Ho, Yin-Chih Fu*, In vivo Evaluations of the Clinical Grade Bone Substitute Combined Simvastatin Carriers on Enhance Bone Growth, 2015 SEMBA 生醫工

程應用研討會, 2015 年 01 月 31 日, 蓮潭會館, 高雄市, 中華民國。(王志光 教授 口頭發表最佳論文獎)。

3. 第十三屆國家新創獎、學研新創獎: 王志光、何美泠、傅尹志、王國照、張瑞根、陳崇桓、潘力誠, 創新陶瓷積層製造技術, 社團法人國家生技醫療產業策進會, 2016/12/22。
4. 王志光 演講者， 積層陶瓷製造應用於骨科重建, 先端 3D 列印技術於客製化醫材應用研討會, 高雄科學園區, 20171211。
5. Chih-Kuang Wang, Section Chair and Speaker, 3D bioceramic scaffolds fabricated using negative thermo-responsive hydrogels for promoting bone formation in calvarial defect, 2017 International Symposium of Materials on Regeneration Medicine, Aug. 23-26, Taoyunan, Taiwan.
6. 負溫感水膠積層製造 3D 陶瓷物品的方法，榮獲科技部「2018 台灣創新技術博覽會-創新發明獎)
7. 第十六屆國家新創獎、學研新創精進獎: 王志光、李之昀、李宜蓁、鄭宇荃、劉哲維、林哲緯, 創新陶瓷積層製造技術, 社團法人國家生技醫療產業策進會, 2019/12/06。
8. 第十七屆國家新創獎、學研新創精進獎: 王志光、陳崇桓、林松彥、蘇裕峯、李之昀、李宜蓁、鄭宇荃、劉哲維、林哲緯、賴衍翰, 創新陶瓷積層製造技術, 社團法人國家生技醫療產業策進會, 2020/12/01。
9. 109-2 品醫生技團隊榮獲 FITI 創業傑出獎(200 萬): 林哲緯、李之昀、李宜蓁、鄭宇荃、賴衍翰, 科技部, 2020/11/27. (王志光 教授技術發明人為指導老師)
10. 2021 年 8 月 12 日 品醫生技團隊以"積層製造 3D 生物陶瓷顱骨鑽孔蓋骨移植替代物"榮獲科技部生醫研發加值計畫「育苗專案計畫」複審通過。預計 2021 年 12 月執行計畫，為期 22 個月。

主要研究成果:

01. 國科會發展出微米藥物載體系統(PLGA/HAp microsphere)加入高醫骨研中心的合作的學界 科專計劃，已獲得 2 件中華民國專利與 2 件美國專利：此藥物載體可攜帶油溶性藥物，本團隊委託台灣東洋藥廠進行 GMP-like 之 Simvastin/PLGA/HAp 微米複合載體製程放大開 發，使其具有局部緩釋寸進骨生長 simvastatin 的用途，並於 104 年 9 月與和康生技股份有 限公司進行產學合作計畫與全程技轉金 650 萬。此外相關 BMP-2/HAp/PLGA 載體專利，也於 105 年與博晟生技公司進行產學合作計畫，評估公司促進骨生長 OIF growth factor 產品的緩釋製劑於小鼠的骨癒合療效，結果除了具有緩釋的能力與促進骨生長效果外且無發炎反應，公司正在評估技轉需求與後續的衍伸大動物評估。相關學術論文有四篇(**1.** Optimized bone regeneration based on sustained release from three-dimensional fibrous PLGA/HAp composite scaffolds loaded with BMP-2, Biotech & Bioeng, 99: 996-1006, 2008. **2.** Controlled release carrier of BSA made by W/O/W emulsion method containing PLGA and hydroxyapatite, J Control Release, 128: 142-148, 2008. **3.** Preparation of porous bioceramics using reverse thermo-responsive hydrogels in combination with rhBMP-2 carriers: *In Vitro* and *In Vivo* evaluation, J Mechanl Behav Biomed Mater, 27:64-76, 2013. 4. Local delivery of controlled-release simvastatin/PLGA/HAp microspheres enhances bone repair, Internat J Nanomed, 8:3895-3905, 2013.)

02. 主持人於國科會發展出負溫感水膠系統加入高醫骨研中心的合作的學界科專計劃：發展出以”負溫感水膠應用在製備多孔性生物陶瓷支架”的新製程。此新製程可簡易地經常壓攪拌過程與燒結製造出均勻性良好且具高孔性度性(~65%)與機械性(>4~7 MPa)的多孔性生物陶瓷，並已獲得中華民國專利與美國專利(中華民國專利號：I411595 與美國專利號：US 8940203 B2)。 此外 102 年已接受一篇國際期刊: J Mech Behav Biomed Mater, 27:64-76, 2013. (IF:3.048 at 2013; 19.4%)。本方法可製備較具機械性的高度多孔性生物陶瓷，藉由此技術將與奈米藥物載體結合進行含藥性骨材開發，也已申請新專利中(臺灣發明專利第 106116285 號)並尋求相關廠商進行技轉評估。目前也正在撰寫 SCI 論文中。此外，也運用發展此負溫感水膠均壓收縮的特性，真空混合陶瓷粉末進行三維積層陶瓷擠出列印的成型技術開發，並於 2017 年 11 月 22 日已獲得台灣專利(申請號 105139918)，同時也布局全球市場專利(PCT/CN2016/ 108373, Dec 2, 2016；美國、中國、歐洲、日本)。此 3D 陶瓷積層技術也將結合自主開發 3D 積層列印機台(國研院儀科中心已協助完成原型機)，預計 spin in 或技轉給相關醫材廠商。故未來產業應用如，顱面骨修復、脛骨校正切骨與植牙之全瓷牙冠等等。本技術 2016 年獲得**第十三屆國家新創獎、學研新創獎**(創新陶瓷積層製造技術, 社團法人國家生技醫療產業策進會, 105/12/22)、**2018 年獲得科技部-台灣創新技術博覽會-創新發明獎與**高雄醫學大學**第七屆校園創業競賽創業組第二名**, 3D 骨力全開-3D 生物列印技術進行齒槽, 2018/06/01-2018/11/30.。109 年團隊更進一步開發光固化負溫感水膠陶瓷漿體的製程技術可獲得更精密與複雜的陶瓷結構元件，並已佈局美國臨時案(62/798,481; 2019/01/30)，並以此上拉式光固化技術正與晟德集團子公司博晟生醫進行產學合作計畫(負溫感水膠輔助 3D 列印生物陶瓷技術開發軟骨栓的骨接觸區域；80 萬)，以驗證其骨支架的機械性質與生物安全性。

03. 個人參與高醫骨研中心在學界科專研究經驗中：進行了三期學界科專研究(至目前已執行共11 年)，建立了產學合作、智財申請、技術轉移等研發產品的機制，匯集了能量以及落實了轉譯醫學的目標。104年已完成1 件技術移轉給**和康生技公司(全期非專屬授權技轉金600萬，本人貢獻度25%)**，106年與高醫骨研團隊共同完成另一件技術移轉給**華醫康公司(全期1.2億元授權金技轉金，本人貢獻度5%)**。

04. 主持人於科技部積層製造陶瓷技術開發的整合型計畫成果，105-106 兩年的成果已證明技術商品化的臨床應用潛力，本技術也與國研院儀科中心合作，開發專屬的 3D 生物列印機台，以利 107-108 年進行臨床應用的使用的測試與驗證。108 第一季目前已有合作廠商洽談產學合作開發公司的骨材產品，預期可技轉給國內醫材公司或與創投進行新創公司的媒合。最終期望此一技術可造福傷患的健康。(相關產學計畫有 1: 負溫感水膠輔助 3D 列印生物陶瓷技術開發軟骨栓的骨接觸區域, 高雄醫學大學－博晟生醫股份有限公司 產學合作計畫。2. 漸層色系之全瓷材料物化性分析計畫, 高雄醫學大學－棕懋公司產學合作計畫, 2016/06/16 至 2017/01/30 (S-S104021 450,000 NT)。(主持人) 3. 緩釋型骨生長因子載體之確效評估, 高雄醫學大學－博晟生醫產學合作計畫, 2016/09/01 至 2017/04/30 (1,200,000 NT)。(共同主持人)

國際期刊 (*: Corresponding author)

05. Chih-Kuang Wang, Jiin-Huey Chern Lin*, Chien-Ping Ju, Hong Choon Ong and Robert P. H. Chang, "Structural characterization of pulsed laser-deposited hydroxyapatite on titanium substrate", **Biomaterials**, 18:1331-1338, 1997. (IF: 7.604 at 2012, ranking:3/79=3.9% in ENGINEERING, BIOMEDICA)
06. Chih-Kuang Wang, Jiin-Huey Chern Lin, Chien-Ping Ju*, Effect of doped bioactive glass on structure and properties of sintered hydroxyapatite, **Materials Chemistry and Physics**, 53:138-149, 1998. (IF: 2.072 at 2012 ; ranking:61/241=25.3% in MATERIALS SCIENCE, MULTIDISCIPLINARY) (IF: 2.234 at 2011)
07. Chien-Ping Ju*, Chih-Kuang Wang, Hung-Yih Cheng, Jiin-Huey Chern Lin, Process and Wear Behavior of Monolithic SiC and Short Carbon Fiber-SiC Matrix Composite, **Journal of Materials Science**, 35: 4477-4484, 2000. (IF: 2.163 at 2012 ; ranking: 58/241=24.06% in MATERIALS SCIENCE, MULTIDISCIPLINARY)
08. Yi-Pang Lee, Chih-Kuang Wang, Tsui-Hsien Huang, Chun-Cheng Chen, Chia-Tze Kao, Shinn-Jyh Ding*, In Vitro characterization of postheat-treated plasma-sprayed hydroxyapatite coatings, **Surface and Coatings Technology**, 197: 367–374, 2005. (IF: 1.941 at 2012 ; ranking:3/17=17.64% in MATERIALS SCIENCE, COATINGS & FILMS)
09. Y.C. Fu, M.L. Ho, S.C. Wu, H.S. Hsieh, C.K. Wang*, Porous bioceramic bead prepared by calcium phosphate with sodium alginate gel and PE powder, **Materials Science and Engineering C**, 28: 1149-1158, 2008. (IF: 3.420 at 2015 ; ranking:12/33=36.3% in **MATERIALS SCIENCE, BIOMATERIALS**)
10. Y.C. Fu, H. Nie, M.L. Ho, C.K. Wang, C.H. Wang*, Optimized bone regeneration based on sustained release from three-dimensional fibrous PLGA/HAp composite scaffolds loaded with BMP-2, **Biotechnology & Bioengineering**, 99: 996-1006, 2008. (IF: 4.243 at 2015 ; ranking:24/161=14.9% in BIOTECHNOLOGY & APPLIED MICROBIOLOGY)
11. Mei-Ling Ho, Yin-Chih Fu, Gwo-Jaw Wang, Hui Ting Chen, Je-Ken Chang, Tsung Hsien Tsai, Chih-Kuang Wang*, Controlled release carrier of BSA made by W/O/W emulsion method containing PLGA and hydroxyapatite, **Journal of Controlled Release**, 128: 142-148, 2008. (IF:7.441 at 2015; ranking:9/253=3.5% in **PHARMACOLOGY & PHARMACY**)
12. W.C. Chen, C.C. Hung, Y.C. Huang, **C.K. Wang** and J.C. Wang*, Fracture load of provisional fixed partial dentures with long-span fiber-reinforced acrylic resin and thermocycling, **Journal of Dental Sciences,** 4: 25-31, 2009. (IF: 4.602 at 2015 ; ranking:2/89=2.2% in DENTISTRY, ORAL SURGERY & MEDICINE)
13. B.H. Chen, K.I. Chen, M.L. Ho, H.N. Chen, W.C. Chen, C.K. Wang*, Synthesis

of calcium phosphates and porous hydroxyapatite beads prepared by emulsion method, **Materials Chemistry and Physics**, 113: 365-371, 2009. (IF: 2.101 at 2015 ; ranking: 97/271=35.7% in MATERIALS SCIENCE, MULTIDISCIPLINARY)

14. **C.K. Wang**, S.H. Chen, W.Y. Li, C.H. Lai and W.C. Chen*, Bioactive glass shell growth of a Si–Na–Ca–P layer on gold nanoparticles functionalized with mercaptopropyltrimethyloxysilane- silicate-tetraethylothosilicate", **Surface Review and Letters** 16: 37–42, 2009. (IF:0.435 at 2015; ranking:64/67=95.5% in PHYSICS, CONDENSED MATTER)
15. H. Nie, M.L. Ho, **C.K. Wang**, C.H. Wang, Y.C. Fu*, BMP-2 plasmid loaded PLGA/HAp composite scaffolds for treatment of bone defects in nude mice, **Biomaterials** 30: 892–901, 2009. (IF: 8.387 at 2015, ranking:2/76=2.6% in ENGINEERING, BIOMEDICA)
16. J.K. Chang, C.J. Li, H.J. Liao, **C.K. Wang**, G.J. Wang, M.L. Ho*, "Anti-inflammatory drugs suppress proliferation and induce apoptosis through altering expressions of cell cycle regulators pro-apoptotic factors in cultured human osteoblasts, **Toxicology** 258: 148–156, 2009. (IF:3.817 at 2015 ; ranking: 13/89=14.6% in TOXICOLOGY)
17. C.H. Tseng, Y.L. Chen, C.M. Lu, **C.K. Wang**, Y.T. Tsai, R.W. Lin, C.F. Chen, Y.F. Chang, G.J. Wang, M.L. Ho, and C.C. Tzeng*, Synthesis and Anti-osteoporotic Evaluation of Certain 3-Amino-2-hydroxypropoxyisoflavone Derivatives, **European Journal of Medicinal Chemistry** 44:3621-3626, 2009. (IF:3.902 at 2015 ; ranking: 6/59=10.1% in Chemistry, Medicinal)
18. **Chih-Kuang Wang**, Mei-Ling Ho, Gwo-Jaw Wang, Je-Ken Chang, Chung-Hwan Chen, Yin-Chih Fu*, Hwai-Hui Fu, Controlled-release of rhBMP-2 carriers in the regeneration of osteonecrotic bone, **Biomaterials** 30: 4178–4186, 2009. (IF: 8.387 at 2015, ranking:2/76=2.6% in ENGINEERING, BIOMEDICA)
19. **Chih-Kuang Wang**, Chau-Zen Wang, Jen-Chyan Wang, Chun-Cheng Hung, Wan-Yun Li, Wen-Cheng Chen*, Preparation and characterization of calcium phosphate deposited on gold nanoparticles, **Journal of Non-Crystalline Solids**, 356:927-932, 2010. (IF: 1.825 at 2015, ranking:5/27=18.5% in MATERIALS SCIENCE, CERAMICS)
20. Shun-Cheng Wu, Chung-Hwan Chen, Je-Ken Chang, Yin-Chih Fu, **Chih-Kuang Wang**, Rajalakshmanan Eswaramoorthy, Yi-Shan Lin, Yao-Hsien Wang, Sung-Yen Lin, Gwo-Jaw Wang, Mei-Ling Ho*, Hyaluronan initiates chondrogenesis mainly via CD44 in human adipose derived stem cells, **Journal of Applied Physiology**, 114:1610-1618, 2013) (IF:3.004 at 2015, ranking:12/82=14.6% in SPORT SCIENCES)
21. Chung-Hwan Chen, Yi-Shan Lin, Yin-Chih Fu, **Chih-Kuang Wang**, Shun-Cheng Wu, Gwo-Jaw Wang, Rajalakshmanan Eswaramoorthy,Yan-Hsiung Wang, Chau-

Zen Wang, Yao-Hsien Wang, Sung-Yen Lin, Je-Ken Chang*, Mei-Ling Ho*, Electromagnetic fields enhance chondrogenesis of human adipose-derived stem cells in a chondrogenic microenvironment in vitro. **Journal of Applied Physiology**, 114:647-655, 2013. (IF:3.004 at 2015, ranking:12/82=14.6% in SPORT SCIENCES)

22. Pei-Chien Tsai, Chi-Ying Hsieh, Chien-Chih Chiu, **Chih-Kuang Wang**, Long-Sen Chang, Shinne-Ren Lin*, Cardiotoxin III suppresses MDA-MB-231 cell metastasis through the inhibition of EGF/EGFR-mediated signaling pathway, **Toxicon**, 60:734-43. 2012. (IF:2.309 at 2015, ranking:129/253=50.9% in PHARMACOLOGY & PHARMACY)
23. Yin-Chih Fu, Mei-Ling Ho, Gwo-Jaw Wang, **Chih-Kuang Wang**, Controlled-release biodegradable hap in large bone defect nonunion study (in vitro and in vivo), Bone, Volume 48, Supplement 2, Page S172, May 7, 2011.
24. Po-Len Liu, Jong-Rung Tsai, Chien-Chih Chiu, Jhi-Jhu Hwang, Shah-Hwa Chou, **Chih-Kuang Wang**, Shu-Jing Wu, Yuh-Lien Chen, Wen-Chi Chen, Yung-Hsiang Chen,* Inn-Wen Chong*, Decreased expression of thrombomodulin is correlated with tumor cell invasiveness and poor prognosis in nonsmall cell lung cancer, **Molecular Carcinogenesis**, 49:874-881, 2010. (IF:4.722 at 2015, ranking:42/213=19.7% in ONCOLOGY)
25. Chau-Zen Wang, Shih-Mao Chen, Chung-Hwan Chen, **Chih-Kuang Wang**, Gwo-Jaw Wang, Je-Ken Chang, Mei-Ling Ho*, The effect of the local delivery of alendronate on human adipose-derived stem cell-based bone regeneration, **Biomaterials**, 31:8674-8683, 2010. (IF: 8.387 at 2015, ranking:2/76=2.6% in ENGINEERING, BIOMEDICA)
26. Rajalakshmanan Eswaramoorthy, **Chih-Kuang Wang**, Wen-Cheng Chen, Ming-Jer Tang, Mei-Ling Ho, Chi-Ching Hwang, Hui-Min Wang, Chau-Zen Wang*, DDR1 regulates the stabilization of cell surface E-Cadherin and E-Cadherin-mediated cell aggregation, **Journal of Cellular Physiology**, 224:387-397 , 2010. (IF: 4.155 at 2015, ranking:12/83=14.4% in PHYSIOLOGY)
27. Jen-Chyan Wang, Chia-Ling Ko, Chun-Cheng Hung, Yu-Chang Tyan, Chern-Hsiung Lai, Wen-Cheng Chen*, **Chih-Kuang Wang**, Deriving fast setting properties of tetracalcium phosphate/dicalcium phosphate anhydrous bone cement with nanocrystallites on the reactant surfaces, **Journal of Dentistry**, 38:158-165, 2010. (IF:3.109 at 2015, ranking: 8/82 =9.7 % in DENTISTRY, ORAL SURGERY & MEDICINE)
28. Shun-Cheng Wu, Je-Ken Chang, **Chih-Kuang Wang**, Gwo-Jaw Wang, Mei-Ling Ho*, Enhancement of chondrogenesis of human adipose derived stem cells in a hyaluronan-enriched microenvironment, **Biomaterials**, 31:631-640, 2010. (IF: 8.387 at 2015, ranking:2/76=2.6% in ENGINEERING, BIOMEDICA)
29. Yu-Chang Tyan*, Ming-Hui Yang, Shiang-Bin Jong, **Chih-Kuang Wang**, Jentaie

Shiea, Melamine contamination, **Analytical and Bioanalytical Chemistry**, 395:729–735, 2009. (IF: 3.125 at 2015, ranking:15/75=20% in Chemistry, analytical)

30. C.C. Chiu*, H.W. Chang, D.W. Chuang, F.R. Chang, Y.C. Chang, Y.S. Cheng, S.S. Lee, **C.K. Wang**, Jeff Y.F. Chen, Y.C. Liu, Y.C. Wu, Fern plant-derived protoapigenone leads to DNA damage, apoptosis and G2/M, arrest in lung cancer cell line H1299, **DNA and Cell Biology**, 28:501-506, 2009. (IF:2.072 at 2011 ; ranking:101/157= 64.33% in GENETICS & HEREDITY)
31. **Chau-Zen** Wang, Mei**-Ling Ho, Wen-Cheng Chen, Chien-Chih Chiu, Yung-Li Hung, Chih-Kuang Wang*, Shun-Cheng Wu**, Characterization and enhancement of chondrogenesis in porous hyaluronic acid-modified scaffolds made of PLGA(75/25) blended with PEI-grafted PLGA(50/50), **Materials Science and Engineering C** -Materials for Biological Applications, 31:1343-1351, 2011. (IF: 3.420 at 2015, ranking:12/33=36.3% in MATERIALS SCIENCE, BIOMATERIALS)
32. Szu-Hsien Chen, Ching-Ting Tsao, Chih-Hao Chang, Yao-Ming Wu, Zheng-Wei Liu, Chun-Pin Lin, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Synthesis and characterization of thermal-responsive chitin-based polyurethane copolymer as a smart material**, Carbohydrate Polymers**, 88:1483-1487, 2012. (IF: 4.219 at 2015, ranking:5/71=7.0% in **CHEMISTRY, APPLIED**)
33. Szu-Hsien Chen, Ching-Ting Tsao, Chih-Hao Chang, Yi-Ting Lai, Ming-Fung Wu, Zheng-Wei Liu, Ching-Nan Chuang, Hung-Chia Chou, **Chih-Kuang Wang***, Kuo-Haung Hsieh*, Synthesis and characterization of reinforced poly(ethylene glycol) chitosan-Hydrogel as wound dressing materials, **Macromolecular Materials and Engineering**, 298:429-438, 2013. (IF:2.863 at 2016, ranking:60/271=22.1% in MATERIALS SCIENCE, MULTIDISCIPLINARY)
34. Szu-Hsien Chen, Ching-Ting Tsao, Hung-Chia Chou, Chih-Hao Chang, Ching-Te Hsu, Ching-Nan Chuang, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Synthesis of poly (lactic acid)-based polyurethanes, **Polymer International**, 62:1159-1168, 2013. (IF:2.414 at 2015, ranking:25/82=30.4% in POLYMER SCIENCE)
35. Szu-Hsien Chen, Ching-Ting Tsao, Chih-Hao Chang, Yi-Ting Lai, Ming-Fung Wu, Ching-Nan Chuang, Hung-Chia Chou, **Chih-Kuang Wang***, Kuo-Haung Hsieh*, Assessment of reinforced poly(ethylene glycol) chitosan hydrogels as dressings in a mouse skin wound defect model**, Materials Science & Engineering C-Materials for Biological Applications**, 33:2584-2594, 2013. (IF: 4.164 at 2016, ranking:9/33=27.2% in MATERIALS SCIENCE, BIOMATERIALS)
36. Chi-Hung Lee, Szu-Hsien Chen, Yen-Zen Wang, Chao-Chien Lin, Chih-Kai Huang, Ching-Nan Chuang, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Preparation and characterization of proton exchange membranes based on semi-interpenetrating sulfonated poly(imide-siloxane)/epoxy polymer networks, **Energy** 55:905-915, 2013)

(IF:4.292 at 2015, ranking:3/58=5.1% in THERMODYNAMICS)

37. Yin-Chih Fu, Chung-Hwan Chen, **Chau-Zen** Wang, Yan-Hsiung Wang, Je-Ken Chang, Gwo-Jaw Wang, Mei-Ling Ho*, **Chih-Kuang Wang***, Preparation of porous bioceramics using reverse thermo-responsive hydrogels in combination with rhBMP-2 carriers: *In Vitro* and *In Vivo* evaluation, **Journal of the Mechanical Behavior of Biomedical Materials**, 27:64-76, 2013. (IF:3.372 at 2019, ranking:27/87=31.03% in ENGINEERING, BIOMEDICAL)
38. I-Chun Tai, Yin-Chih Fu, **Chih-Kuang Wang**, Je-Ken Chang, Mei-Ling Ho*, Local delivery of controlled-release simvastatin/PLGA/HAp microspheres enhances bone repair, **International Journal of Nanomedicine**, 8:3895-3905, 2013. (IF:4.320 at 2015, ranking:40/253=15.8%; in PHARMACOLOGY & PHARMACY)
39. Yan-Hsiung Wang, Yin-Chih Fu, Hui-Chi Chiu, **Chau-Zen** Wang, Shao-Ping Lo, Mei-Lin Ho, Po-Len Liu, **Chih-Kuang Wang***, Cationic nanoparticles with quaternary ammonium functionalized PLGA-PEG-based copolymers for potent gene transfection, **Journal of Nanoparticle Research**, 15:2077-2092, 2013. (IF:2.101 at 2015, ranking:97/271=35.7%; in MATERIALS SCIENCE, MULTIDISCIPLINARY)
40. Zheng-Wei Liu, Hung-Chia Chou, Szu-Hsien Chen, Ching-Ting Tsao, Ching-Nan Chuang, Li-Chiun Cheng, Chen-Han Yang, **Chih-Kuang Wang*** and Kuo Huang Hsieh*, Mechanical and thermal properties of thermoplastic polyurethane-toughened polylactide-based nanocomposites, **Polymer Composites**, 35:1744-1757, 2014. (IF:2.324 at 2016, ranking:29/86=32%; in POLYMER SCIENCE)
41. **Chau-Zen** Wang, Yin-Chih Fu, Yan-Hsiung Wang, Po-Len Liu, Shih-Ciang Jian, Mei-Ling Ho, **Chih-Kuang Wang***, Synthesis and characterization of cationic polymeric nanoparticles as simvastatin carriers for enhancing the osteogenesis of bone marrow mesenchymal stem cells, **Journal of Colloid and Interface Science**, 432:190-199, 2014. (IF: 3.782 at 2015, ranking:41/144=28.4%; in CHEMISTRY, PHYSICAL)
42. Yin-Chih Fu, Tzu-Fun Fu, Hung-Jen Wang, Che-Wei Lin, Shun-Cheng Wu, Gang-Hui Lee, **Chih-Kuang Wang***, Aspartic acid based modified PLGA-PEG nanoparticles for bone targeting: *in vitro* and *in vivo* evaluations, **Acta Biomaterialia,** 10:4583-4596, 2014. (IF:6.008 at 2015, ranking:3/76=3.9%; in ENGINEERING, BIOMEDICAL)
43. Wei-Yao Chang, Szu-Hsien Chen, Cheng-Han Yang, Ching-Nan Chuang, **Chih-Kuang Wang*** and Kuo-Huang Hsieh**, Preparation and characterization of aromatic polyimides derived from 4,4'-oxydiphthalic anhydride and 4,4'-diaminodiphenylmethane with different alkyl substituents, **Journal of Polymer Research**, 22:38-46, 2015. (IF:1.615 at 2016, ranking: 40/86=46.5%; in

POLYMER SCIENCE)

44. Cheng-Han Yang, Szu-Hsien Chen, Yun-Wen Pan, Ching-Nan Chuang, Wen-Chi Chao, Tai-Horng Young, Wen-Yen Chiu, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Preparation and characterization of methoxy-poly(ethylene glycol) side chain grafted onto chitosan as a wound dressing film, **Journal of Applied Polymer Science**, 132: 42340-42348 2015. (IF:1.860 at 2016, ranking: 36/86=41.8%; in POLYMER SCIENCE)
45. Yin-Chih Fu, Yan-Hsiung Wang, Chung-Hwan Chen, **Chih-Kuang Wang**, Gwo-Jaw Wang, Mei-Ling Ho*, Combination of calcium sulfate and simvastatin-controlled release microspheres enhances bone repair in critical-sized rat calvarial bone defects, **International Journal of Nanomedicine**, 10:1-10, 2015. (IF:4.320 at 2015, ranking:40/253=15.8%; in PHARMACOLOGY & PHARMACY)
46. Wei-Yao Chang, Ching-Nan Chuang, Szu-Hsien Chen, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Preparation and characterization of nano-hybrids combining poly(urea-imide) with a porous silica-pillared layered phase, **Journal of Polymer Research**, 22:205-214, 2015. (IF:1.969 at 2015, ranking: 31/85=36.4%; in POLYMER SCIENCE)
47. Wei-Yao Chang, Yun-Wen Pan, Jian-Jhang Guo, Ching-Nan Chuang, Szu-Hsien Chen, **Chih-Kuang Wang***, Kuo-Huang Hsieh*, Fabrication and Characterization of Waterborne Polyurethane (WPU) with Aluminum Trihydroxide (ATH) and Mica as Flame Retardants, **Journal of Polymer Research**, 22:243-252, 2015. (IF:1.969 at 2015, ranking: 31/85=36.5%; in POLYMER SCIENCE)
48. Yao-Hsien Wang, Eswaramoorthy Rajalakshmanan, **Chih-Kuang Wang**, Chung-Hwan Chen, Yin-Chih Fu, Tzu-Lin Tsai, Je-Ken Chang, Mei-Ling Ho*, PLGA-linked alendronate enhances bone repair in diaphysis defect model, Journal of Tissue Engineering and Regenerative Medicine, 11:2603-2612, 2017. (IF:4.710 at 2015, ranking: 5/76=6.5%; in Engineering Biomedical)
49. Feng-Wei Lin, Pin-Yuan Chen, Kuo-Chen Wei, Chiung-Yin Huang, Chih-Kuang Wang, Hung-Wei Yang*,Rapid In Situ MRI Traceable Gel-forming Dual-drug Delivery for Synergistic Therapy of Brain Tumor.Theranostics, 2017; 7(9): 2524-2536. (IF: **8.537** at 2017, ranking: 8/133=6.25%; in Medicine, Research & Experimental)
50. Tien-Ching Lee[+], Yan-Hsiung Wang[+], Shih-Hao Huang, Chung-Hwan Chen, Mei-Ling Ho, Yin-Chih Fu[*], **Chih-Kuang Wang**[*], **Evaluations of Clinical-Grade Bone Substitute-Combined Simvastatin Carriers to Enhance Bone Growth: in vitro and in vivo analyses,** Journal of Bioactive and Compatible Polymers, 2018; 33: 160-177. (IF:1.624 at 2019, ranking: 57/89=64.0%; in Polymer Science)
51. Chau-Zen Wang; Rajalakshmanan Eswaramoorthy; Tzu-Hsiang Lin; Chung-Hwan Chen; Yin-Chih Fu; **Chih-Kuang Wang**; Shun-Cheng Wu; Gwo-Jaw Wang; Je-Ken Chang#*; Mei-Ling Ho#*, Enhancement of chondrogenesis of adipose-derived stem cells in HA-PNIPAAm-CL hydrogel for cartilage regeneration in rabbits,

Scientific Reports, **8**: 10526-10538, 2018. (IF:4.609 at 2017)

52. Chih-Ling Huang, Wan-Ru Hsieh, Che-Wei Lin, Hung-Wei Yang, and **Chih-Kuang Wang***, Multifunctional liposomal drug delivery with dual probes of magnetic resonance and fluorescence imaging, Ceramics International 44: 12442–12450, 2018. (IF:4.527 at 2020, ranking: 2/27=7.4%; in Materials Science, Ceramics category)
53. I Hao Chen, Ching Ming Chien, Chun Ting Wang, Chih Ling Huang *, **Chih Kuang Wang**, Yur Ren Kuo, Development for Wound Dressing Based on Blended Chitosan and Gelatin Hydrogels", Key Engineering Materials, 765:119-123, 2018. (Scimago Journal & Country Rank (SJR:0.18, 2017); Not SCI paper at currently) (2002-2005 belong SCI journal)
54. Chih-Ling Huang, Chih-Chiang Weng, Chih-Hung Liu, Chao-Tang Chuang, Li-Cheng Pana, Yi-Zhen Li, and **Chih-Kuang Wang***, Sterilization Efficacy of Biological Indicator by Lower 40 Celsius Temperature Plasma Processes, International Journal of Automation and Smart Technology, 8:161-166 (2018) (Scimago Journal & Country Rank (SJR:0.14, 2017); Not SCI paper at currently)
55. **Chau-Zen** Wang, Yan-Hsiung Wang, Tien-Ching Lee**,** Yin-Chih Fu, Mei-Ling Ho, **Chih-Kuang Wang***, Combination of bioceramic scaffold and simvastatins nanocarriers as a synthetic alternative to autologous bone grafting, International Journal of Molecular Sciences, 19: 4099-4118, 2018. (IF:5.923 at 2020, ranking: 74/297=24.9%; in Biochemistry & Molecular Biology)
56. Yi-An Cheng, Tung-Ho Wu, Yun-Ming Wang, Tian-Lu Cheng, I-Ju Chen, Yun-Chi Lu, Kuo-Hsiang Chuang, **Chih-Kuang Wang**, Chiao-Yun Chen, Rui-An Lin, Huei-Jen Chen, Tzu-Yi Liao, En-Shuo Liu & Fang-Ming Chen. "Humanized bispecific antibody (mPEG × HER2) rapidly confers PEGylated nanoparticles tumor specificity for multimodality imaging in breast cancer." **Journal of Nanobiotechnology** 18, 118-130 (2020). (2019 IF: 6.518)
57. Che-Wei Lin, Yu-Feng Su, Chih-Yun Lee, Lin Kang, Yan-Hsiung Wang, Sung-Yen Lin, **Chih-Kuang Wang***, 3D printed bioceramics fabricated using negative thermoresponsive hydrogels and silicone oil sealing to promote bone formation in calvarial defects, Ceramics International, 47, 5464-5476, 2021, (IF:4.527 at 2020, ranking: 2/27=7.4%; in Materials Science, Ceramics category)
58. Swathi Nedunchezian, Parikshit Banerjee, Chih-Yun Lee, Su-Shin Lee, Che-Wei Lin, Che-Wei Wu, Shun-Cheng Wu, Je-Ken Chang, **Chih-Kuang Wang***, Generating adipose stem cell-laden hyaluronic acid-based scaffolds using 3D bioprinting via the double crosslinked strategy for chondrogenesis, Materials Science and Engineering: C, 124, 112072, 2021. (**IF: 7.328** at 2020, ranking:**8/38=21.05%** in MATERIALS SCIENCE, BIOMATERIALS)
59. Che-Wei Lin, Chih-Yun Lee, Sung-Yen Lin, Lin Kang, Yin-Chih Fu, Chung-Hwan Chen, **Chih-Kuang Wang***, Bone targeting nanoparticles of dendritic (aspartic

acid)$_3$-functionalized PEG-PLGA biopolymer encapsulated simvastatin treated for the osteoporosis animal models, in draft, 2021/10/18.

專利

01. **王志光**, 許富銀, 廖駿偉, 闕山璋, "奈米金屬複合半導體光觸媒", 中華民國專利證書號：第 I251507 號, 2006。
02. **王志光**, 許富銀, 廖駿偉, 闕山璋, "可見光誘發強氧化強還原光觸媒",中華民國專利證書號：I229011, 2005。
03. **Chih-Kuang Wang**, Fu-Yin Hsu, Shan-Chang Chueh, Jiunn-Woei Liaw, Visible light-induced photocatalyst, US-Patent 7169733, 2007.
04. 傅尹志, **王志光**, 王國照, 何美泠, 陳惠亭, 張瑞根, 曾誠齊, "控制釋放之醫藥組合物及其製備方法", 中華民國專利號：I 362947, 專利權期間自 **2012.5.1 至 2027.3.7 止**。
05. Yin-Chih Fu, **Chih-Kuang Wang**, Gwo-Jaw Wang, Mei-Ling Ho, Hui-Ting Chen, Je-Ken Chang, and Cherng-Chyi Tzeng, Controlled release system and manufacturing method thereof, US Patent no. 8,663,677, 2014.
06. 傅尹志, **王志光**, 王國照, 何美泠, 張瑞根, 曾誠齊, "藥物緩釋系統及其製備方法",中華民國專利號：I457146, 專利權期間自 **2014.10.21 至 2030.8.23 止**。
07. Yin-Chih Fu, **Chih-Kuang Wang**, Gwo-Jaw Wang, Mei-Ling Ho, Je-Ken Chang, and Cherng-Chyi Tzeng, Sustained Release Systems and Preparation Method Thereof, US 9,314,503 B2, April 19, 2016.
08. **王志光**, 何美泠, 傅尹志, 王國照, 張瑞根, "以溫感水膠製備多孔性陶瓷技術",中華民國專利號：I411595, 專利權期間自 **2013.10.11 至 2030.4.6 止**。
09. **Chih-Kuang Wang**, Mei-Ling Ho, Yin-Chih Fu, Gwo-Jaw Wang, Je-Ken Chang, "Method for preparing composition comprising porous ceramic with thermo-response hydrogel", United States Patent no. US 8940203 B2, Jan 27, 2015. (2015-01-27~2031-08-21)
10. **王志光**, 潘力誠, 李之昀, 林宏哲, 林哲緯, 劉博倫, 史秉修, 具雙影像追蹤探針之高分子奈米載體及其製備方法, 中華民國專利號：第 I530296 號, April 21, 2016。
11. **Chih-Kuang Wang**, Mei-Ling Ho, Li-Cheng Pan, Yin-Chih Fu, Chung-Hwan Chen, Je-Ken Chang, Method for additive manufacturing a 3D printed object, PCT/CN2016/108373, Dec 2, 2016. (United States Patent Provisional Application 62/263,005, Dec 4, 2015).
12. **王志光**, 何美泠, 潘力誠, 傅尹志, 陳崇桓, 張瑞根, 積層製造 3D 列印物品的方法, 中華民國專利號： I611892 號,專利權期間自 2018.01.21 至 2036.1.20 止。

13. **王志光**, 何美泠, 潘力誠, 傅尹志, 陳崇桓, 張瑞根, 積層製造 3D 列印物品的方法, WO-世界專利(日本) 獲證 6676245, 2020-03-16- 2036-12-02
14. **王志光**, 何美泠, 潘力誠, 傅尹志, 陳崇桓, 張瑞根, 積層製造 3D 列印物品的方法, WO(EP)-世界專利(歐盟) 核准通知獲證通知 2020-10-01。
15. **王志光**, 李之昀, 李宜蓁, 劉哲維, 林哲緯,用于光固化 3D 打印的浆料、其制备方法及其使用方法, 中華民國申請號 109102261, 申請日期 2020-01-21，獲證通知 2020-10-27。
16. **王志光**, 李之昀, 李宜蓁, 劉哲維, 林哲緯, 用于光固化 3D 打印的浆料、其制备方法及其使用方法, 世界專利申請號 PCT/CN2020/073381, 申請日期 2020-01-21