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Current position: Assistant Professor

Biofunctional Materials, Division of Applied Oral Sciences and Community Dental Care, Faculty of Dentistry, The University of Hong Kong, Hong Kong SAR, People's Republic of China

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Google scholar: <https://scholar.google.com/citations?hl=en&user=no2pfp4AAAAJ>

Educations

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| 2014.03 – 2017.08 | Ph.D. in Department of Dental Materials, Kyung Hee University, Republic of Korea
(Advisor: Prof. Il Keun Kwon) |
| 2012.03 – 2014.02 | M.S. in Department of Maxillofacial Biomedical Engineering Kyung Hee University, Republic of Korea
(Advisor: Prof. Il Keun Kwon) |
| 2010.03 – 2012.02 | B.S. in Department of Dental Laboratory Science, Catholic University of Pusan, Republic of Korea
(Advisor: Prof. Sung-Min Choi) |
| 2005.03 – 2010.02 | A.S. in Department of Dental Technology, Daegu Health College, Republic of Korea
(Military service included in Republic of Korea)
(Advisor: Prof. Hee-Kyung Lee) |

Professional Experiences

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| 2022.08 – Present | Assistant Professor , Biofunctional Materials, Division of Applied Oral Sciences and Community Dental Care, Faculty of Dentistry, The University of Hong Kong, Hong Kong SAR, People's Republic of China |
| 2019.01 – 2022.07 | Postdoctoral Research Associate , Richard and Loan Hill Department of Biomedical Engineering, University of Illinois at Chicago, United States
(Advisor: Prof. Eben Alsberg) |
| 2018.06 – 2018.12 | Postdoctoral Research Associate , Department of Biomedical Engineering, Case Western Reserve University, United States
(Advisor: Prof. Eben Alsberg) |
| 2017.09 – 2018.05 | Postdoctoral Research Associate , Department of Dental Materials, Kyung Hee University, Republic of Korea
(Advisor: Prof. Il Keun Kwon) |

2014.03 – 2017.08	Assistant Research Engineer , Department of Nature-Inspired Nanoconvergence Systems, Korea Institute of Machinery and Materials (KIMM), Republic of Korea (Advisor: Dr. Su A Park)
2012.03 – 2014.02	Research Assistant , School of Dentistry, Kyung Hee University, Republic of Korea
2014.03 – 2014.08	Research Assistant , School of Medicine, Kyung Hee University, Republic of Korea

Honors and Awards

1. The Grand Prize from president of college; Excellence Research Publication Award in 2017 from School of Dentistry, Kyung Hee University, Seoul, Republic of Korea, 2017. 03.
2. The Excellence Award from president of school; Graduate Thesis Award in 2017 graduation ceremony from Kyung Hee University, Seoul, Republic of Korea, 2017. 08.

Research Interests

1. Development of high-density stem cells delivery carrier for immediate transplantation therapy
2. Development of multi-layered living tissue patch for complex wound healing
3. Generation of scaffold-free hollow tissue aggregates for tubular organ reconstruction
4. Generation of scaffold-free 3D printed living tissue in supporting bath for transplantation therapy
5. Generation of 4D actuator encapsulating high-density cells for heterogeneous tissue regeneration
6. Development of injectable hydrogel system for immediate treatment
7. Generation of porous scaffold through 3D bio-printing system for vascularized bone tissue and tubular organ tissue engineering
8. Fabrication of natural and synthetic polymeric nano/microfibrous membrane for tissue engineering application
9. Surface functionalization of polymeric biomaterials to enhance its functionality
10. Functionalization of nano/microparticles to accelerate wound healing, drug delivery, and tissue regeneration

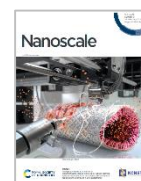
Technical Skill

1. **Materials and characterization WORKs**
 - Synthesis and modification of natural (chitosan, alginate, gelatin, hyaluronic acid) hydrogel polymers and its dynamic cross-linking
 - Synthesis of organic-inorganic nano/microparticles for growth factor and drug delivery
 - Surface functionalization of substrates under mild aqueous condition without using organic solvent
 - Generation of synthetic (PLGA, PLLA, PLCL, PU, PCL) and natural (gelatin, chitosan) fibrous polymer membrane

- Characterization of developed polymers (H¹NMR, UV, Eliza, mechanical properties, XPS, XRD, EDS, SEM, TEM, FT-IR, TGA, DLS, FIB, AFM, water uptake & contact angle, swelling ratio, zeta potential, etc.)
 - Characterization of drug release profile via HPLC system and eliza kit
- 2. Biological WORK**
- Primary & Stem cell control, expansion, and differentiation (adipose derived mesenchymal stem cells, bone-marrow mesenchymal stem cells, human umbilical vein endothelial cell, etc.)
 - Angiogenic, osteogenic, chondrogenic, cardiomyogenic differentiation of stem cells
 - Analysis of cellular activities via Eliza kit, enzymatic assays and RT-PCR
 - Visualization of cell function and its characterization using SEM, optical microscope, fluorescence microscope, and confocal laser scanning microscopy
 - Paraffin/frozen section of cell condensation and its visualization via fluorescence and immunostaining
- 3. Animal WORK**
- Preparation of animal protocol for IRB/IACUC approval
 - One-step rodent (mouse and rat) study including formation of calvarial defect model and subcutaneous implantation of biomaterials with cells followed by suture and sacrifice
 - Histological analysis via paraffin/frozen section (colorimetric and immunostaining)
- 4. Experimental equipment and Programming**
- Equipments: Core/shell hydrogel particle generation, hollow hydrogel formation, Electrospinning, 3D bioprinting (supporting bath, additive manufacturing, rapid prototyping), 4D actuator generation systems
 - Programming: ImageJ, SigmaPlot, GraphPad Prism, 3D MAX, Rhino 3D, KeyShot, Blender

Representative Five First Author Publications within recent 3 years

1. **SJ Lee***, HR Nah*, DN Heo*, KH Kim, JM Seok, M Heo, HJ Moon, DH Lee, JS Lee, SY An, YS Hwang, WK Ko, SJ Kim, SI Sohn, SA Park, SY Park, IK Kwon “Induction of osteogenic differentiation in a rat calvarial bone defect model using an In situ forming graphene oxide incorporated glycol chitosan/oxidized hyaluronic acid injectable hydrogel”. *Carbon*, 2020, 168: 264-277 (2020 IF : 9.59)
2. **SJ Lee***, JS Choi*, MR Eom, HH Jo, IK Kwon, SK Kwon, SA Park “Dexamethasone loaded bilayered 3D tubular scaffold reduces restenosis at the anastomotic site of tracheal replacement: *in vitro* and *in vivo* assessments”. *Nanoscale*, 4846-4858 (selected as a front cover, 2020 IF : 7.79)
3. **SJ Lee***, HH Jo*, KS Lim, DH Lim, SJ Lee, JH Lee, WD Kim, MH Jeong, JY Lim, IK Kwon, YM Jung, JK Park, SA Park “Heparin coating on 3D printed poly (l-lactic acid) biodegradable



cardiovascular stent via mild surface modification approach for coronary artery implantation”. *Chemical Engineering Journal*, 2019, 378: 122116 (2019 IF : 10.65)

4. **SJ Lee***, JE Won*, CH Han, XY Yin, HK Kim, HR Nah, IK Kwon, BH Min, CH Kim, YS Shin, SA Park “Development of a three-dimensionally printed scaffold grafted with bone forming peptide-1 for enhanced bone regeneration with in vitro”. *Journal of Colloid and Interface Science*, 2019, 539: 468-480 (2019 IF : 7.48)
5. **SJ Lee**, ME Kim, HR Nah, JM Seok, MH Jeong, KS Park, IK Kwon, JS Lee, SA Park “Vascular endothelial growth factor immobilized on mussel-inspired three-dimensional bilayered scaffold for artificial vascular graft application: In vitro and in vivo evaluations”. *Journal of Colloid and Interface Science*, 2019, 537: 333-344 (2019 IF : 7.48)

Publications (First and co-first author: 28, Co-author: 45)

1. J Lee, O Jeon, J Koh, HJ Kim, **SJ Lee**, Y Zhu, J Song, Y Lee, R Nasiri, KJ Lee, P Bandaru, HJ Cho, S Zhang, NR Barros, S Ahadian, H Kang, MR Dokmeci, J Lee, DD Carlo, E Alsberg, A Khademhosseini “ Micromechanical property mismatch between pericellular and extracellular matrices regulates stem cell articular and hypertrophic chondrogenesis”. *Matter*, 2022, In Press
2. A Ding, **SJ Lee**, R Tang, KL Gasvoda, F He, E Alsberg “ 4D Cell-Condensate Bioprinting”. *Small*, 2022, 18 (36): 2202196
3. JS Lee, H Nah, D Lee, SH An, WK Ko, **SJ Lee**, SY Lee, KM Park, JB Lee, HJ Yi, IK Kwon, KS Choi, DN Heo “Immediately implantable extracellular matrix-enriched osteoinductive hydrogel-laden 3D-printed scaffold for promoting vascularized bone regeneration in vivo”. *Materials & Design*, 2022, 219: 110801
4. WK Ko, SJ Kim, GH Han, D Lee, D Jeong, **SJ Lee**, I Han, JB Hong, SH Sheen, S Sohn “Transplantation of neuron-inducing grafts embedding positively charged gold nanoparticles for the treatment of spinal cord injury”. *Bioengineering & Translational Medicine*, 2022, e10326
5. A Ding, O Jeon, D Cleveland, KL Gasvoda, D Wells, **SJ Lee**, E Alsberg “Jammed Micro-Flake Hydrogel for 4D Living Cell Bioprinting”. *Advanced Materials*, 2022, 34 (15): 2109394
6. O Jeon, YB Lee, **SJ Lee**, N Guliyeva, J Lee, E Alsberg “Stem cell-laden hydrogel bioink for generation of high resolution and fidelity engineered tissues with complex geometries”. *Bioactive Materials*, 2022, 15: 185-193
7. DY Lee, HR Nah, WK Ko, SJ Kim, GH Han, DB Jeong, DH Lee, IB Han, SH Sheen, DN Heo, **SJ Lee**, YS Nam, IK Kwon, SI Sohn “Thiolate poly(lactic-co-glycolic acid) nanofibers loaded with dexamethasone and ropivacaine show enhanced sustained release in the treatment of neuropathic pain through a local therapy technique”. *Chemical Engineering Journal*, 2022, 431: 133356
8. A Ding, **SJ Lee**, S Ayyagari, R Tang, CT Huynh, E Alsberg Alsberg “4D biofabrication via instantly generated graded hydrogel scaffolds”. *Bioactive Materials*, 2022, 7: 324-332

9. JS Lee, HS Kim, H Nah, **SJ Lee**, HJ Moon, JB Bang, JB Lee, SH Do, IK Kwon, DN Heo “The Effectiveness of Compartmentalized Bone Graft Sponges Made Using Complementary Bone Graft Materials and Succinylated Chitosan Hydrogels”. *Biomedicines*, 2021, 12(9): 1765
10. **SJ Lee***, HN Nah*, WK Ko, D Lee, HJ Moon, JS Lee, M Heo, YS Hwang, JB Bang, SH An, DN Heo, IK Kwon “Facile preparation of β -cyclodextrin-grafted chitosan electrospun nanofibrous scaffolds as a hydrophobic drug delivery vehicle for tissue engineering application”. *ACS Omega*, 2021, 6 (42): 28307-28315 (*Equal Contribution)
11. JM Seok, G Choe, **SJ Lee**, MA Yoon, KS Kim, JH Lee, WD Kim, JY Lee, KW Lee, “SA Park Enhanced three-dimensional printing scaffold for osteogenesis using a mussel-inspired graphene oxide coating”. *Materials & Design*, 2021, 209: 109941
12. JM Seok, JE Jeong, **SJ Lee**, SH Im, JH Lee, WD Kim, K Lee, SA Park “Bio-plotted hydrogel scaffold with core and sheath strand-enhancing mechanical and biological properties for tissue regeneration”. *Colloids and Surfaces B: Biointerfaces*, 2021, 205: 111919
13. WK Ko*, **SJ Lee***, SJ Kim*, GH Han, IB Han, JB Hong, SH Sheen, S Sohn “ Direct injection of hydrogels embedding gold nanoparticles for local therapy after spinal cord injury”. *Biomacromolecules*, 2021, 22(7): 2887–2901 (*Equal Contribution)
14. YB Lee, O Jeon, **SJ Lee**, A Ding, D Wells, E Alsberg “Induction of Four-Dimensional Spatiotemporal Geometric Transformations in High Cell Density Tissues via Shape-Changing Hydrogels”. *Advanced Functional Materials*, 2021, 31: 2010104
15. A Ding, O Jeon, R Tang, YB Lee, **SJ Lee**, E Alsberg “Cell-laden Multiple-Step and Reversible 4D Hydrogel Actuators to Mimic Dynamic Tissue Morphogenesis”. *Advanced Science*, 2021, 8: 2004616
16. JS Lee, HR Nah, HJ Moon, **SJ Lee**, DN Heo, IK Kwon “Controllable delivery system: a temperature and pH-responsive injectable hydrogel from succinylated chitosan”. *Applied Surface Science*, 2020, 528: 146812
17. HR Nah, DH Lee, JS Lee, **SJ Lee**, DN Heo, YH Lee, JB Bang, YS Hwang, HJ Moon, IK Kwon “Strategy to inhibit effective differentiation of RANKL-induced osteoclasts using vitamin D-conjugated gold nanoparticles”. *Applied Surface Science*, 2020, 527: 146765
18. **SJ Lee***, HR Nah*, DN Heo*, KH Kim, JM Seok, M Heo, HJ Moon, DH Lee, JS Lee, SY An, YS Hwang, WK Ko, SJ Kim, SI Sohn, SA Park, SY Park, IK Kwon “Induction of osteogenic differentiation in a rat calvarial bone defect model using an In situ forming graphene oxide incorporated glycol chitosan/oxidized hyaluronic acid injectable hydrogel”. *Carbon*, 2020, 168: 264-277 (*Equal Contribution)
19. JM Lee, OJ Jeon, M Kong, AA Abdeen, JY Shin, HN Lee, YB Leem W Sun, P Bandaru, DS Alt, KJ Lee, HJ Kim, **SJ Lee**, S Chaterji, SR Shin, E Alsberg, A Khademhosseini “Combinatorial screening of biochemical and physical signals for phenotypic regulation of stem cell-based cartilage tissue engineering”. *Science Advances*, 2020, 6(21): eaaz5913
20. IG Kim, SA Park, SH Lee, JS Choi, HN Choi, **SJ Lee**, YW Kwon, SK Kwon “Transplantation of a 3D-printed tracheal graft combined with iPS cell-derived MSCs and chondrocytes”. *Scientific Reports*, 2020, 10: 4326

21. **SJ Lee***, JS Choi*, MR Eom, HH Jo, IK Kwon, SK Kwon, SA Park “Dexamethasone loaded bilayered 3D tubular scaffold reduces restenosis at the anastomotic site of tracheal replacement: in vitro and in vivo assessments”. *Nanoscale*, 2020, 12(8): 4846-4858 (selected as a front cover, *Equal Contribution)
22. DN Heo, HJ Kim, D Lee, H Kim, **SJ Lee**, HR Lee, IK Kwon, SH Do “Comparison of polysaccharides in articular cartilage regeneration associated with chondrogenic and autophagy-related gene expression”. *International Journal of Biological Macromolecules*, 2020, 146: 922-930
23. JS Choi*, BK Huh*, **SJ Lee***, MJ Han, MR Eom, HJ Ahn, YJ Jin, SA Park, YB Choy, SK Kwon “Tranilast-loaded tubular scaffold and surgical suture for suppression of stenosis after tracheal prosthesis transplantation”. *Journal of Industrial and Engineering Chemistry*, 2020, 82: 81-88 (*Equal Contribution)
24. JS Lee*, **SJ Lee***, SB Yang, D Lee, H Nah, DN Heo, HJ Moon, YS Hwang, RL. Reis, JH Moon, IK Kwon “Facile preparation of mussel-inspired antibiotic-decorated titanium surfaces with enhanced antibacterial activity for implant applications”. *Applied Surface Science*, 2019, 496: 143675 (*Equal Contribution)
25. HR Nah, DH Lee, M Heo, JS Lee, **SJ Lee**, DN Heo, JM Seong, HN Lim, YH Lee, HJ Moon, YS Hwang, IK Kwon “Vitamin D-conjugated gold nanoparticles as functional carriers to enhancing osteogenic differentiation”. *Science and Technology of Advanced Materials*, 2019, 20 (1): 826–836
26. **SJ Lee***, HH Jo*, KS Lim, DH Lim, SJ Lee, JH Lee, WD Kim, MH Jeong, JY Lim, IK Kwon, YM Jung, JK Park, SA Park “Heparin coating on 3D printed poly (l-lactic acid) biodegradable cardiovascular stent via mild surface modification approach for coronary artery implantation”. *Chemical Engineering Journal*, 2019, 378: 122116 (*Equal Contribution)
27. OJ Jeon, YB Lee, H Jeong, **SJ Lee**, D Wells, E Alsberg “Individual cell-only bioink and photocurable supporting medium for 3D printing and generation of engineered tissues with complex geometries”. *Materials Horizons*, 2019, 6(8): 1625-1631 (selected as a front cover)
28. SJ Kim, WK Ko, DN Heo, **SJ Lee**, DH Lee, M Heo, IB Han, IK Kwon, SI Sohn “Anti-neuroinflammatory gold nanocomplex loading ursodeoxycholic acid following spinal cord injury”. *Chemical Engineering Journal*, 2019, 375: 122088
29. **SJ Lee***, HJ Kim*, M Heo, HR Lee, EJ Choi, HS Kim, DH Lee, RL. Reis, SH Do, IK Kwon “In vitro and in vivo assessments of an optimal polyblend composition of polycaprolactone/gelatin nanofibrous scaffolds for Achilles tendon tissue engineering”. *Journal of Industrial and Engineering Chemistry*, 2019, 76: 173-180 (*Equal Contribution)
30. YH Youn*, **SJ Lee***, GR Choi, HR Lee, DH Lee, DN Heo, BS Kim, JB Bang, YS Hwang, VM. Correlo, RL. Reis, SG Im, IK Kwon “Simple and facile preparation of recombinant human bone morphogenetic protein-2 immobilized titanium implant via initiated chemical vapor deposition technique to promote osteogenesis for bone tissue engineering application”. *Materials Science and Engineering: C*, 2019, 100: 949-958 (*Equal Contribution)
31. DH Lee, EJ Choi, SE Lee, KL Kang, HJ Moon, HJ Kim, YH Youn, DN Heo, **SJ Lee**, HR Nah, YS Hwang, YH Lee, JM Seong, SH Do, IK Kwon “Injectable biodegradable gelatin-methacrylate/ β -tricalcium

- phosphate composite for the repair of bone defects”. *Chemical Engineering Journal*, 2019, 365: 30-39
32. **SJ Lee***, JE Won*, CH Han, XY Yin, HK Kim, HR Nah, IK Kwon, BH Min, CH Kim, YS Shin, SA Park “Development of a three-dimensionally printed scaffold grafted with bone forming peptide-1 for enhanced bone regeneration with in vitro”. *Journal of Colloid and Interface Science*, 2019, 539: 468-480 (*Equal Contribution)
 33. **SJ Lee**, ME Kim, HR Nah, JM Seok, MH Jeong, KS Park, IK Kwon, JS Lee, SA Park “Vascular endothelial growth factor immobilized on mussel-inspired three-dimensional bilayered scaffold for artificial vascular graft application: In vitro and in vivo evaluations”. *Journal of Colloid and Interface Science*, 2019, 537: 333-344
 34. JM Seok, SH Oh, **SJ Lee**, JH Lee, WD Kim, SH Park, SY Nam, HS Shin, SA Park “Fabrication and characterization of 3D scaffolds made from blends of sodium alginate and poly(vinyl alcohol)”. *Materials Today Communications*, 2019, 19:56-61
 35. DH Lee, DN Heo, HR Nah, **SJ Lee**, WK Ko, JS Lee, HJ Moon, JB Bang, YS Hwang, RL Reis, IK Kwon “Injectable hydrogel composite containing modified gold nanoparticles: implication in bone tissue regeneration”. *International Journal of Nanomedicine*, 2018, 13: 7019-7031
 36. **SJ Lee**, HJ Lee, SY Kim, JM Seok, JH Lee, WD Kim, IK Kwon, SY Park, SA Park “In situ gold nanoparticle growth on polydopamine-coated 3D-printed scaffolds improves osteogenic differentiation for bone tissue engineering applications: in vitro and in vivo studies”. *Nanoscale*, 2018, 10(33): 15447-15453
 37. D Lee*, **SJ Lee***, JH Moon, JH Kim, DN Heo, JB Bang, HN Lim, Il Keun Kwon “Preparation of antibacterial chitosan membranes containing silver nanoparticles for dental barrier membrane applications”. *Journal of Industrial and Engineering Chemistry*, 2018, 66: 196-202 (*Equal Contribution)
 38. SA Park*, **SJ Lee***, JM Seok, JH Lee, WD Kim, IK Kwon “Fabrication of 3D Printed PCL/PEG Polyblend Scaffold Using Rapid Prototyping System for Bone Tissue Engineering Application”. *Journal of Bionic Engineering*, 2018, 35(3): 435-442 (*Equal Contribution)
 39. SA Park, HJ Lee, KS Kim, **SJ Lee**, JT Lee, SY Kim, NH Chang, SY Park, “In Vivo Evaluation of 3D-Printed Polycaprolactone Scaffold Implantation Combined with β -TCP Powder for Alveolar Bone Augmentation in a Beagle Defect Model”. *Materials*, 2018, 11(2):238
 40. **SJ Lee***, M Heo*, D Lee, S Han, JH Moon, HN Lim, IK Kwon, “Preparation and characterization of antibacterial orthodontic resin containing silver nanoparticles”. *Applied Surface Science*, 2018, 432:317-323 (*Equal Contribution)
 41. D Lee, DN Heo, **SJ Lee**, M Heo, J Kim, S Choi, HK Park, YG Park, HN Lim, IK Kwon, “Poly(lactide-co-glycolide) nanofibrous scaffolds chemically coated with gold-nanoparticles as osteoinductive agents for osteogenesis”. *Applied Surface Science*, 2018, 432:300-307
 42. M Heo*, **SJ Lee***, DN Heo, D Lee, HN Lim, JH Moon, IK Kwon, “Multilayered co-electrospun scaffold containing silver sulfadiazine as a prophylactic against osteomyelitis: Characterization and biological in vitro evaluations”. *Applied Surface Science*, 2018, 432:308-316 (*Equal Contribution)

43. KW Jang, D Seol, L Ding, DN Heo, **SJ Lee**, JA Martin, IK Kwon, "Ultrasound-triggered PLGA Microparticle Destruction and Degradation for Controlled Delivery of Local Cytotoxicity and Drug Release". *International Journal of Biological Macromolecules*, 2018, 106:1211-1217
44. HJ Kim, DN Heo, YJ Lee, **SJ Lee**, JY Kang, SH Lee, IK Kwon, SH Do, "Biological assessments of multifunctional hydrogel-decorated implantable neural cuff electrode for clinical neurology application". *Scientific Reports*, 2017, 7(1): 15245
45. M Heo*, **SJ Lee***, D Lee, DN Heo, JS Lee, YH Youn, BS Kim, HN Lim, IK Kwon, "Preparation of mechanically enhanced hydrogel scaffolds by incorporating interfacial polymer nanorods for nerve electrode application". *Fibers and Polymers*, 2017, 18(11): 2248-2254 (*Equal Contribution)
46. **SJ Lee**, M Heo, D Lee, DN Heo, HN Lim, IK Kwon, "Fabrication and design of bioactive agent coated, highly-aligned electrospun matrices for nerve tissue engineering: Preparation, characterization and application". *Applied Surface Science*, 2017, 424 Part 3: 359-367
47. DN Heo, HJ Kim, YJ Lee, M Heo, **SJ Lee**, D Lee, SH Do, SH Lee, IK Kwon, "Flexible and Highly Biocompatible Nanofiber-Based Electrodes for Neural Surface Interfacing". *ACS Nano*, 2017, 11(3): 2961-2971 (selected as a front cover)
48. **SJ Lee***, MS Bae*, DW Lee, DN Heo, D Lee, M Heo, SJ Hong, J Kim, WD Kim, SA Park, IK Kwon, "The use of heparin chemistry to improve dental osteogenesis associated with implants". *Carbohydrate Polymers*, 2017, 157: 1750-1758 (*Equal Contribution)
49. **SJ Lee***, DN Heo*, M Heo, MH Noh, D Lee, SA Park, JH Moon, IK Kwon, "Most simple preparation of an inkjet printing of silver nanoparticles on fibrous membrane for water purification: Technological and commercial application". *Journal of Industrial and Engineering Chemistry*, 2017, 45: 273-278 (*Equal Contribution)
50. JS Park, **SJ Lee**, HH Jo, JH Lee, WD Kim, JY Lee, SA Park, "Fabrication and characterization of 3D-printed bone-like β -tricalcium phosphate/polycaprolactone scaffolds for dental tissue engineering". *Journal of Industrial and Engineering Chemistry*, 2017, 45: 175-181
51. J Park, **SJ Lee**, S Chung, JH Lee, WD Kim, JY Lee, SA Park, "Cell-laden 3D bioprinting hydrogel matrix depending on different compositions for soft tissue engineering: Characterization and evaluation". *Materials Science and Engineering: C*, 2017, 71: 678-684
52. EY Heo, NR Ko, MS Bae, **SJ Lee**, BJ Choi, JH Kim, HK Kim, SA Park, IK Kwon, "Novel 3D printed alginate-BFP1 hybrid scaffolds for enhanced bone regeneration". *Journal of Industrial and Engineering Chemistry*, 2017, 45: 61-67
53. **SJ Lee**, DN Heo, D Lee, M Heo, H Rim, LG Zhang, SA Park, SH Do, JH Moon, IK Kwon, "One-Step Fabrication of AgNPs Embedded Hybrid Dual Nanofibrous Oral Wound Dressings". *Journal of Biomedical Nanotechnology*, 2016, 12(11): 2041-2050
54. HH Jo, **SJ Lee**, JS Park, JH Lee, WD Kim, SK Kwon, JH Lee, JY Lim, "Characterization and Preparation of Three-Dimensional-Printed Biocompatible Scaffolds with Highly Porous Strands". *Journal of Nanoscience and Nanotechnology*, 2016, 16(11): 11943-11946

55. D Lee, WK Ko, DS Hwang, DN Heo, **SJ Lee**, M Heo, KS Lee, JY Ahn, J Jo, IK Kwon, "Use of Baicalin-Conjugated Gold Nanoparticles for Apoptotic Induction of Breast Cancer Cells". *Nanoscale Research Letters*, 2016, 11(1): 381-386
56. D Lee, DN Heo, HJ Kim, WK Ko, **SJ Lee**, M Heo, JB Bang, JB Lee, DS Hwang, SH Do, IK Kwon, "Inhibition of Osteoclast Differentiation and Bone Resorption by Bisphosphonate-conjugated Gold Nanoparticles". *Scientific Reports*, 2016, 6: 27336-27346
57. DY Lee, SA Park, **SJ Lee**, TH Kim, SH Oh, JH Lee, SK Kwon, "Segmental tracheal reconstruction by 3D-printed scaffold: Pivotal role of asymmetrically porous membrane". *The Laryngoscope*, 2016, 126(9): 304-309
58. DN Heo, WK Ko, WJ Lee, **SJ Lee**, D Lee, M Heo, H Rim, MS Bae, JB Lee, BS Ahn, IK Kwon, "Enhanced Biocompatibility of Polyimide Film by Anti-Inflammatory Drug Loading". *Journal of Nanoscience and Nanotechnology*, 2016, 16(8): 8800-8804
59. MS Bae, NR Ko, **SJ Lee**, JB Lee, DN Heo, W Byun, BJ Choi, HB Jeon, HJ Jang, JY Ahn, DS Hwang, BY Jung, IK Kwon, "Development of novel photopolymerizable hyaluronic acid/heparin-based hydrogel scaffolds with a controlled release of growth factors for enhanced bone regeneration". *Macromolecular Research*, 2016, 24(9): 829-837
60. SE Park, WK Ko, JH Park, M Bayome, J Park, DN Heo, **SJ Lee**, JH Moon, IK Kwon, YA Kook, "Antibacterial Effect of Silver and Gold Nanoparticle Coated Modified C-Palatal Plate". *Journal of Nanoscience and Nanotechnology*, 2016, 16(8): 8809-8813
61. DN Heo, SJ Song, HJ Kim, YJ Lee, WK Ko, **SJ Lee**, D Lee, SJ Park, LG Zhang, JY Kang, SH Do, SH Lee, IK Kwon, "Multifunctional hydrogel coatings on the surface of neural cuff electrode for improving electrode-nerve tissue interfaces". *Acta Biomaterialia*, 2016, 39: 25-33
62. DN Heo, WK Ko, HR Lee, **SJ Lee**, D Lee, SH Um, JH Lee, YH Woo, LG Zhang, DW Lee, IK Kwon, "Titanium dental implants surface-immobilized with gold nanoparticles as osteoinductive agents for rapid osseointegration". *Journal of Colloid and Interface Science*, 2016, 469: 129-137
63. **SJ Lee**, SA Park, DN Heo, D Lee, HJ Jang, KS Kim, JH Moon, IK Kwon, "Preparation of Electrospun Fibrous Scaffold Containing Silver Sulfadiazine for Biomedical Applications". *Journal of Nanoscience and Nanotechnology*, 2016, 16(8): 8554-8558
64. **SJ Lee**, HH Jo, SK Kwon, JH Lee, WD Kim, JH Lee, IK Kwon, SA Park, "A novel mussel-inspired 3D printed-scaffolds immobilized with bone forming peptide-1 for bone tissue engineering applications: Preparation, characterization and evaluation of its properties". 2016, 24(4): 305-308
65. **SJ Lee**, D Lee, TR Yoon, HK Kim, HH Jo, JS Park, JH Lee, WD Kim, IK Kwon, SA Park, "Surface modification of 3D-printed porous scaffolds via mussel-inspired polydopamine and effective immobilization of rhBMP-2 to promote osteogenic differentiation for bone tissue engineering". *Acta Biomaterialia*, 2016, 40: 182-191
66. SW Park, D Lee, HR Lee, HJ Moon, BR Lee, WK Ko, SJ Song, **SJ Lee**, K Shin, W Jang, JK Yi, SG Im, IK Kwon, "Generation of functionalized polymer nanolayer on implant surface via

- initiated chemical vapor deposition (iCVD)". *Journal of Colloid and Interface Science*, 2015, 439: 34-41
67. WK Ko, DN Heo, HJ Moon, **SJ Lee**, MS Bae, JB Lee, IC Sun, HB Jeon, HK Park, IK Kwon, "The effect of gold nanoparticle size on osteogenic differentiation of adipose-derived stem cells". *Journal of Colloid and Interface Science*, 2015, 438: 68-76
68. SA Park, **SJ Lee**, KS Lim, IH Bae, JH Lee, WD Kim, MH Jeong, JK Park, "In vivo evaluation and characterization of a bio-absorbable drug-coated stent fabricated using a 3D-printing system". *Materials Letters*, 2015, 141: 355-358
69. **SJ Lee**, DN Heo, JS Park, SK Kwon, JH Lee, JH Lee, WD Kim, IK Kwon, SA Park, "Characterization and preparation of bio-tubular scaffolds for fabricating artificial vascular grafts by combining electrospinning and a 3D printing system". *Physical Chemistry Chemical Physics*, 2015, 5(17): 2996-2999
70. **SJ Lee***, DN Heo*, HR Lee, DH Lee, SJ Yu, SA Park, WK Ko, SW Park, SG Im, JH Moon, IK Kwon, "Biofunctionalized titanium with anti-fouling resistance by grafting thermo-responsive polymer brushes for the prevention of peri-implantitis". *Journal of Materials Chemistry B*, 2015, 3(26): 5161-5165 (*Equal Contribution)
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