CURRICULUM VITAE

CV SECTION 1: Employment History/Awards

NAME
Ketul C. Popat

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Department of Mechanical Engineering
Colorado State University
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EDUCATION

2003	PhD., Bioengineering, University of Illinois, Chicago IL, USA
2000	M.Eng., Chemical Engineering, Illinois Institute of Technology, Chicago IL, USA
1998	B.Eng., Chemical Engineering, Maharaja Sayajirao University, Baroda, India

ACADEMIC POSITIONS

2013 – present	Associate Professor, Mechanical Engineering/School of Biomedical Engineering, Colorado State University, Fort Collins CO, USA
2007 – 2013	Assistant Professor, Mechanical Engineering/School of Biomedical Engineering, Colorado State University, Fort Collins CO, USA

ADMINISTRATIVE POSITIONS

2019 – present	Interim Director of Interim Director of the Undergraduate Program, School of Biomedical Engineering, Colorado State University, Fort Collins CO, USA
2018 – present	Associate Department Head of Undergraduate Studies, Department of Mechanical Engineering, Colorado State University, Fort Collins CO, USA

VISITING POSITIONS

2015 – present	Adjunct Professor, Centre for Biomaterials Science and Technology School of Mechanical and Building Sciences, Vellore Institute of Technology, Vellore, India

SABBATICAL POSITIONS

2015	Visiting Erskine Fellow, Department of Chemical and Process Engineering, University of Canterbury, Christchurch, NZ
2015	Visiting Researcher, Departamento de Engenharia Mecânica, Pontifícia Universidade Católica do Paraná, Curitiba, Brazil

OTHER POSITIONS

2005 – 2007	Associate Specialist, Department of Physiology, University of California, San Francisco CA, USA
2003 – 2005	Postdoctoral Research Associate, Department of Biomedical Engineering, Boston University, Boston MA, USA

CURRENT JOB DESCRIPTION

40% Teaching
35% Research/Creative Activity
10% Service/Outreach
15% Admin

HONORS AND AWARDS

2019	George T. Abell Outstanding Mid-Career Award, College of Engineering, Colorado State University, Fort Collins CO, USA
2018	Art Corey Award for Outstanding International Contributions, Walter Scott, Jr. College of Engineering, Colorado State University, Fort Collins CO, USA
2017	Teaching Excellence Award, School of Biomedical Engineering, Colorado State University, Fort Collins CO, USA
2016	Best Professor Nominee, Engineering College Council, Colorado State University, Fort Collins CO, USA
2010	George T. Abell Outstanding Early Career Award, College of Engineering, Colorado State University, Fort Collins CO, USA
2006	REAC Award, College of Medicine, University of California, San Francisco CA, USA
2005	SPRInG Award, Boston University, Boston MA, USA

CV SECTION 2: Publications/Scholarly Record

PUBLISHED WORK

Books:
Editor: **Ketul C. Popat**, *Nanotechnology in tissue engineering and regenerative medicine*. (2010) CRC Press, ISBN: 978-1-4398-01410-3.

Refereed Journal Articles: (Google Scholar h-index: 39, Total Citations: 6925, as of February 2020)

1. Roberta M. Sabino, Kirsten Kauk, Liszt Y. C. Madruga, Matt J. Kipper, Alessandro F. Martins and **Ketul C. Popat**. *Enhanced hemocompatibility and antibacterial activity on titania nanotubes with tanfloc/heparin polyelectrolyte multilayers.* Journal of Biomedical Materials Research A, (2020) 108(4) 992-1005.
2. Roberta M. Sabino and **Ketul C. Popat**. *Evaluating Whole Blood Clotting in vitro on Biomaterial Surfaces.* Bioprotocol, (2020) 10(3).
3. Lerato N Madike, Michael Pillay and **Ketul C. Popat**. *Antithrombogenic properties of Tulbaghia violacea–loaded polycaprolactone nanofibers.* Journal of Bioactive and Compatible Polymers, (2020).

4. Renata Francielle Bombaldi de Souza, Fernanda Carla Bombaldi de Souza, Andrea Thorpe, Diego Mantovani, **Ketul C. Popat** and Ângela Maria Moraes. *Phosphorylation of chitosan to improve osteoinduction of chitosan/ xanthan-based scaffolds for periosteal tissue engineering.* International Journal of Biological Macromolecules, (2020) 143 619–632.

5. Alessandro F. Martins, Jessi Vlcek, Tara Wigmosta, Mohammadhasan Hedayati, Melissa M. Reynolds, **Ketul C. Popat** and Matt J. Kipper. *Chitosan/iota-carrageenan and chitosan/pectin polyelectrolyte multilayer scaffolds with antiadhesive and bactericidal properties.* Applied Surface Science, (2020) 502 144282.

6. Sharise B.R. Berton, Guilherme A.M. de Jesus, Roberta M. Sabino, Johny P. Monteiro, Sandro A.S. Venter, Marcos L. Bruschi, **Ketul C. Popat**, Makoto Matsushita, Alessandro F. Martins and Elton G. Bonafé. *Properties of a commercial κ-carrageenan food ingredient and its durable superabsorbent hydrogels.* Carbohydrate Research, (2020) 487 107883.

7. Débora A. de Almeida, Roberta M. Sabino, Paulo R. Souza, Elton G. Bonafé, Sandro A.S. Venter, **Ketul C. Popat**, Alessandro F. Martins and Johny P. Monteiro. *Pectin-capped gold nanoparticles synthesis in-situ for producing durable, cytocompatible, and superabsorbent hydrogel composites with chitosan.* International Journal of Biological Macromolecules, (2020) 147 138-149.

8. Joziel A. da Cruz, Ana B. da Silva, Beatriz B.S. Ramin, Paulo R. Souza, **Ketul C. Popat**, Rafael S. Zola, Matt J. Kipper and Alessandro F. Martins. *Poly(vinyl alcohol)/cationic tannin blend films with antioxidant and antimicrobial activities.* Materials Science & Engineering C, (2020) 107 110357.

9. Ariel C. de Oliveira, Roberta M. Sabino, Paulo R. Souza, Edvani C. Muniz, **Ketul C. Popat**, Matt J. Kipper, Rafael S. Zola and Alessandro F. Martins. Chitosan/gellan gum ratio content into blends modulates the scaffolding capacity of hydrogels on bone mesenchymal stem cells. Materials Science & Engineering C, (2020) 106 110258.

10. Roberta Maia Sabino, Kirsten Kauk, Sanli Movafaghi, Arun Kota, **Ketul C. Popat**. *Interaction of blood plasma proteins with superhemophobic titania nanotube surfaces.* Nanomedicine: Nanotechnology, Biology and Medicine, (2019) 21 102046.

11. Kari Cowden, Marcela Ferreira Dias-Netipanyj, **Ketul C. Popat**. *Effects of titania nanotube surfaces on osteogenic differentiation of human adipose-derived stem cells.* Nanomedicine: Nanotechnology, Biology and Medicine, (2019) 17 380-390.

12. Kari Cowden, Marcela Ferreira Dias-Netipanyj, **Ketul C. Popat**. *Adhesion and Proliferation of Human Adipose-Derived Stem Cells on Titania Nanotube Surfaces*. Regenerative Engineering and Translational Medicine, (2019) 4(5) 435-445.

13. Paulo C. F. da Camara, Rosangela C. Balaban, Mohammadhasan Hedayati, **Ketul C. Popat**, Alessandro F. Martins and Matt J. Kipper. *Novel cationic tannin/glycosaminoglycan-based polyelectrolyte multilayers promote stem cells adhesion and proliferation.* RSC Advances, (2019) 9 25836

14. Sanli Movafaghi, Wei Wang, David L. Bark, Lakshmi P. Dasi, Arun K. Kota, **Ketul C. Popat**. *Hemocompatibility of super-repellent surfaces: current and future*. Materials Horizons, (2019) 6 1596-1610.

15. Marcela Ferreira Dias-Netipanyj, Kari Cowden, Luciane S. Santos, Sheron Campos Cogo, Selene Elifio-Esposito, Paulo Soares, **Ketul C. Popat**. *Effect of crystalline phases of titania nanotube arrays on adipose derived stem cell adhesion and proliferation.* Materials Science and Engineering: C, (2019) 103 109850.

16. Beatriz BS Ramin, Késsily B. Rufato, Roberta M. Sabino, **Ketul C. Popat**, Matt J. Kipper, Alessandro F. Martins, Edvani C. Muniz. *Chitosan/iota-carrageenan/curcumin-based materials performed by precipitating miscible solutions prepared in ionic liquid.* Journal of Molecular Liquids, (2019) 290 11199.

17. Hannah Pauly, Daniel Kelly, **Ketul C. Popat**, Jeremiah Easley, Ross Palmer, Tammy L Haut Donahue. *Mechanical properties of a hierarchical electrospun scaffold for ovine anterior cruciate ligament replacement*. Journal of Orthopaedic Research, (2019) 37(2) 421-430.

18. Renata Francielle Bombaldi de Souza, Fernanda Carla Bombaldi de Souza, Cristiano Rodrigues, Bernard Drouin, **Ketul C. Popat**, Diego Mantovani, Ângela Maria Moraes. *Mechanically-enhanced polysaccharide-based scaffolds for tissue engineering of soft tissues*. Materials Science and Engineering: C, (2019), 94 364-375.

19. Fernanda Carla Bombaldi de Souza, Renata Francielle Bombaldi de Souza, Bernard Drouin, **Ketul C. Popat**, Diego Mantovani, Ângela Maria Moraes. *Polysaccharide-based tissue-engineered vascular patches.* Materials Science and Engineering: C, (2019) 104 109973

20. Bruno R. Machado, Sharise B. Roberto, Elton G. Bonafé, Samira E.A. Camargo, Carlos H.R. Camargo, **Ketul C. Popat**, Matt J. Kipper, Alessandro F. Martins. *Chitosan Imparts Better Biological Properties for Poly (ε-caprolactone) Electrospun Membranes than Dexamethasone*. Journal of Brazilian Chemical Society, (2019) 30(8) 1741-1750.

21. Yanyi Zang, **Ketul C. Popat**, Melissa M Reynolds. *Nitric oxide-mediated fibrinogen deposition prevents platelet adhesion and activation*. Biointerphases, (2018), 13 06E403.

22. Luciane S. Santos, Sheron Cogo, Marcela Dias-Netipanyj, Shelon Pinto, Selene Espósito, **Ketul C. Popat** and Paulo Soares. *Bioactive and antibacterial boron doped TiO2 coating obtained by PEO*. Applied Surface Science, (2018), 458 49-58.

23. André LR Rangel, Javier AM Chaves, Ana LA Escada, Reginaldo T. Konatu, **Ketul C. Popat**, Ana P Rosifini Alves Claro. *Modification of the Ti15Mo alloy surface through TiO2 nanotube growth - an in vitro study*. Journal of Applied Biomaterials and Functional Biomaterials, (2018), 16(4) 222-229.

24. Paulo Soares, Marcela Ferreira Dias-Netipanyj, Selene Elifio-Esposito, Victoria Leszczak, **Ketul C. Popat**. *Effects of calcium and phosphorus incorporation on the properties and bioactivity of TiO2 nanotubes.* Journal of Biomaterials Applications, (2018), 33(3) 410-421.

25. Alessandro F. Martins, Suelen P. Facchi, Paulo C. F. da Câmara, Samira E. A. Camargo, Carlos H. R. Camargo, **Ketul C. Popat** and Matt J. Kipper. *Novel poly(e-caprolactone)/amino-functionalized tannin electrospun membranes as scaffolds for tissue engineering*. Journal of Colloid and Interface Science, (2018), 525 21-30.

26. Luciane S. Santos, **Ketul C. Popat** and Paulo Soares. *Bactericidal activity and cytotoxicity of a zinc doped PEO titanium coating*. Thin Solid Films, (2018), 660 477-483.

27. Rachael Simon-Walker, John Cavicchia, David A. Prawel, Lakshmi Prasad Dasi, Susan P. James and **Ketul C. Popat**. *Hemocompatibility of hyaluronan enhanced linear low-density polyethylene for blood contacting applications*. Journal of Biomedical Materials Research B, (2018), 106(5) 1964-1975.

28. Kevin Bartlett, Sanli, Movafaghi, Lakshmi Prasad Dasi, Arun K. Kota and **Ketul C. Popat**. *Antibacterial activity on superhydrophobic titania nanotube arrays.* Colloids and Surfaces B, (2018), 166 179-186.

29. Ana Paula Rosifini Alves Claro, Reginaldo T. Konatu, Ana Lúcia do Amaral Escada, Miriam Celide Souza Nunes, Cláudia Vianna Maurer-Morelli, Marcela Ferreira Dias-Netipanyj, **Ketul C. Popat**, Diego Mantovani. *Incorporation of silver nanoparticles on Ti7.5Mo alloy surface containing TiO2 nanotubes arrays for promoting antibacterial coating – In vitro and in vivo study*. Applied Surface Science, (2018), 455 780-788.

30. Jessica G. Martins, Samira E. A. Camargo, Terrance T. Bishop, **Ketul C. Popat**, Matt J. Kipper, and Alessandro F. Martins. *Pectin-chitosan membrane scaffold imparts controlled stem cell adhesion and proliferation.* Carbohydrate Polymers, (2018), 197 47-56.

31. Mauricio Rangel Seixas, Celso Bortolini Jr, Adelvam Pereira Jr, Roberto Z Nakazato, **Ketul C Popat** and Ana Paula Rosifini Alves Claro. *Development of a new quaternary alloy Ti–25Ta–25Nb–3Sn for biomedical applications.* Materials Research Express, (2018), 5(2) 025402.

32. Cristiane Aparecida Pereira, Marcela Ferreira Dias-Netipanyt, **Ketul C. Popat** and Ana Paula Rosifini Alves Claro. *Cell and Bacteria-Baterial Interactions on the Ti10Mo8Nb Alloy After Surface Modification.* Materials Research, (2018), 21(4) e20170508.

33. Luciane S. Santos, Dhanna Francisco, Evelyn Leite, Sheron Cogo, Marcela Dias-Netipanyj, Shelon Pinto, Selene Espósito, **Ketul C. Popat** and Paulo Soares. *Bioactivity and Antibacterial Effects of Ag-Ca-P Doped PEO Titania Coatings*. Journal of Advanced Biotechnology and Bioengineering, (2018), 6 6-14.

34. Kevin Bartlet, Sanli Movafaghi, Arun Kota and **Ketul C. Popat**. *Superhemophobic titania nanotube array surfaces for blood contacting medical devices*. RSC Advances, (2017), 7 35466-35476.

35. Praneetha Pulyala, Akshay Singh, Marcela Ferreira Dias-Netipanyj, Sheron Compos Cogo, Luciane S. Santos, Paulo Soares, Vasanth Gopal, V. Suganthan, Geetha Manivasagam, **Ketul C. Popat**. *In-vitro cell adhesion and proliferation of adipose derived stem cell on hydroxyapatite composite surfaces*. Materials Science and Engineering C, (2017), 75 1305-1316.

36. Hannah M. Pauly, Binulal N. Sathy, Dinorath Olvera, Helen O. McCarthy, Daniel J. Kelly, **Ketul C. Popat**, Nicholas J. Dunne, Tammy Lynn Haut Donahue. *Hierarchically Structured Electrospun Scaffolds with Chemically Conjugated Growth Factor for Ligament Tissue Engineering.* Tissue Engineering A, (2017), 23(15-16) 823-836.

37. Hamed Vahabi, Wei Wang, **Ketul C. Popat**, Gibum Kwon, Troy B. Holland, and Arun K. Kota. *Metallic superhydrophobic surfaces via thermal sensitization*. Applied Physics Letters, (2017), 110 251602.

38. David L Bark Jr, Hamed Vahabi, Hieu Bui, Sanli Movafaghi, Brandon Moore, Arun K Kota, **Ketul C. Popat**, Lakshmi P Dasi. *Hemodynamic Performance and Thrombogenic Properties of a Superhydrophobic Bileaflet Mechanical Heart Valve*. Annals of biomedical engineering, (2017), 45(2) 452-463.

39. Marisa Aparecida Souza, João Pedro Aquiles Carobolante, Rosemeire dos Santos Almeida, Marcos Akira d'Ávila, Rachael Simon Walker, **Ketul C. Popat**, Ana Paula Rosifini Alves Claro. *Immobilisation of apatite on Ti30Ta alloy surface by electrospinning of PCL*. Surface Innovations, (2017), 5(2) 68-74.

40. Ana Lucia do Amaral Escada, Nathan Trujillo, **Ketul C. Popat**, Ana Paula Rosifini Alves Claro. *Human Dermal Fibroblast Adhesion on Ti-7.5Mo after TiO2 Nanotubes Growth.* Materials Science Forum, (2017), 899 195-200.

41. Rachael Simon-Walker, Raimundo Romero, Joseph M Staver, Yanyi Zang, Melissa M Reynolds, **Ketul C Popat**, Matt J Kipper. *Glycocalyx-Inspired Nitric Oxide-Releasing Surfaces Reduce Platelet Adhesion and Activation on Titanium*. ACS Biomaterials Science & Engineering, (2017), 3(1) 68-77.

42. Sanli Movafaghi, Victoria Leszczak, Wei Wang, Jonathan A Sorkin, Lakshmi P Dasi, Arun K Kota, **Ketul C. Popat**. *Hemocompatibility of Superhemophobic Titania Surfaces*. Advanced Healthcare Materials, (2017), 6(4) 1600717

43. Hannah M Pauly, Daniel J Kelly, **Ketul C. Popat**, Nathan A Trujillo, Nicholas J Dunne, Helen O McCarthy, Tammy L Haut Donahue. *Mechanical properties and cellular response of novel electrospun nanofibers for ligament tissue engineering: Effects of orientation and geometry*. Journal of the mechanical behavior of biomedical materials, (2016), 61 258-270.

44. Vinod B Damodaran, Divya Bhatnagar, Victoria Leszczak, **Ketul C Popat**. *Titania nanostructures: a biomedical perspective*. RSC Advances, (2015), 5(47) 37149-37171

45. Victoria Leszczak, Dominique A Baskett and **Ketul C Popat**. *Endothelial Cell Growth and Differentiation on Collagen-Immobilized Polycaprolactone Nanowire Surfaces*. Journal of Biomedical Nanotechnology, (2015), 11(6) 1080-1092.

46. Jonathan A Sorkin, Stephen Hughes, Paulo Soares and **Ketul C Popat**. *Titania nanotube arrays as interfaces for neural prostheses.* Materials Science and Engineering C, (2015), 49 735-745.

47. Patricia Capellato, Barbara S. Smith, **Ketul C. Popat** and Ana PR Alves Claro. *Cellular Functionality on Nanotubes of Ti-30Ta Alloy.* Materials Science Forum (2015) 805 61-64.

48. Patricia Capellato, Nicholas A Riedel, John D Williams, João PB Machado, **Ketul C Popat** and Ana PR Alves Claro. *Ion Bean Etching on Ti-30Ta Alloy for Biomedical Application.* Materials Science Forum, (2015), 805 57-60.

49. Maxim A Shevtsov, Natalia Yudintceva, Miralda Blinova, George Pinaev, Oleg Galibin, Igor Potokin, **Ketul C Popat** and Mark Pitkin. *Application of the skin and bone integrated pylon with titanium oxide nanotubes and seeded with dermal fibroblasts*. Prosthetics and orthotics international, (2015), 0309364614550261.

50. Victoria Leszczak and **Ketul C Popat**. Direct co-culture of endothelial and smooth muscle cells on poly (ε-caprolactone) nanowire surfaces. RSC Advances, (2014), 4(101) 57929-57934.

51. Victoria Leszczak and **Ketul C. Popat**. *Improved In Vitro Blood Compatibility of Polycaprolactone Nanowire Surfaces*. ACS Applied Materials and Interfaces, (2014), 6(18) 15913-15924.

52. Victoria Leszczak and **Ketul C. Popat**. *Smooth Muscle Cell Functionality on Collagen Immobilized Polycaprolactone Nanowire Surfaces*. Journal of Functional Biomaterials, (2014), 5(2) 58-77.

53. Nathan A. Trujillo and **Ketul C. Popat**. *Increased Adipogenic and Decreased Chondrogenic Differentiation of Adipose Derived Stem Cells on Nanowire Surfaces.* Materials, (2014), 7(4) 2605-2630.

54. Patricia Capellato, Ana L. A. Escada, **Ketul C. Popat** and Ana P. R. Alves Claro. *Interaction between mesenchymal stem cells and Ti-30Ta alloy after surface treatment.* Journal of Biomedical Materials Research A, (2014) ,102(7) 2147-2156.

55. Victoria Leszczak, Laura Place, Natalee Franz, **Ketul C. Popat** and Matthew J. Kipper. *Nanostructured Biomaterials from Electrospun Demineralized Bone Matrix: A Survey of Processing and Crosslinking Strategies*. ACS Applied Materials and Interfaces, (2014) ,6(12) 9328-9337.

56. Bhawanjali Saxena, Revathi A, **Ketul C. Popat** and Geetha Manivasagam. *Surface modification of Ti-13Nb-13Zr and Ti-6Al-4V using electrophoretic deposition (EPD) for enhanced cellular interaction*. Material Technology, (2014), 29(B1) B54-B58.

57. Brad J Farrell, Boris I Prilutsky, Jana M Ritter, Sean Kelley, **Ketul C. Popat** and Mark Pitkin. *Effects of pore size, implantation time, and nano-surface properties on rat skin ingrowth into percutaneous porous titanium implants*. Journal of Biomedical Materials Research A, (2014), 102(5) 1305-1315.

58. David A. Prawel, Harold Dean, Marcio Forleo, Nicole Lewis, Justin Gangwish, **Ketul C. Popat**, Lakshmi Prasad Dasi and Susan P. James. *Hemocompatibility and Hemodynamics of Novel Hyaluronan–Polyethylene Materials for Flexible Heart Valve Leaflets.* Cardiovascular Engineering and Technology, (2014), 5(1) 70-81.

59. Vinod B. Damodaran, Victoria Leszczak, Kathryn Wold, Sarah Lantvit, **Ketul C. Popat** and Melissa Reynolds. *Antithrombogenic properties of a nitric oxide-releasing dextran derivative: evaluation of platelet activation and whole blood clotting kinetics*. RSC Advances, (2013), 3(46) 24406-24414.

60. Nathan Trujillo and **Ketul C. Popat**. *Osteogenic Differentiation of Adipose Derived Stem Cells on Polycaprolactone Nanowire Surfaces.* Journal of Biomaterials and Tissue Engineering, (2013), 3(5) 542-553.

61. Samuel Bechara and **Ketul C. Popat**. *Micro-Patterned Nanowire Surfaces Encourage Directional Neural Progenitor Cell Adhesion and Proliferation.* Journal of Biomedical Nanotechnology, (2013), 9(10) 1698-1706.

62. Victoria Leszczak, Barbara S. Smith and **Ketul C. Popat**. *Hemocompatibility of polymeric nanostructured surfaces*. Journal of Biomaterials Science: Polymer Edition, (2013), 24(13) 1529-1548.

63. David A. Prawel, Matthew J. Kipper, **Ketul C. Popat** and Susan P. James. *Electrohydrodynamic atomization technique for applying phospholipid coatings to titanium implant materials.* Materials Letters, (2013), 97 81-85.

64. Barbara S. Smith, Patricia Capellato, Sean Kelley, Mercedes Gonzalez-Juarrero and **Ketul C. Popat**. *Reduced in vitro immune response on titania nanotube arrays compared to titanium surface.* Biomaterials Science, (2013), 1(3) 322-332.

65. Patricia Capellato, Nicholas A. Riedel, John D. Williams, Joao P. B. Machado, **Ketul C. Popat**, Ana P. R. Alves Claro. *Surface Modification on Ti-30Ta Alloy for Biomedical Application*. Engineering, (2013), 5 707-713.

66. Marisa Aparecida Souza, Maria Isabel Eboli Kimaid, Patrícia Capellato, RT Konatu, Maria Cristina Rosifini Alves Rezende, **Ketul C. Popat**, Ana Paula Rosifini Alves Claro. *Improved response of the Ti30Ta experimental alloy after surface treatment for dental applications*. Dental Materials, (2013), 29(1) 96.

67. Timothy T. Ruckh, Derek A. Carroll, Justin R. Weaver and **Ketul C. Popat**. *Mineralization Content Alters Osteogenic Responses of Bone Marrow Stromal Cells on Hydroxyapatite/Polycaprolactone Composite Nanofiber Scaffolds*. Journal of Functional Biomaterials, (2012), 3(4) 776-798.

68. Barbara S. Smith and **Ketul C. Popat**. *Titania Nanotube Arrays as Interfaces for Blood-Contacting Implantable Devices: A Study Evaluating the Nanotopography-Associated Activation and Expression of Blood Plasma Components.* Journal of Biomedical Nanotechnology, (2012), 8(4) 642-658.

69. Ashok Prasad, Dustin R. Berger and **Ketul C. Popat**. *PCL Nanopillars Versus Nanofibers: A Contrast in Progenitor Cell Morphology, Proliferation, and Fate Determination.* Advanced Engineering Materials, (2012), 14(6) B351-B356.

70. Timothy T. Ruckh, Racheal A. Oldinski, Derek A. Carroll, Krasimira Mikhova, James D. Bryers and **Ketul C. Popat**. *Antimicrobial effects of nanofiber poly(caprolactone) tissue scaffolds releasing rifampicin.* Journal of Materials Science-Materials in Medicine, (2012) 23(6), 1411-1420.

71. Patricia Capellato, Barbara S. Smith, **Ketul C. Popat** and Ana Paula Rosifini Alves Claro. *Fibroblast functionality on novel Ti30Ta nanotube array.* Materials Science and Engineering: C, (2012), 32(7) 2060-2067.

72. Nathan A. Trujillo, Rachael A. Oldinski, Hongyan Ma, James D. Bryers, John D. Williams and **Ketul C. Popat**. *Antibacterial effects of silver-doped hydroxyapatite thin films sputter deposited on titanium.* Materials Science and Engineering: C, (2012), 32(8) 2135–2144.

73. Nicholas A. Riedel, Samuel L. Bechara, **Ketul C. Popat** and John D. Williams. *Ion etching for sharp tip features on titanium and the response of cells to these surfaces.* Materials Letters, (2012), 81 158-161.

74. Fabio Zomer Volpato, Jorge Almodovar, Kristin Erickson, **Ketul C. Popat**, Claudio Migliaresi and Matt J. Kipper. *Preservation of FGF-2 bioactivity using heparin-based nanoparticles, and their delivery from electrospun chitosan fibers.* Acta Biomaterialia, (2012) 8(4), 1551-1559.

75. Nicholas A. Riedel, Tyler B. Cote, Samuel L. Bechara, **Ketul C. Popat** and John D. Williams. *Low energy helium ion texturization of titanium and relevance to biomedical applications.* Surface and Coatings Technology, (2012), 206(23) 4750-4755.

76. Vinod B. Damodaran, Conan J. Fee and **Ketul C. Popat**. *Modeling of PEG grafting and prediction of interfacial force profile using X-ray photoelectron spectroscopy.* Surface and Interface Analysis, (2012), 44(2) 144-149.

77. S. Sakura Minami, Binggui Sun, **Ketul C. Popat**, Tiina Kauppinen, Mike Pleiss, Yungui G. Zhou, Michael E. Ward, Paul Floreancig, Lennart Mucke, Tejal A. Desai and Li Gan. *Selective targeting of microglia by quantum dots.* Journal of Neuroinflammation, (2012), 9(22).

78. Nicholas A. Riedel, Barbara S. Smith, John D. Williams and **Ketul C. Popat**. *Improved thrombogenicity on oxygen etched Ti6Al4V surfaces.* Materials Science & Engineering: C, (2012), 32(5) 1196-1203.

79. Nicholas A. Riedel, John D. Williams and **Ketul C. Popat**. *Ion beam etching titanium for enhanced osteoblast response.* Journal of Materials Science, (2011), 46(18) 6087-6095.

80. Samuel L. Bechara, Lucas Wadman and **Ketul C. Popat**. *Electroconductive polymeric nanowire templates facilitates in vitro C17.2 neural stem cell line adhesion, proliferation and differentiation.* Acta Biomaterialia, (2011), 7(7) 2892-2901.

81. Barbara S. Smith, Sorachon Yoriya, Thomas Johnson and **Ketul C. Popat**. *Dermal fibroblast and epidermal keratinocyte functionality on titania nanotube arrays.* Acta Biomaterialia, (2011), 7(6) 2686-2696.

82. Racheal A. Oldinski, Timothy T. Ruckh, Mark P. Staiger, **Ketul C. Popat** and Susan P. James. *Dynamic mechanical analysis and biomineralization of hyaluronan-polyethylene copolymers for potential use in osteochondral defect repair.* Acta Biomaterialia, (2011), 7(3) 1184-1191.

83. Samuel L. Bechara, Anna. Judson and **Ketul C. Popat**. *Template synthesized poly(epsilon-caprolactone) nanowire surfaces for neural tissue engineering.* Biomaterials, (2010), 31(13) 3492-3501.

84. Vinod B. Damodaran, Conan J. Fee, Timothy T. Ruckh and **Ketul C. Popat**. *Conformational Studies of Covalently Grafted Poly(ethylene glycol) on Modified Solid Matrices Using X-ray Photoelectron Spectroscopy.* Langmuir, (2010), 26(10) 7299-7306.

85. Barbara S. Smith, Sorachon Yoriya, Laura Grissom, Craig A. Grimes and **Ketul C. Popat**. *Hemocompatibility of titania nanotube arrays.* Journal of Biomedical Materials Research Part A, (2010), 95A(2) 350-360.

86. Vinod B. Damodaran, Conan J. Fee and **Ketul C. Popat**. *Prediction of protein interaction behaviour with PEG-grafted matrices using X-ray photoelectron spectroscopy.* Applied Surface Science, (2010), 256(16) 4894-4901.

87. Timothy T. Ruckh, Kuldeep Kumar, Matt J. Kipper and **Ketul C. Popat**. *Osteogenic differentiation of bone marrow stromal cells on poly(epsilon-caprolactone) nanofiber scaffolds.* Acta Biomaterialia, (2010), 6(8) 2949-2959.

88. Joshua R. Porter, Andrew Henson and **Ketul C. Popat**. *Biodegradable poly(epsilon-caprolactone) nanowires for bone tissue engineering applications.* Biomaterials, (2009) 30(5) 780-788.

89. Joshua R. Porter, Andrew Henson, Stewart Ryan and **Ketul C. Popat**. *Biocompatibility and Mesenchymal Stem Cell Response to Poly(epsilon-Caprolactone) Nanowire Surfaces for Orthopedic Tissue Engineering.* Tissue Engineering Part A, (2009), 15(9) 2547-2559.

90. Joshua R. Porter, Timothy T. Ruckh and **Ketul C. Popat**. *Bone Tissue Engineering: A Review in Bone Biomimetics and Drug Delivery Strategies.* Biotechnology Progress, (2009), 25(6) 1539-1560.

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Conference Proceedings:

1. Nicole L. Ramo, Jasmine Nejad, **Ketul C. Popat** and Kimberly Catton. Student Assessment of Active Learning Elements in 100-level Introductory Biomedical Engineering Course. In: 2018 ASEE Annual Conference & Exposition (2018).
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6. Dustin R. Berger, **Ketul C. Popat** and Ashok Prasad. *PCL Nanopillars Vs Nanofibers: A Stark Contrast in Progenitor Cell Morphology, Proliferation, and Fate Determination.* In: Molecular Biology of the Cell, (2011) 22.
7. Ayca Yalcin, **Ketul C. Popat**, Matthew Anthes-Washburn, Nabil Chhbouki, Tejal A. Desai, M. Selim Unlu and Bennett B. Goldberg. *Microring resonators for biochemical sensing.* In: 2005 Conference on Lasers & Electro-Optics (CLEO), Vols 1-3, (2005) 2163-2165.
8. Barrett J. Nehilla, **Ketul C. Popat**, Sarwat Chowdhury, Robert F. Standaert, David R. Pepperberg and Tejal A. Desai. *Assembly and characterization of a Muscimol-immobilized silicon surface.* In: Investigative Ophthalmology & Visual Science, (2004) 45 U383-U383.
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CONTRACTS AND GRANTS

Externally-funded Projects as PI: (Note: Multiple contracts to single project are listed as one item.)

1. (2017 – 2021), Superhydrophobic Heart Valve Prosthesis, Co-PIs: Arun K. Kota and David Bark, $1,066,142, National Institutes of Health, 1R01HL135505 (Multi-PI grant, subcontracted from Ohio State University, Total Budget: $2,881,704).

   The objective of this project is to develop an advanced superhydrophobic mechanical heart valve that is engineered with flow control technology for maximum blood compatibility. State-of-the-art manufacturing and experimental studies in the areas of materials sciences and flow control theory are utilized to construct this novel heart valve. The proposed innovative approach combines these methods and techniques in a unique interdisciplinary effort to produce high performance mechanical heart valves. This research will lead to a dramatic improvement in heart valve and other mechanical support technology. As a PI, I am leading the evaluation of biocompatibility and hemocompatibility of the materials used to develop advanced superhydrophobic mechanical heart valve.

2. (2017 – 2019), Superomniphobic Flow Controlled Prosthetic Heart Valve, Co-PI: Arun Kota, $151,936, National Institutes of Health 1R21HL139208 (Multi-PI grant, subcontracted from Ohio State University, Total Budget: $407,920).

   The objective of this project is to develop an advanced superomniphobic mechanical heart valve that is engineered with flow control technology for maximum blood compatibility. State-of-the-art manufacturing and experimental studies in the areas of materials sciences and flow control theory are utilized to construct this novel heart valve. The proposed innovative approach combines these methods and techniques in a unique interdisciplinary effort to produce high performance mechanical heart valves. This research will lead to a dramatic improvement in heart valve and other mechanical support technology. As a PI, I am leading the evaluation biocompatibility and hemocompatibility of the materials used to develop advanced superomniphobic mechanical heart valve.

3. (2013 – 2018) Hyaluronan Enhanced Polymeric Heart Valve Prosthesis, Co-PIs: Susan P. James and Christopher Orton, $533,361, National Institutes of Health, 5R01HL119824 (subcontracted from Ohio State University, Consortium PI: Lakshmi Prasad Dasi, Total Budget: $999,673).

   The objective of this project was to develop an advanced polymeric heart valve that is engineered for maximum blood compatibility through the use of cross-linked hyaluronan, which is present in all tissues. State-of-the-art manufacturing, experimental studies in the areas of mechanics and materials sciences are utilized to construct this novel heart valve. The proposed innovative approach combined these methods and techniques to optimize a highly innovative concept in a unique interdisciplinary effort to produce durable and highly functional polymeric heart valves. This novel technology will lead to a dramatic improvement in heart valve technology. As a PI, I was leading the evaluation of biocompatibility and hemocompatibility of the materials used to develop advanced polymeric heart valve.

4. (2015 – 2017) Cost Effective Trileaflet Biopolymeric Heart Valve for India, Co-PIs: Susan P. James and Christopher Orton, $30,000, National Institutes of Health 1R03EB014255 (subcontracted from Ohio State University, Consoritum PI: Lakshmi Prasad Dasi, Total Budget: $223,050).

We have developed an advanced polymeric heart valve that is engineered for maximum biocompatibility through the use of cross-linked Hyaluronan. Testing, validation, and optimization of this novel low-cost technology is proposed as a joint effort between the US and Indian teams, while laying the ground work towards commercialization in India through TTK Healthcare (India's largest heart valve manufacturer). As a PI, I was leading the evaluation of biocompatibility and hemocompatibility of the materials used to develop advanced polymeric heart valves

5. (2015 – 2016) Bark: Biomechanical Response of Platelets to Superhydrophobic Surface in Mechanical Heart Valves and Other Blood-Contacting Medical Devices, $57,962.00, National Institutes of Health 1F32HL129730.

   Medical devices used to treat cardiovascular disease, e.g. prosthetic heart valves and stents, create a thrombotic (blood clot) risk in patients that is clinically addressed with anticoagulation and antiplatelet therapies. Experimental evidence indicates that surfaces that strongly repel water, like a lotus leaf, may be effective at reducing the risk for blood clots. Therefore, we are evaluating these surfaces in a flow environment typical of medical devices to assess their efficacy for future use in medical devices. As a PI, my role was to mentor Dr. David Bark.

6. (2014 – 2018) Fabrication of Titania Nanotubes on Titanium Implants AND Platelet Adhesion & Activation on Implant Materials, $13,831, Bitol LLC.

   Bitol Designs, LLC is a privately held start-up company in Concord, CA. It is categorized under surgical and medical instruments. They have rapid prototyping, CNC machining and 3D printing capabilities, to assist in the development of the technology. As a PI, I was leading the initial biocompatibility studies on titanium devices for application in neural shunts.

7. (2014 – 2015) Novel silicone-based materials for ocular lenses, Co-PIs: Susan P James and Travis Bailey, $50,000, Colorado Office of Economic Development and International Trade.

   We are developing novel silicone-based materials for ocular lenses that are more hydrophilic and less inflammatory than conventional ocular lenses. These silicone hydrogels are further enhanced with hyaluronan (HA) in a manner that should not change mechanical or optical properties but makes the lens much more hydrophilic and reduces the potential for inflammatory responses. As a PI, I was leading the protein interaction and inflammatory response on hyaluronan enhanced surfaces.

8. (2012 – 2014) Nanostructured Constructs from Human Tissue: Engineering DBM and DAT, Multi-PI: Matthew Kipper, $28,310, AlloSource Inc.

   To realize the potential of donated human tissues to develop new tissue constructs, this work will develop techniques to tune the nanostructure of demineralized bone matrix (DBM). We are also very interested in extending this technology to include decellularized adipose tissue (DAT). Engineering nanostructured materials from human tissues is a simple, low-cost, reproducible strategy for imparting stable biological signals. This strategy may rival or surpass more expensive strategies like growth factor and gene delivery. As a PI, I was leading the efforts related to evaluating cellular interaction with the engineered materials.

9. (2010 – 2014) Nanoscale Polymeric Templates for Orthopedic Tissue Engineering, $324,081, National Institutes of Health 1R21AR057341.

Autogenous cancellous bone is currently the most widely used bone graft material. However, there are several problems associated with autogenous cancellous bone grafts such as additional scar tissue formation, donor site morbidity, pain, prolonged rehabilitation, increased risk of deep infection, inflammation and restricted availability. These problems have motivated the design of synthetic bone scaffolds as a replacement for autogenous cancellous bone grafts. This proposed project outlines the motivation and reasoning behind the development of the polymeric nanowire surfaces as a bone graft material. As a PI, I was responsible for all the aspects of the proposed research.

10. (2010 – 2011) Deposition and Evaluation of Hydroxyapatite Biological Coatings, Co-PI: John W. Williams, $81,940, Plasma Controls LLC.

    Plasma based ion implantation and deposition (PBII&D) is an advanced surface modification and coating tool that will be developed for biomedical applications. In this research, PBII&D will be used to deposit silver-doped hydroxyapatite coatings on titanium implant materials, improving an implant's ability to both integrate with existing tissue and resist bacterial infection. More generally, the proposed plasma system is useful for creating versatile and effective biomaterials and biocoatings. As a PI, I was responsible for evaluating the biocompatibility and anti-microbial activity of materials developed by Plasma Controls.

11. (2009 – 2012) Multifunctional Nanostructured Interfaces for Orthopedic Implants, $57,000, Colorado Office of Economic Development and International Trade.

    This work proposes application of novel nanostructured films of controllable architectures spanning the nano to micro-dimensional scales, as interfaces for existing orthopedic implants to improve their osseointegration capabilities. Such control over the nanoscale interface can prove advantageous for applications in biomaterials and tissue engineering, particularly in orthopedic implant materials. Further these nanostructured interfaces of controllable architectures can also be used to delivery drugs locally at the site of implantation. As a PI, I was responsible for all the aspects of the proposed research.

12. (2008 – 2012) Nanostructured Titania for Orthopedic Biomaterials, $275,000, National Science Foundation 0827827. A goal of current orthopedic biomaterials research is to design implants that induce controlled and guided growth of tissue, and rapid healing. To achieve these goals a better understanding of events at the bone-material interface is needed, as well as the development of new materials and approaches that promote osseointegration. We propose the use of well controlled nanostructured titania interfaces to enhance implant osseointegration. The integration of controlled nanoscale titania architectures into existing implant materials can promote osteoblast differentiation and matrix production and enhance short- and long-term osseointegration. As a PI, I was responsible for all the aspects of the proposed research.

Externally-funded Projects as Co-PI:

1. (2017 – 2020) Tuning Interfacial Biomolecule Interactions with Massively Parallel Nanopore Arrays, PI: Matthew Kipper, Co-PI: Christopher Snow, $410,894, National Science Foundation 1704901.

    In this project, we will develop new applications for nanoporous protein crystals. The crystals are prepared by Chris Snow's lab (CSU, Chemical and Biological Engineering). Together, we are developing new methods for measuring protein-DNA interactions in porous protein crystals. As a co-PI, I am contributing towards nanomaterials characterization.

2. (2013 – 2014) Bone Matrix Nanofiber Scaffolds for Regenerative Medicine, PI: Matthew Kipper, $54,000, Colorado Office of Economic Development and International Trade.

   To realize the potential of donated human tissues to develop new tissue constructs, this work will develop techniques to tune the nanostructure of demineralized bone matrix (DBM). Engineering nanostructured materials from human tissues is a simple, low-cost, reproducible strategy for imparting stable biological signals. This strategy may rival or surpass more expensive strategies like growth factor and gene delivery. As a co-PI, I was leading the efforts related to evaluating cellular interaction with the engineered materials.

3. (2013 – 2015) Hyaluronan Enhanced Polymeric Heart Valve Prosthesis, PI: Lakshmi Prasad Dasi, Co-PIs: Susan P. James, Christopher Orton, David Prawel. $707,004, National Institutes of Health, 5R01HL119824

   The objective of this project was to develop an advanced polymeric heart valve that is engineered for maximum blood compatibility through the use of cross-linked hyaluronan, which is present in all tissues. State-of-the-art manufacturing, experimental studies in the areas of mechanics and materials sciences are utilized to construct this novel heart valve. The proposed innovative approach combined these methods and techniques to optimize a highly innovative concept in a unique interdisciplinary effort to produce durable and highly functional polymeric heart valves. This novel technology will lead to a dramatic improvement in heart valve technology. As a co-PI, I was leading the evaluation of biocompatibility and hemocompatibility of the materials used to develop advanced polymeric heart valve.

4. (2013 – 2018) Development of a Novel Bioinspired Fiber Reinforced Hydrogel that Recapitulates Developmental Processes to Regenerate the Bone-Ligament Interface, PI: Tammy Haut Donahue, $390,000, National Science Foundation 1306741.

   Although numerous soft-tissue replacement constructs have been developed previously, less attention has been dedicated in recreating the interface between the engineered replacement soft-tissue and the hard bone. The proposed tissue construct will be prepared from a composite hydrogel reinforced with polycaprolactone nanofibers and seeded by mesenchymal stem cells (MSCs). In order to mimic the structure of native soft tissue-to-bone interface, biochemical and biophysical cues will be modulated along the length of the tissue construct to drive the differentiation of MSCs down the chondrogenic, fibrocartilaginous, and ligamentous pathways. As a co-PI, I was assisting with the studies related to MSC interaction with the scaffolds.

5. (2011 – 2012) Developing the Cardiovascular Applications of BioPoly, PI: Susan P James, Co-PI: Lakshmi Prasad Dasi, $36,386, Colorado Office of Economic Development and International Trade.

   The objective of this project was to develop an advanced material for maximum blood compatibility through the use of cross-linked hyaluronan, which is present in all tissues. As a co-PI, I was assisting in the evaluation of biocompatibility and hemocompatibility of the materials used to develop advanced polymeric heart valve.

6. (2010 – 2011) Evaluation of Hydroxyapatite Coatings Deposited using Novel Plasma Based Ion Implantation and Deposition, PI: John Williams, $27,700, Colorado Office of Economic Development and International Trade.

   In this project, PBII&D will be used to deposit silver-doped hydroxyapatite coatings on titanium implant materials, improving an implant's ability to both integrate with existing tissue and resist bacterial infection. More generally, the proposed plasma system is useful

for creating versatile and effective biomaterials and biocoatings. As a co-PI, I was assisting with the biocompatibility of materials developed.

Externally-Funded Pending Projects as PI:

- (2019 – 2023) Multifunctional Stent Interfaces, Co-PI: Matt Kipper, Melissa Reynolds, $2,024,768.92, National Institutes of Health.

Externally-Funded Pending Projects as Co-PI:

- (2019 – 2023) Hyaluronan Enhanced Transcatheter Aortic Valve Replacement, PI: Susan P. James, Co-PI: David Prawel, $1,042,063.76, National Institutes of Health

Internally-Funded Awards:

- (2013 – 2014) Bone Matrix Nanofiber Scaffolds for Regenerative Medicine, PI: Matthew Kipper, $40,000, Cancer Supercluster Colorado State University.

  To realize the potential of donated human tissues to develop new tissue constructs, this work will develop techniques to tune the nanostructure of demineralized bone matrix (DBM). Engineering nanostructured materials from human tissues is a simple, low-cost, reproducible strategy for imparting stable biological signals. This strategy may rival or surpass more expensive strategies like growth factor and gene delivery. As a co-PI, I was leading the efforts related to evaluating cellular interaction with the engineered materials.

PAPERS PRESENTED / SYMPOSIA / INVITED LECTURES / PROFESSIONAL MEETINGS / WORKSHOPS

Note: * indicates the presenter.

Invited Lectures:

1. **Ketul C. Popat***, *Engineering material surfaces for blood contacting medical devices*, The 2nd World Summit on Advances in Science, Engineering and Technology, October 2019, Indianapolis, USA.
2. **Ketul C. Popat***, *Engineering material surfaces for blood contacting medical devices*, 2019 SBPMAT Conference, September 2019, Balneário Camboriú, Brazil.
3. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, OBI 2019 Conference, October 2019, Sao Paulo, Brazil.
4. **Ketul C. Popat***, *Engineering Material Surfaces for Cardiovascular Applications,* **Plenary Talk**, 35th Annual Meeting of the Canadian Biomaterials Society, May 2019, Quebec City, Canada.
5. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, May 2018, Laval University, Canada.
6. **Ketul C. Popat***, Smart Stent Interfaces, June 2018, Simposio De Regeneracao Tecidual E Biomaterias, Belo Horizonte, Brazil.
7. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, July 2018, BioMET 2018 Conference, Vellore, India.

8. **Ketul C. Popat***, *Engineering material surfaces for blood contacting medical devices*, March 2018, Institute of Hybrid Materials, Qingdao University, Qingdao, China.

9. **Ketul C. Popat*,** *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, January 2018, Centre for Biomaterials Science and Technology, Vellore Institute of Technology, Vellore, India.

10. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, December 2017, Department of Chemical Engineering, Universidade Estadual de Campinas, Campinas, Brazil.

11. Kevin Bartlett, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat***, *Superhemophobic surfaces for blood contacting medical devices*, COBEM 2017 Conference, Curitiba, Brazil.

12. Kevin Bartlett, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat***, *Superhemophobic surfaces for blood contacting medical devices*, eMRS Fall 2017 Conference, Warsaw, Poland.

13. Kevin Bartlett, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat***, *Superhemophobic surfaces for blood contacting medical devices*, ICTERM 2017 Conference, Vanderbijlpark, South Africa.

14. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, March 2017, Amrita Center of Nanosciences, Kochi, India.

15. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, March 2017, PSG Institutes of Advanced Studies, Coimbatore, India.

16. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, March 2017, Department of Biological Engineering, Indian Institute of Technology, Gandhinagar, India.

17. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, January 2017, Department of Materials Science and Engineering, Washington State University, Pullman WA.

18. **Ketul C. Popat*,** *Superhemophobic surfaces for blood contacting medical devices*, January 2017, Centre for Biomaterials Science and Technology, Vellore Institute of Technology, Vellore, India.

19. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, II Workshop de Materiais Avançados - Materiais para Aplicações Biomédicas 2016, Guaratingueta, Brazil.

20. Jonathan Sorkin, Stephen Hughes, Paulo Soares, **Ketul C. Popat***, *Titania Nanotube Arrays as Interfaces for Neural Prostheses*, 2016 TMS Conference, Nashville TN.

21. **Ketul C. Popat***, *Modulating Hemocompatibilty: Development of Nanostructured Surfaces for Medical Devices*, BITERM Conference 2016, Delhi, India.

22. **Ketul C. Popat***, *Modulating Immune Response Through Biomaterial Surface Nanotopography*, MRS Mexico 2016 Conference, Cancun, Mexico.

23. **Ketul C. Popat***, *Superhydrophobic Surfaces for Blood Contacting Medical Devices*, MS&T 2016 Conference, Salt Lake City UT.

24. **Ketul C. Popat***, *Titania Nanotube Arrays as Interfaces for Blood Contacting Interfaces*, November 2015, AIChE Conference, Salt Lake City UT.

25. **Ketul C. Popat***, Jonathan A Sorkin, Stephen Hughes, Paulo Soares, *Titania Nanotube Arrays as Interfaces for Neural Prostheses*, MS&T 2015 Conference, Columbus OH.

26. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, August 2015, Department of Mechanical Engineering, Pontifícia Universidade Católica do Paraná, Brazil.

27. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, August 2015, School of Mechanical and Aerospace Engineering, Queen's University, UK.

28. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, August 2015, Trinity Centre for Bioengineering, Trinity College, Dublin, Ireland.

29. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, April 2015, Department of Chemistry, Massey University, NZ.

30. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, March 2015, Queensland University of Technology, Brisbane, Australia.

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33. **Ketul C. Popat***, *Titania Nanotube Arrays as Interfaces for Blood Contacting Interfaces*, 2014 CBECIMAT Conference, Cuiaba, Brazil.

34. **Ketul C. Popat***, *Titania Nanotube Arrays Modulate in Vitro Hemocompatibility and Immune Response*, TMS 2014 Conference, San Diego CA.

35. Nathan A. Trujillo and **Ketul C. Popat***, *Osteogenic Differentiation of Adipose Derived Stem Cells on Polycaprolactone Nanowire Surfaces*, MS&T 2014 Conference, Pittsburgh PA.

36. Victoria Leszczak and **Ketul C. Popat***, *Hemocompatibility of polymeric nanostructured surfaces*, MS&T 2013 Conference, Montreal, Canada.

37. **Ketul C. Popat***, *Titania nanotube arrays as interfaces for blood contacting devices*, 8 December 2013, Zing Conferences – Coordination Chemistry, Playa Del Carmen, Mexico.

38. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, December 2013, National Chemical Laboratory, Pune, India.

39. **Ketul C. Popat***, *Modulating Biomaterials Immune Response using Nanotopography*, 24 December 2013, National Conference on Challenges in Biomaterials Research, Vellore, India

40. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, January 2013, Department of Mechanical Engineering, Sagar Institute of Research & Technology, Bhopal, India.

41. **Ketul C. Popat**, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, January 2013, Department of Mechanical Engineering, Maulana Azad National Institute of Technology, Bhopal, India.

42. Barbara S. Smith and **Ketul C Popat***, Titania Nanotube Arrays as Interfaces for Blood-Contacting Implantable Devices, MS&T 2012 Conference, Pittsburgh PA.

43. **Ketul C. Popat***, Nanoengineering of material surfaces for tissue engineering and regenerative medicine, 2012 SPIE NanoScience + Engineering Conference, San Diego, CA.

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45. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for tissue engineering and regenerative medicine*, November 2011, Department of Materials Technology, Universidade Estadual Paulista, Guaratingueta, Brazil.

46. Derek A. Carroll, Jennifer Lee, Michael Onorato, Kaitlin Spink, David A. Prawel and **Ketul C. Popat***, *Low Cost 3D Bio-Printing of Cellularized Vascular Graft Prototypes*, RAPDASA 2011 Conference, Vanderbijlpark, South Africa.

47. Samuel Bechara, Lucas Wadman and **Ketul C. Popat***, *Electro-conductive polymeric nanowire templates facilitates neural stem cell adhesion, proliferation and differentiation*, MS&T 2011 Conference, Columbus OH.

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50. Barbara S. Smith*, Laura Grissom, Sorachon Yoriya, Craig A. Grimes and **Ketul C. Popat**, *Hemocompatibility of Titania Nanotube Arrays*, LabAutomation 2011, Palm Springs CA.

51. Timothy Ruckh* and **Ketul C. Popat**, *An In Vitro Investigation of the Enhance Osteogenic Action of Mineralized Nanofibers for Bone Regeneration*, LabAutomation 2010, Palm Springs CA.

52. **Ketul C. Popat***, *Nano-engineered material surfaces for applications in orthopedics*, October 2008, Department of Bioengineering, University of Illinois, Chicago IL.

53. **Ketul C. Popat***, *Micro/Nano-engineering of material surfaces for applications in biology and medicine*, April 2008, Department of Chemical Engineering, Colorado State University, Fort Collins CO.

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55. **Ketul C. Popat***, *Micro and Nanofabricated Interfaces for Therapeutic Delivery*, 2007 MEMS Alliance Symposium, Biotechnology Institute Center, University of Maryland, Rockville MD.

56. **Ketul C. Popat*** and Tejal A. Desai, *Improved Marrow Stromal Cells Response on Nanostructured Surfaces for Bone Biotemplating Applications*, 2005 AIChE Annual Meeting, Cincinnati OH.

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Papers Presented:

1. Roberta Sabino*, Kirsten Kauk, Liszt Y. C. Madruga, Matt J. Kipper, Alessandro F. Martins and **Ketul C. Popat**, Enhanced Hemocompatibility and Antibacterial Activity on Titania Nanotubes, TERMIS 2019 Annual Conference, Orlando FL (2019)

2. Roberta Sabino*, Tarun Kumar Jammu, Hamed Vahabi, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat**, *Hemocompatibility of Superhydrophobic and Superhydrophilic Surfaces*, Society for Biomaterials 2019 Annual Meeting, Seattle GA (2019)

3. Tara Wigmosta*, Ketul C. Popat and Matt J. Kipper, Advanced Surfaces for Orthopedic Implants, Biomedical Engineering Society National Meeting, Philadelphia, PA, (2019).

4. Matt Kipper*, **Ketul C. Popat**, Rachael-Simon Walker, Raimundo Romero, Joseph Staver, and Yanyi Zang, *Titania Nanotube Arrays and Functional Biopolymers as Interfaces Blood-Contacting Materials*. 2018 World Biomechanics Congress, Dublin, Ireland (2018).

5. Kevin Bartlett, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat***, *Superhemophobic Surfaces for Blood Contacting Medical Devices.* 2018 World Biomechanics Congress, Dublin, Ireland (2018).

6. Yanyi Zang*, **Ketul C. Popat** and Melissa Reynolds, *Nitric Oxide-Releasing Surfaces of Blood-Contacting Tubing Medical Devices*, ECMO 2018 Conference, Keystone CO (2018).

7. Nicole L. Ramo*, Jasmine Nejad, **Ketul C. Popat** and Kimberly Catton, *Student Assessment of Active Learning Elements in 100-level Introductory Biomedical Engineering Course*. ASEE Annual Conference & Exposition, Salt Lake City, UT (2018).

8. Kevin Bartlett, Sanli Movafaghi, Arun K. Kota and **Ketul C. Popat**, *Superhemophobic Titania Nanotube Array Surfaces for Blood Contacting Medical Devices.* Society for Biomaterials 2018 Annual Meeting, Atlanta GA (2018).

9. Roberta Maia Sabino*, Kirsten Kauk, Sanli Movafaghi and **Ketul C. Popat**, *Blood Plasma Protein Interaction With Superhydrophobic Titania Nanotube Surfaces*, 2018 BMES Annual Meeting, Atlanta GA (2018)

10. Roberta Maia Sabino*, Kirsten Kauk, Sanli Movafaghi and **Ketul C. Popat**, *Blood Plasma Protein Interaction With Superhydrophobic Titania Nanotube Surfaces*. Biointerface 2018, Boulder CO (2018)

11. David Bark*, Hamed Vahabi, Sanli Movafaghi, **Ketul C. Popat**, Arun K Kota and Lakshmi Prasad Dasi. *Superhydrophobicity to minimize thrombogenic risk on mechanical heart valves*. Division of Fluid Dynamics 2017 American Physical Society Meeting, Denver CO (2017).

12. Hamed Vahabi*, Wei Wang, **Ketul C. Popat**, Gibum Kown, Troy Holland and Arun Kota. *A thermal sensitization approach toward the nano/microstructuring of binary alloy surfaces to tune their wettability*. Division of Fluid Dynamics 2017 American Physical Society Meeting, Denver CO (2017).

13. Hannah M. Pauly*, **Ketul C. Popat**, Daniel J. Kelly and Tammy L. Haut Donahue, *Use of a hierarchical electrospun scaffold to mimic ligament structural properties and promote collagen deposition*, Society for Biomaterials 2017 Annual Meeting, Minneapolis MN (2017).

14. João Pedro Aquiles Carobolante, Marcela Dias-Netipanyj, **Ketul C. Popat** and Ana Paula Rosifni Alves Claro*, *Formation of nanoporous TiO2 on Ti10Mo8Nb alloy surface for biomedical applications*, ESB 2017 Conference, Athens, Greece (2017).

15. Joseph Staver*, Rachael Simon-Walker, Raimundo Romero, Yanyi Zang, Ketul C. Popat and Matthew Kipper, Melissay Reynolds, *Surface modification for increased hemocompatibility of a stent,* ACS 2017 Spring Meeting, San Francisco CA (2017).

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19. Sanli Movafaghi, Victoria Leszczak, Arun K. Kota and **Ketul C. Popat***, *Effect of superhydrophobicity/superhydrophilicity of titanium surface on hemocompatibility*, World Biomaterials Congress, Montreal, Canada (2016).

20. Marcela Dias-Netipanyj*, Thatyanne Gradowski, Sheron Cogo, Selene Esposito, Paulo Soares and **Ketul C. Popat**, *Effect of annealing temperature of titania nanotube arrays on adipose derived stem cell functionality*, 2016 TERMIS Conference, San Diego CA (2016).

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22. Reginaldo T. Konatu*, Marcela Dias-Netipanyj, Sheron Cogo, Carlos Roberto Grandini and **Ketul C. Popat**, Ana Paula Rosifini Alves Claro, *Cell response on the Ti15Zr alloy surface after TiO2 nanotubes growth*, 2016 SBPMat Conference, Campinas, Brazil (2016).

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25. Nicole Ramo*, **Ketul C. Popat** and Kimberley Catton, *Incorporation of Undergraduate Learning Assistants in Biomedical Engineering 101*, ASEE 2016 Conference (2016).

26. Jacob DeRoo*, Michelle Ablutz, Selin Yaprak-Akgul, **Ketul C. Popat** and Matt J. Kipper, *Demineralized Bone Matrix Fibers Support Adipose Mesenchymal Stem Cells and Mineralization in Vitro*, BMES 2016 Conference, Minneapolis MN (2016).

27. Paulo Soares*, Selene Esposito, Marcela Dias and **Ketul C. Popat**, *Surface Properties and Bioactivity Ca and P Doped TiO2 Nanotubes*, MS&T 2015 Conference, Columbus OH (2015)

28. Carolina da Silva Machado Martinelli*, Maurício Rangel Seixas, Victoria Leszczak, **Ketul C. Popat** and Ana Paula Rosifini Alves Claro, *Biocompatibility of the Ti-25Ta-25Nb-3Sn alloy for dental applications*, IADR 2015 Conference, Boston MA (2015).

29. Hannah M. Pauly*, **Ketul C. Popat**, Daniel J. Kelly and Tammy L. Haut Donahue, Flat and 3D *Electrospun Scaffolds for Ligament Tissue Engineering: Mechanical Properties and Cellular Response*, ORS 2015 Annual Meeting, Las Vegas NV (2015).

30. Hannah M. Pauly*, **Ketul C. Popat**, Daniel J. Kelly and Tammy L. Haut Donahue, *Influence of Nano- and micro-scale structure of aligned electrospun scaffolds on mechanical properties and cell response*, SB3C Conference, Snowbird UT (2015).

31. Rachael L. Simon-Walker*, John C. Cavicchia, David L. Bark Jr., Susan P. James, Lakshmi P. Dasi and **Ketul C. Popat**, *Hemocompatibility assessment of hyaluronan enchanced linear low density polyethylene for use in aortic heart valve leaflets*, SB3C Conference, Snowbird UT (2015).

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37. Paulo Soares, Nathan A. Trujillo* and **Ketul C. Popat**, *Comparative cell behavior on titania nanotubes filled with HAP*, Society for Biomaterials 2014 Annual Meeting, Denver CO (2014).

38. Nathan A. Trujillo* and **Ketul C. Popat**, *Increased adipogenic differentiation and decreased chondrogenic differentiation of adipose derived stem cells with poly(e-caprolactone) nanowire surfaces*, Society for Biomaterials 2014 Annual Meeting, Denver CO (2014).

39. Sean E. Kelley*, Mahli Ruff and **Ketul C. Popat**, *Smooth Muscle Cells Interaction with Titania Nanotube Arrays*, Society for Biomaterials 2014 Annual Meeting, Denver CO (2014).

40. Victoria Leszczak* and **Ketul C. Popat**, *Smooth Muscle Interaction with Collagen Immobilized Nanowire Surfaces*, Society for Biomaterials 2014 Annual Meeting, Denver CO (2014).

41. Victoria Leszczak* and **Ketul C. Popat**, *Collagen Immobilized Nanowire Surfaces for Cardiovascular Applications*, Biomedical Engineering Society 2013 Annual Meeting, Seattle WA (2013).

42. Nathan Trujillo and **Ketul C. Popat**, *Chondrogenic Differentiation of Adipose Derived Stem Cells on Polymeric Nanowire Surfaces*, Biomedical Engineering Society 2013 Annual Meeting, Seattle WA (2013).

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44. Barbara S. Smith and **Ketul C. Popat***, *Nanostructured Material Interfaces for Blood-Contacting Implantable Devices*, ASME 2013 2nd Global Congress on Nanoengineering for Medicine and Biology, Boston MA (2013).

45. Victoria Leszczak* and **Ketul C. Popat**, *Hemocompatibility of Polymeric Nanoscale Surfaces*, Society for Biomaterials 2012 Annual Meeting, New Orleans LA (2012).

46. Nathan A. Trujillo* and **Ketul C. Popat**, *Interaction of adipose derived stem cells with poly(ε-caprolactone) nanowire surfaces*, Society for Biomaterials 2012 Annual Meeting, New Orleans LA (2012).

47. Samuel Bechara and **Ketul C. Popat***, *Micro-patterned nanowire surfaces produced by semi-rapid prototyping technique encourages directional neuronal cell growth*, RAPDASA Conference 2012, Pilanesberg, South Africa (2012).

48. Barbara S. Smith and **Ketul C. Popat***, *Titania Nanotube Arrays Modulates Surface Thrombogenecity*, 9th World Biomaterials Congress, Chengdu, China (2012).

49. Barbara S. Smith, Nicholas A. Reidel, John D. Williams and **Ketul C. Popat***, *Enhanced Thrombogenic Response on Oxygen Etched Ti6Al4V Surfaces*, 9th World Biomaterials Congress, Chengdu, China (2012).

50. Barbara S. Smith, Patricia Capellato, Sean Kelley, Derek LeFebre and **Ketul C. Popat***, *Evaluation of Magnesium as a Material for Orthopedic Applications*, 9th World Biomaterials Congress, Chengdu, China (2012).

51. Dustin Berger, **Ketul C. Popat*** and Ashok Prasad, *Long-Term Multipotent Mesenchymal Stromal Cell Response to Horizontally and Vertically Oriented Poly(ε-Caprolactone) Nanotopographies*, 9th World Biomaterials Congress, Chengdu, China (2012).

52. Nathan A. Trujillo, Rachael Oldinski, John D. Williams and **Ketul C. Popat***, *Antibacterial Effects of Sputter Deposited Silver-doped Hydroxyapatite Thin Films*, 9th World Biomaterials Congress, Chengdu, China (2012).

53. Patricia Capellato, Ana Paula Rosifini Alves Claro, Ana Lucia A. Escada, Joao P.B. Machado and **Ketul C. Popat***, *Surfaces modification Ti-30Ta Alloy for Biomedical Applications*, 9th World Biomaterials Congress, Chengdu, China (2012).

54. Patricia Capellato, Ana Paula Rosifini Alves Claro, Barbara S. Smith and **Ketul C. Popat***, *Nanotube formation on Ti-30Ta alloy for biomedical application*, 9th World Biomaterials Congress, Chengdu, China (2012).

55. Victoria Leszczak and **Ketul C. Popat***, *Hemocompatibility of Polymeric Nanoscale Scaffolds*, 9th World Biomaterials Congress, Chengdu, China (2012).

56. Brad J. Farrell*, Mark Pitkin, **Ketul C. Popat** and Boris I. Prilutsky, *Effect of pore size, implantation time and nano-surface properties on rat skin ingrowth into porous titanium*, 4th International Conference: ADVANCES IN ORTHOPAEDIC OSSEOINTEGRATION, San Francisco CA (2012).

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58. Vinod B. Damodaran*, Conan J. Fee and **Ketul C. Popat**, *Kinetic Models For Predicting PEG Covalent Grafting Using XPS Fractional C-O Intensities*, 242nd American Chemical Society Fall National Meeting, Denver CO (2011).

59. Samuel L. Bechara* and **Ketul C. Popat**, *Bio-functionalized electro-responsive polymeric nanowire templates facilitating neural stem cell proliferation and differentiation*, Society for Biomaterials 2011 Annual Meeting, Orlando FL (2011).

60. David Prawel*, **Ketul C. Popat** and Susan P. James, *A Drug Eluting, Osseointegrative Phospholipid Coating for Titanium Implants*, Society for Biomaterials 2011 Annual Meeting, Orlando FL (2011).

61. Barbara S. Smith*, Sorachon Yoriya, Thomas Johnson, Craig A. Grimes and **Ketul C. Popat**, *Platelet Interaction and Skin Cell Functionality on Titania Nanotube Arrays*, Society for Biomaterials 2011 Annual Meerting, Orlando FL (2011).

62. Nicholas A. Riedel*, Tyler B. Cote, **Ketul C. Popat** and John D. Williams, *Novel Helium Plasma Texutrization Applied to Titanium for Enhanced Osseointegration*, ASME 2011 International Mechanical Engineering Congress & Exposition, Denver CO (2011).

63. Dustin Berger*, **Ketul C. Popat** and Ashok Prasad, *PCL Nanopillars Vs Nanofibers: A Stark Contrast in Progenitor Cell Morphology, Proliferation, and Fate Determination*, 2011 ASCB Annual Meeting, Denver CO (2011).

64. Derek A. Carroll, Jennifer Lee, Michael Onorato, Kaitlin Spink, David A. Prawel and **Ketul C. Popat***, *Low-Cost 3D Bio-printing of Cellularized Vascular Graft Prototypes*, RAPDASA Conference 2011, Vanderbijlpark, South Africa (2011).

65. Samuel L. Bechara* and **Ketul C. Popat**, *Polymeric Nanowire Templates as Scaffolds for Improved Neuronal Cell Functionality*, LabAutomation 2010, Palm Springs CA (2010).

66. Timothy Ruckh* and **Ketul C. Popat**, *An In Vitro Investigation of the Enhance Osteogenic Action of Mineralized Nanofibers for Bone Regeneration*, LabAutomation 2010 Palm Springs CA (2010).

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72. Susan S. Yonemura, Barbara S. Smith*, Marcio Forleo, Susan P. James and **Ketul C. Popat**, *Hemocompatibility of a Novel Hyaluronan-High Density Polyethylene Composite*, BMES 2010 Annual Meeting, Austin TX (2010).

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83. **Ketul C. Popat***, Craig A. Grimes and Tejal A. Desai, *Micro/Nano-Engineering of Material Surfaces for Applications in Orthopedics*, LabAutomation 2008, Palm Springs CA (2008).

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93. **Ketul C. Popat*** and Tejal A. Desai, *Microfabricated Nanoporous Silicon Membranes for Drug Delivery Applications*, 2006 AIChE Annual Meeting, San Francisco CA (2006).

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95. Ayca Yalcin*, John C. Aldridge, **Ketul C. Popat**, Tejal A. Desai, Nabil Chhbouki, M. Selim Unlu and Bennett B. Goldberg, *Microring Resonators for Biochemical Sensing*, 2005 American Physical Society March Meeting, Los Angeles (2005).

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98. Simon K. Su, **Ketul C. Popat*** and Tejal A. Desai, *Bioadhesive porous silicon particles for oral drug delivery*, ALA LabFusion 2004, Boston MA (2004).

99. **Ketul C. Popat***, Erin L. Swan and Tejal A. Desai, *Surface modification and characterization of nanoporous alumina films/membranes for biotemplating and biofiltration applications*, 7th World Biomaterials Congress, Sydney, Australia (2004).

100. Erin E. Leary Swan*, **Ketul C. Popat** and Tejal A. Desai, *Fabrication and Evaluation of Uniformly Sized Nanoporous Alumina for Human Osteoblast Cell Culture*, 7th World Biomaterials Congress Sydney, Australia (2004).

101. Barrett Nehilla*, **Ketul C. Popat**, David R. Pepperberg, Sarwat Chowdhury, Robert F. Standaert and Tejal A. Desai, *Assembly and Characterization of a Muscimol-Immobilized Silicon Surface*, 2004 ARVO Annual Meeting, Fort Lauderdale FL (2004).

102. Erin E. Leary Swan*, **Ketul C. Popat** and Tejal A. Desai, *Fabrication and Evaluation of Uniformly Sized Nanoporous Alumina for Human Osteoblast Cell Culture*, 2004 MRS Spring Meeting, San Francisco CA (2004).

103. **Ketul C. Popat*** and Tejal A. Desai, *Poly (ethylene glycol) grafted non-fouling nanoporous alumina membranes*, LabAutomation 2004, San Jose CA (2004).

104. **Ketul C. Popat*** and Tejal A. Desai, *Diffusion of biomolecules through nanoporous inorganic membranes*, 2003 MRS Fall Meeting, Boston MA (2003).

105. **Ketul C. Popat*** and Tejal A. Desai, *Biocompatibility of inorganic nanoporous films and biocapsules*, 77th ACS Colloid and Surface Science Symposium, Atlanta GA (2003).

106. **Ketul C. Popat***, Sadhana Sharma and Tejal A. Desai, *XPS characterization of thin PEG films on silicon surface*, Surface Analysis 2003, Champaign IL (2003).

107. **Ketul C. Popat***, Sadhana Sharma and Tejal A. Desai, *Developing surfaces for enhanced performance of silicon-based bio-microsystems*, LabAutomation 2003, Palm Springs CA (2003).

108. Sadhana Sharma*, **Ketul C. Popat** and Tejal A. Desai, *Biofouling and biocompatibility issues for silicon-based bio-microsystems and control strategies*, LabAutomation 2003, Palm Springs CA (2003).

109. **Ketul C. Popat*** and Tejal A. Desai, *Vapor deposited poly(ethylene glycol) interfaces: An approach for enhanced performance for microfluidic systems*, 2002 MRS Fall Meeting, Boston MA (2002).

110. **Ketul C. Popat*** and Tejal A. Desai, *Non-fouling PEG modified microcapillaries*, SmallTalk 2002, San Diego CA (2002).

111. **Ketul C. Popat*** and Tejal A. Desai, *Scanning electron microscopy of vapor deposited poly(ethylene glycol) films on silicon surface*, SmallTalk 2002, San Diego CA (2002).

112. **Ketul C. Popat***, Sadhana Sharma and Tejal A. Desai, *Engineered silicon surfaces for bioMEMS applications*, 76th Colloid and Surface Science Symposium, Ann Arbor MI (2002).

113. **Ketul C. Popat*** and Tejal A. Desai, *Capillary-specific poly(ethylene glycol) films for microfluidic systems*, 2002 BioMEMS Conference, Cambridge MA (2002).

114. **Ketul C. Popat***, Robert W. Johnson, Tejal A. Desai, *Vapor deposited poly(ethylene glycol) films for surface modification of microfluidic systems*, LabAutomation 2002, Palm Springs CA (2002).

115. **Ketul C. Popat***, Robert W. Johnson and Tejal A. Desai, *Vapor deposited PEG films on silicon substrates for implantable BioMEMS*", 2001 AIChE Annual Meeting, Reno NV (2001).

116. **Ketul C. Popat***, Robert W. Johnson and Tejal A. Desai, *AFM and XPS Characterization of Vapor Deposited Silane Films on Silicon Surface*, 222nd American Chemical Society Fall National Meeting, Chicago IL (2001).

117. **Ketul C. Popat*** and Tejal A. Desai, *Chemical Vapor Deposition of Silanes on Plain and Microfabricated Silicon Surfaces*, 221st American Chemical Society Spring National Meeting, San Diego CA (2001).

118. **Ketul C. Popat*** and Gulnur Birol, *Optimization of rate data for free and immobilized microbial endo-beta-gluconase and enzyme kinetics based on free energy profiles*, 5th Annual Undergraduate Research Conference, Illinois Institute of Technology, Chicago IL (2000).

COLLABORATIVE, INTERCOLLEGIATE & INTERDISCIPLINARY SCHOLARSHIP

1. School of Biomedical Engineering (SBME): When I first joined CSU in 2007, I began participating actively with the faculty from SBME. I have served as a member of graduate affairs committee since 2008 and more recently as a member of undergraduate academic committee since 2017. I have advised 6 PhD and 4 MS students from SBME. I have also advised three senior design teams from SBME. Through SBME I have also initiated new collaborations with Matt Kipper and Melissa Reynolds.

2. School of Advanced Materials Discovery (SAMD): The new School of Advanced Materials Discovery (SAMD) was launched as a collaboration between the College of Natural Sciences and the Walter Scott College of Engineering in 2017. SAMD now offers graduate degree programs. I am currently advising a PhD student from SAMD.

3. I currently have strong research collaborations with Vellore Institute of Technology, India (since 2008), Universidade Estadual Paulista, Brazil (2008), Vaal University of Technology, South Africa (2011), Pontifícia Universidade Católica do Paraná, Brazil (2013) and Universidade Estadual de Campinas (2017). These collaborations have resulted in several publications as well as visit from professors, postdoctoral researcher, graduate and undergraduate students in my laboratory. I have also visited these universities and given lectures and co-advised students.

4. In 2015, I joined a research collaboration developed by Matt Kipper and Lawrence Belfiore (CSU) with Professor Jianguo Tang from the Materials Science and Engineering program at Qingdao University, which has continued and grown. Professor Tang oversees a “National Center of International Cooperation on Hybrid Materials” and a “Hybrid Materials Institute”.

OTHER ACTIVITIES / ACCOMPLISHMENTS – PUBLICATIONS / SCHOLARLY RECORD

Patents:

1. Tejal A. Desai, **Ketul C. Popat**, Craig A. Grimes. *Nanostructure surface coated medical implants and methods of using the same* (2019) US10426871B2, (Filed through University of California, San Francisco).

2. Susan P. James, Travis S. Bailey, **Ketul C. Popat**, David A. Prawel, Jackson T. Lewis, Richard L. Koch. *Synthetic polymeric materials and devices thereof* (2019) US10167387B2.
3. Arun Kumar Kota, **Ketul C. Popat**, Sanli Movafaghi, Victoria Leszczak, Wei Wang. *Hemocompatibility of superhemophobic titania surfaces* (2018) US15954943 (Pending).
4. Susan P. James, Harold Dean IV, Lakshmi Prasad Dasi, Marcio H. Forleo, **Ketul C. Popat**, Nicole R Lewis, David Alois Prawel. *Glycosaminoglycan and Synthetic Polymer Material for Blood-Contacting Applications* (2018) US10071186B2.
5. Matthew Kipper, **Ketul C. Popat**, Melissa Reynolds, Victoria, Leszczak, Raimundo Romero. *Surface treatments for vascular stents and methods thereof* (2017) US9597434B2.

CV SECTION 3: Evidence of Teaching and Advising Effectiveness

TEACHING

All credit courses taught at Colorado State University during the last **5 years** included below.

Resident Instruction:

Year	Semester	Course No/Title	Credit Hours	Enrollment
2019	Fall	MECH/BIOM 570 Biomedical Engineering	3	30
2019	Spring	MECH/BIOM 531 Materials Engineering	3	13
2018	Fall	MECH/BIOM 570 Biomedical Engineering	3	44
2018	Fall	BIOM 100 Overview of Biomedical Engineering	1	166
2018	Fall	BIOM 200 Principles of Biomedical Engineering	2	34
2018	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	38
2017	Fall	MECH/BIOM 570 Biomedical Engineering	3	34
2017	Fall	BIOM 101 Introduction to Biomedical Engineering	3	138
2017	Spring	MECH/BIOM 531 Materials Engineering	3	25
2016	Fall	MECH/BIOM 570 Biomedical Engineering	3	25
2016	Fall	BIOM 101 Introduction to Biomedical Engineering	3	142
2016	Fall	MECH 432 Engineering of Nanomaterials	3	17
2016	Spring	MECH 331 Introduction to Engineering Materials	3	94
2016	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	22
2015	Fall	MECH/BIOM 570 Biomedical Engineering	3	15
2015	Fall	BIOM 101 Introduction to Biomedical Engineering	3	143
2015	Spring	On sabbatical	-	-
2014	Fall	MECH/BIOM 570 Biomedical Engineering	3	23

Examples of Course Improvements:

Use of Learning Assistants in BIOM 101 (and BIOM 100 and 200):

Learning assistants (LAs) are undergraduate students who are prepared to provide support for student learning in interactive classroom environment. Learning assistants facilitate small group interaction in the class and this helps the students to better understand the course content. In Fall 2016, I introduced LAs in BIOM 101 class and implemented in class learning activities with

the help of graduate teaching fellow, Nicole Ramo. During the first week of the semester, students self-enrolled in teams of 6 or 7 for an out- of-class design project using the self-sign-up group feature of Canvas; these same teams were also used for all in-class learning activities. Class periods devoted to active learning where indicated as such on the course syllabus and schedule. On these scheduled days, the students came into class and immediately sat with their group. This allowed for the learning activity to start right away and for students who arrived late to easily find their group. At the start of a typical active learning session, the activity was introduced, and any general questions were addressed. Then, the groups worked together on the assigned task, raising their hands and looking for the LA assigned to their group, the instructor, or graduate teaching fellow if any questions arose. If needed, clarifying announcements were made to the entire class. Once a group had completed an activity (for the case of problem-solving or hands-on activities), it was checked by their LA, the graduate teaching assistant, or the instructor. The groups were then given a topic to discuss or simply waited for other groups to finish. By the mid-point of the semester, iClickers were used to indicate when groups had finished a task; this was very helpful in determining the best time to bring the class back together to go over the solution or hold class-wide discussion. An active learning class period could consistent of one or more activities, but each activity could be characterized as one of the following:

- Problem-Solving: application of equations or methodologies discussed in class to real-world examples;
- Hands-On: games, activities, or demonstrations that required collaboration between group members; or
- Research: in-class reporting of what was learned from research conducted out-of- class.

Nicole conducted anonymous surveys using google forms to evaluate the effect of learning activities on student outcomes as well as better understanding of the course material by the students. The results of the survey show that the learning activities were well received by the majority of the students; 71% considered the active learning class periods valuable to their learning and 67% considered them enjoyable. Scores for the specific learning activities revealed that the problem-solving type was seen as the most helpful in understanding biomedical engineering or applying course material, followed by the hands-on activities, then the out-of- class researched based activities. The lower scores for the research-based activities may be due to the same student resistance to and attitudes about out-of-class learning responsibilities. Based on this response, LAs and in class interactive learning activities were permanently introduced in BIOM 101 (and BIOM 100 and 200) course effective Fall 2017.

Development of New Courses:

<u>BIOM 100 and BIOM 200:</u>

The surveys conducted by Nicole Ramo in Fall 2016 also indicated that many students found BIOM 101 extremely difficult course since they did not have appropriate background to understand the material covered. Further, there were many students who found the course to be too hard since they were admitted to CSU with lot of AP credits. Thus, based on these surveys, it was decided to split BIOM 101 into two courses, BIOM 100 – Overview of Biomedical Engineering (1 credit, to be taken in 1st year) and BIOIM 200 – Fundamentals of Biomedical Engineering (2 credits, to be taken in 2nd years). BIOM 100 gives Overview of the field of biomedical engineering with an emphasis on the roles of mechanical, electrical, and chemical/biological engineering principles. There are no prerequisites for this course. This will help the students to understand how their partner major plays a critical role in the field of biomedical engineering. BIOM 200 discusses application of engineering analysis to physiology and biomedical engineering topics. The students will take this course in 2nd year. BIOM 100 is the prerequisite for this course, and by the time they take BIOM 200, they will have already taken relevant life science and math courses that will help them to be successful in this course. I taught BIOM 100 and 200 for first time in Fall 2018 and used LAs for these courses as well.

Online Instruction:

Year	Semester	Course No/Title	Credit Hours	Enrollment
2019	Fall	BIOM 180A1 Fundamentals of Biomedical Eng.	1	16
2019	Fall	MECH/BIOM 570 Biomedical Engineering	3	7
2019	Fall	MECH/BIOM 531 Materials Engineering	3	13
2019	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	4
2019	Spring	MECH/BIOM 531 Materials Engineering	3	7
2019	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	11
2018	Fall	MECH/BIOM 570 Biomedical Engineering	3	17
2018	Fall	MECH/BIOM 531 Materials Engineering	3	15
2018	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	8
2018	Fall	BIOM 180A1 Fundamentals of Biomedical Eng.	1	14
2018	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	7
2018	Spring	MECH/BIOM 531 Materials Engineering	3	5
2017	Fall	MECH/BIOM 570 Biomedical Engineering	3	8
2017	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	7
2017	Fall	MECH/BIOM 531 Materials Engineering	3	11
2017	Spring	MECH/BIOM 531 Materials Engineering	3	10
2017	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	6
2016	Fall	MECH/BIOM 570 Biomedical Engineering	3	14
2016	Fall	MECH/BIOM 531 Materials Engineering	3	5
2016	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	3
2016	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	5
2016	Spring	MECH/BIOM 531 Materials Engineering	3	9
2015	Fall	MECH/BIOM 570 Biomedical Engineering	3	11
2015	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	3
2015	Fall	MECH/BIOM 531 Materials Engineering	3	7
2015	Spring	MECH/BIOM 525 Cell and Tissue Engineering	3	9
2015	Spring	MECH/BIOM 531 Materials Engineering	3	14
2014	Fall	MECH/BIOM 570 Biomedical Engineering	3	16
2014	Fall	MECH/BIOM 525 Cell and Tissue Engineering	3	4
2014	Fall	MECH/BIOM 531 Materials Engineering	3	3

STUDENT ADVISING/GRADUATE SUPERVISION

GRADUATE STUDENTS:

Current Graduate Advisees:

1. Vignesh Kannigaipair Manivasagam, PhD
2. Roberta Maia Sabino, PhD
3. Tara Wigamosta, PhD (Co-advised with Matt Kipper)
4. Sayudh Ghosh, MS
5. Zachary Montgomerie, MS
6. Prem Kantam, MS

7. Elliott Pyles, ME

Current Graduate Committee Memberships (excluding those chaired):

- 12 PhD
- 3 MS

Graduate Committee Memberships (not including those above):

- 19 PhD
- 19 MS

Graduate Degrees Completed Under Your Supervision:

1. Rachael Simon-Walker, PhD
2. Nathan Trujillo, MS and PhD
3. Victoria Leszczak, PhD
4. Samuel Bechara, PhD
5. Barbara Smith, PhD
6. Timothy Ruckh, PhD
7. David Prawel, PhD (Co-advised with Susan James)
8. Nicholas Riedel, MS and PhD (Co-advised with John Williams)
9. Kevin Bartlett, MS
10. Kari Cowden, MS
11. Jonathan Sorkin, MS
12. Selin Yaprak Akgul (Co-advised with Matt Kipper)
13. Jodi Woodbury, MS
14. Sean Kelley, MS
15. Kevin Migita, MS
16. Joshua Porter, MS
17. Dustin Berger, MS (Co-advised with Ashok Prasad)
18. Jennifer Serao, ME

Graduate Advisor for Online Master of Engineering Students in Mechanical Engineering:

- 11 Current students
- 14 Graduated students

UNDERGRADUATE STUDENTS:

Undergraduate Advisees:

- Current Undergraduate students working in my lab on research projects: 4
- Undergraduate Students Advised for research projects at CSU: 31

Other Undergraduate Mentoring Activities at CSU:

1. I have supervised 3 honors theses and have served in 2 honors theses committees.
2. I have advised 4 students who have taken independent study under my supervision.
3. I have mentored 4 high school students who have worked with other graduate students in my laboratory on research projects.
4. I have served as faculty advisor to biomedical engineering senior design project groups along with Matt Kipper for every academic year since 2016. In total, I have advised 4 groups with total of 14 students.
5. I have served as faculty advisor to mechanical engineering senior design project groups along with David Prawel (2010-2011) and John Williams (2008-2009). In total, I have advised 2 groups with total of 10 students.

OTHER ACTIVITES / ACCOMPLISHMENTS – TEACHING/ADVISING

Visiting Scholars/Students Supported:

1. Prof. Paulo Soares (2020), visiting sabbatical faculty from Department of Mechanical Engineering, Pontificia Universidade Catolica do Parana, Brazil.
2. Prof. Rodrigo Viera (2020), visiting sabbatical faculty from Department of Mechanical Engineering, Universidade Federal do Ceará, Fortaleza, Brazil.
3. Pranjal Jalota (2020), BS student from Vellore Institute of Technology, Vellore, India.
4. Kirti Tiwari (2020), MS student from Vellore Institute of Technology, Vellore, India.
5. Gabriela Mondini (2019), BS student from Pontificia Universidade Catolica do Parana, Curitiba, Brazil.
6. Prashant Medani (2019), BS student from Vellore Institute of Technology, Vellore, India.
7. Neha Meena (2019), BS student from Indian Institute of Technology, Gandhinagar, India
8. Lerato Madike (2019), PhD student from Vaal University of Technology, Vanderbijlpark, South Africa.
9. Leticia Bemben (2018), MS student from Pontificia Universidade Catolica do Parana, Curitiba, Brazil.
10. Rodrigo Nogoceke (2018), BS student from Pontificia Universidade Catolica do Parana, Curitiba, Brazil.
11. Tarun Kumar Jammu (2018), BS student from Indian Institute of Technology, Gandhinagar, India
12. Prof. Michael Pillay (2017), visiting faculty from Vaal University of Technology, Vanderbijlpark, South Africa.
13. Unisa Terblance (2017), PhD. student from Vaal University of Technology, Vanderbijlpark, South Africa.

14. Nolutho Mkhumbeni (2017), PhD from Vaal University of Technology, Vanderbijlpark, South Africa.
15. Luciane Santos (2017), PhD student from Pontificia Universidade Catolica do Parana, Curitiba, Brazil.
16. Dhanna Francisco (2017), BS student from Pontificia Universidade Catolica do Parana, Curitiba, Brazil.
17. Prof. Samira Camargo (2017), visiting sabbatical faculty from Universidade Estadual Paulista, Sao Jose dos Campos, Brazil.
18. Prof. Carlos Camargo (2017), visiting sabbatical faculty from Universidade Estadual Paulista, Sao Jose dos Campos, Brazil.
19. Ana Caroline Crema De Almeida, MS student from Pontificia Universidade Catolica do Parana, Brazil.
20. Krishna Pedrapolu (2017), BS student from Vellore Institute of Technology, Vellore, India.
21. Satyam Rajput (2017), BS student from Vellore Institute of Technology, Vellore, India.
22. Marcela Dias (2016-2017), PhD student from Pontificia Universidade Catolica do Parana, Brazil.
23. Akshay Singh (2016), MS student from Vellore Insititute of Technology, Vellore, India
24. Praneetha Pulyala (2016), MS student from Vellore Insititute of Technology, Vellore, India
25. Sheron Cogo (2016), BS student from Pontificia Universidade Catolica do Parana, Brazil.
26. Vitor Cassaniga (2016), BS student from Pontificia Universidade Catolica do Parana, Brazil.
27. Carolina Martinelli (2014-2015), PhD student from Universidade Estadual Paulista, Guaratingueta, Brazil.
28. Prof. Paulo Soares (2013), visiting sabbatical faculty from Department of Mechanical Engineering, Pontificia Universidade Catolica do Parana, Brazil.
29. Nandita Bal (2013), BS student from Vellore Institute of Technology, Vellore, India.
30. Bhawanjali Saxena (2011-2012), MS student from Vellore Institute of Technology, Vellore, India.
31. Patricia Capellato (2010-2011), PhD student from Universidade Estadual Paulista, Guaratingueta, Brazil.
32. Derek Lefebre (2011), Middle school teacher from Greeley Schools (supported as NSF RET).
33. Laura Grissom (2009), Middle school teacher from Greeley Schools (supported as NSF RET).
34. Vinod Babu Damodaran (2009), PhD student from University of Canterbury, Christchurch, New Zealand.
35. Kuldeep Kumar (2008), BS student from Indian Institute of Technology, Chennai, India.

Off-campus/Non-Credit Courses:

1. March 2019, GIAN Short Course: Nanomaterials for Biological Applications, Centre for Biomedical Engineering, Indian Institute of Technology, Delhi, India.
2. June 2018, Short Course: Cell and Tissue Engineering, Department of Materials Technology, Universidade Estadual Paulista, Guaratingueta, Brazil.
3. July 2017 and December 2017: Short Course: Tissue Engineering, Indian Institute of Technology, Gandhinagar, India.
4. July 2017, Short Course: Tissue Engineering, Vaal University of Technology, Vanderbijlpark, South Africa.
5. January 2016, Short Course: Tissue Engineering, Centre for BioMaterials Science and Technology, Vellore Institute of Technology, Vellore, India
6. November 2015, Workshop: Tissue Engineering, Vaal University of Technology, Vanderbijlpark, South Africa.
7. August 2016, Short Course: Tissue Engineering, Department of Mechanical Engineering, Pontificia Universidade Catolica do Parana, Brazil
8. January 2015, Short Course: Tissue Engineering, Centre for BioMaterials Science and Technology, Vellore Institute of Technology, Vellore, India
9. January 2014, Short Course: Tissue Engineering, Centre for BioMaterials Science and Technology, Vellore Institute of Technology, Vellore, India
10. June 2011, Short Course: Tissue Engineering, Department of Biomedical Engineering, PSG Tech, Coimbatore, India.
11. November 2011, Workshop: Tissue Engineering, Vaal University of Technology, Vanderbijlpark, South Africa.
12. December 2011, Short Course: Biomaterials and Tissue Engineering, Department of Materials Technology, Universidade Estadual Paulista, Guaratingueta, Brazil.

CV SECTION 4: Evidence of Outreach/Service

COMMITTEES

University Committees:

1. Institutional Review Board, 2008-present
2. Committee on Scholastic Standards, 2009-2018 (Chair of the committee during academic year 2011-2012)

College Committees:

1. Search committee member for head of the department of Mechanical Engineering, 2019
2. College Curriculum Committee, 2018-present
3. WSCOE ABET Committee, 2018-present
4. Chair for Director of Research Business Operations search committee, 2011-2012
5. Distance Education Committee, 2011-2013

6. Engineering Student Technology Committee, 2010-2011
7. Faculty advisor for BMES Student Chapter, 2009-2017
8. Faculty advisor for Professional Asian Society of Engineers and Scientists (PASES), 2010
9. Search committee member for head of the department of mechanical Engineering, 2009
10. FAR Online Committee, 2009-2010

Department Committees:

1. Chair for undergraduate curriculum committee in Mechanical Engineering, 2018-present
2. Undergraduate academic committee member in School of Biomedical Engineering, 2018-present
3. Chair for non-tenure track faculty position in Mechanical Engineering, 2018-2019
4. Chair for non-tenure track faculty position in Mechanical Engineering, 2017-2018
5. Search committee member for Biomed faculty position in Mechanical Engineering, 2017-2018
6. Chair for materials faculty position in Mechanical Engineering, 2015-2016
7. Search committee member for Biomed faculty position in Mechanical Engineering, 2015-2016
8. Mechanical Engineering Online Graduate Admissions Committee, 2013-present
9. Advisor to Mechanical Engineering Online Students, 2013-present
10. Search committee member for Biomed faculty position in Mechanical Engineering, 2013-2014
11. Mechanical Engineering Department Awards Committee, 2011-2013
12. Search committee member for administrative professional position in School of Biomedical Engineering, 2009
13. School of Biomedical Engineering Graduate Admissions Committee, 2008-present
14. Search committee member for Biomed faculty position in Mechanical Engineering, 2008-2009

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in Professional Societies:

1. American Society for Mechanical Engineers, 2019-present
2. Materials Research Society, Member, 2017-present
3. Biomedical Engineering Society, Member, 2004-present
4. Society for Biomaterials, Member, 2004-present

Office in professional societies:

1. Co-Chair, Nanomaterials Special Interest Group, Society for Biomaterials, 2013-2015

2. Program Chair, Nanomaterials Special Interest Group, Society for Biomaterials, 2011-2013
3. Co-Chair, Nanomaterials Special Interest Group, Society for Biomaterials, 2009-2011

Review/editorial boards:

1. Associate Editor, MRS Advances, 2017-2018
2. Advisory Board, Elsevier - Materials: Engineering, Science, Processing and Design, 2013-2014

Grant Review Panels:

1. NSF MRI Review Panel, 2019
2. NIH COBRE/IBBRE Study Section, 2018
3. CDMRP Review Panel, 2015, 2016, 2017, 2019, 2020
4. NIH SBIR Study Section, 2014, 2020
5. NIH R13 Study Section, 2014, 2015, 2016
6. NSF SBIR Review Panel, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
7. NSF Grant Review Panel, 2008, 2009, 2010
8. NIH ARRA Online Study Section, 2009
9. NSF CAREER Review Panel, 2008

Grant Refereeing:

1. University of Maryland Industrial Partnerships (MIPS) Program, 2019
2. Canada Research Chair, 2018
3. Mitacs Accelerate Award, 2018
4. Natural Sciences and Engineering Research Council of Canada, 2015, 2016, 2017, 2019
5. CRDF, 2017
6. Fonds de recherche du Québec – Santé, 2017
7. Shanti Swarup Bhatnagar Prize, 2015
8. CNPq Brazil, 2015
9. Ministry of Science, Education and Sports, Croatia, 2015
10. NWO Chemical Sciences Divisional Board, Netherlands, 2015
11. Medical Research Council, United Kingdom, 2013
12. Innovation and Technology Commission, The Government of the Hong Kong Special Administrative Region, 2013
13. Qatar National Research Fund (QNRF), 2013, 2015
14. Fundação para a Ciência e a Tecnologia, Portugal, 2012, 2013

15. Maryland Sea Grant, 2011
16. Wiener Wissenschafts-, Forschungs- und Technologiefonds, 2011
17. North Carolina Science and Technology Development Center, Reviewer/Referee, 2007

Manuscript Refereeing:

1. ACS Applied Materials and Interfaces, 13
2. ACS Applied Biomaterials, 2
3. ACS Biomaterials Science & Engineering, 8
4. Acta Biomaterialia, 12
5. Advanced Engineering Materials, 1
6. Advanced Materials, 2
7. Artificial Organs, 1
8. Archives of Oral Biology, 1
9. Annals of Biomedical Engineering, 10
10. Applied Surface Science, 1
11. Biointerphases, 1
12. Biomacromolecules, 1
13. Biomaterials, 12
14. Biomedical Materials, 3
15. Biomedical Microdevices, 2
16. Bone, 1
17. Computer Methods and Programs in Medicine, 1
18. Cellular and Molecular Bioengineering, 3
19. Colloids and Surfaces B, 11
20. Colloid and Interface Science Communications, 1
21. Corrosion Science, 7
22. Drug Delivery Letters, 2
23. eCells and Materials, 2
24. Electrochimica Acta, 4
25. European Polymer Journal, 1
26. Expert Review of Medical Devices, 2
27. Frontiers Bioengineering, 3
28. Inorganica Chimica Acta, 1
29. Industrial & Engineering Chemistry Research, 1
30. International Journal of Nanomedicine, 5

31. International Journal of Biological Macromolecules, 1
32. International Journal of Bioinformatics Research and Applications, 1
33. Journal of 3D Printing in Medicine, 2
34. Journal of Alloys and Compounds, 1
35. Journal of Biomaterial Applications, 3
36. Journal of Biomaterials and Tissue Engineering, 1
37. Journal of Biomaterials Science: Polymer Edition, 5
38. Journal of Biomedical Materials Research A, 12
39. Journal of Biomedical Materials Research B, 1
40. Journal of Biomedical Nanotechnology, 2
41. Journal of Functional Biomaterials, 1
42. Journal of Material Science, 4
43. Journal of Materials Chemistry, 3
44. Journal of Materials Research, 5
45. Journal of Mechanical Behavior of Biomaterials, 7
46. Journal of Membrane Science, 2
47. Journal of Nanomaterials, 2
48. Journal of Physical Chemistry, 2
49. JoVE, 2
50. Langmuir, 9
51. Life Sciences, 1
52. Macromolecular Biosciences, 2
53. Materials, 6
54. Materials Letters, 1
55. Materials Research, 2
56. Materials Research Express, 1
57. Materials Science and Engineering C, 19
58. Nano Letters, 2
59. Nanomedicine, 13
60. Nanoscale, 2
61. Nanotechnology, 1
62. Nature Communications, 1
63. Neural Computing and Applications, 1
64. PLOS one, 4
65. Results in Physics, 1

66. RSC Advances, 2
67. Scientific Reports, 1
68. Small, 1
69. Surface and Coatings Technology, 5
70. Surface Innovations, 1
71. This Solid Films, 1
72. Tissue Engineering, 7

International Thesis Reviewing:

1. Gujarat Technological University, Ahmedabad, India, 2019
2. Indian Institute of Technology, Gandhinagar, India, 2019
3. Indian Institute of Technology, Delhi, India, 2018, 2019
4. Indian Institute of Technology, Kharagpur, India, 2018
5. Bharathiar University, Coimbatore, India, 2017
6. Vellore Institute of Technology, Vellore, India, 2017, 2018, 2019
7. Anna University, Chennai, India, 2017
8. Indian Institute of Science, Bangalore, India, 2017
9. S.V. National Institute of Technology, Surat, India, 2015-present
10. Maulana Azad National Institute of Technology, Bhopal, India, 2013-present

Conference Reviewing:

1. Annual meeting of Canadian Biomaterials Society, 2019
2. World Biomechanics Conference, 2018
3. MRS Conference, 2017, 2018
4. World Biomaterials Congress, 2016, 2020
5. NSTI Conference, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015
6. Society for Biomaterials Annual Meeting 2009, 2010, 2011, 2012, 2013, 2014
7. BMES Annual Meeting, 2007, 2008, 2009, 2010, 2011, 2012, 2013
8. ASME Summer Bioengineering Conference, 2012
9. Controlled Release Society Annual Meeting, 2007
10. UC Systemwide Bioengineering Symposium, 2007

Conference Organization:

1. Co-convener, BioMET 2018 Conference, Vellore Institute of Technology, Vellore, India
2. Session Chair and Organizer, World Biomechanics Congress 2018
3. Session Chair and Organizer, MRS 2018 Spring Conference

4. Session Chair and Organizer, MRS 2016 Spring Conference
5. Organizing Committee Member, Society for Biomaterials 2012 Annual Meeting
6. Session Chair, MS&T 2012 Conference
7. Session Chair, MS&T 2011 Conference
8. Session Chair and Organizer, BMES 2009 Annual Meeting
9. Session Chair and Organizer, Society for Biomaterials 2009 Annual Meeting

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

Consultations related to professional expertise:

- Bitol LLC, USA, 2016-2018
- Coramaze Technologies GmbH, Germany, 2015-2016