CURRICULUM VITAE

V. PRASAD SHASTRI

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Education:

Rensselaer Polytechnic Institute, Troy, NY, USA
Ph.D. in Chemistry (Polymer Science & Engineering Program), 1995

University of Kentucky, Lexington, KY, USA
M.Sc. in Polymer Chemistry, 1989

University of Bombay, India
B.Sc. in Chemistry, 1987

Positions and employment:

Albert-Ludwigs-Universität Freiburg

2010–Present	Director, Institute for Macromolecular Chemistry
2009–Present	Professor of Biofunctional Macromolecular Chemistry
2009–Present	Bioss Professor of Cell Signalling Environments

Vanderbilt University

2004–2009	Director, Biomaterials, Drug Delivery & Tissue Engineering Laboratory
2004–2009	Assistant Professor of Biomedical Engineering,

University of Pennsylvania

2001-2004	Research Assistant Professor of Pediatrics Cardiology (School of Medicine)
2001 – 2004	Research Assistant Professor of Materials Science and Engineering (School of Engineering and Applied Science)

Massachusetts Institute of Technology (MIT), Department of Chemical Engineering

1999–2001	Research Associate
1998–1999	Senior Post Doc Associate
1995–2000	Instructor, Integrated Chemical Engineering, Controlled Release Systems
1994–1998	Post Doc Associate

Selected activities and professional memberships

2015	Guest Editor, ***MRS Bulletin***, Issue Theme: Biomineralization, (Volume 40, Issue 6)
2012	Guest Editor, ***Journal of Drug Delivery and Translation Research***, themed Issue on Regenerative Medicine (Volume 2, Issue 5)
2010	Guest Editor, ***MRS Bulletin***, Issue Theme: Functional Active Materials for Regenerative Medicine, (Volume 35, Issue 8)
2010	Guest Editor, ***Advanced Materials*** Special Issue on Stimuli Responsive Polymers (Volume 22, Issue 31)
2009	Guest Editor, ***Advanced Materials*** Special Issue on Regenerative Medicine (Volume 21, Issues 32-33)
2012	Reviewer, UK Medical Research Council
2012	Reviewer National Science Foundation
2011	Chair, Review Panel: Veterans Administration-Rehabilitation Research and Development (Washington, D.C.)
2009 –present	European Research Council Panel, Reviewer for Life Sciences Sector (LS7)

2009 –present	Expert Reviewer, Swiss National Science Foundation
2009 –present	Reviewer, EuroNanoMed
2009-2011	Member, Review Panel: Veterans Administration-Rehabilitation Research and Development (Washington, D.C.)
2009-2010	Member of the Scientific Advisory Board of the European Society of Biomaterials, Dublin Meeting, 2010
2007-present	Ad-Hoc Member, Review Panel: Veterans Administration-Rehabilitation Research and Development (Washington, D.C.)
2009	Commission for the Evaluation of Junior Professorships in Baden-Württemberg
2009	Member, National Institutes of Health Panel on Grand Opportunity (RC2 - GO) grants on nanomaterial safety Nanomaterial Grand Opportunity Review (21-22 July, 2009)
2009	Member, National Science Foundation Panel on Nano and Bio-Mechanics Program, Arlington, Maryland, USA
2009	Co-Chair, Materials Research Society Symposium NN, Title: Active Polymers, San Francisco, CA
2008	Chair, Materials Research Society Symposium HH: Title: Advances in Material Design for Regenerative Medicine, Drug Delivery, and Targeting/Imaging, Boston, MA (2008)
2007	Director, NATO Advanced Research Workshop on Nanoengineered Systems for Regenerative Medicine, Varna, Bulgaria
2004	Member of NSF Engineering Research Center Site Visit Team visiting U of Washington.
2003	Member of the Expert Panel on Biomedical Applications of Nanomaterials, NATO ASI on Nanoengineered Nanofibrous Materials, Antalya, Turkey (September 2003)
2001–2002	Consultant to the World Health Organization (WHO) Program on Female Contraceptives
1998–1999	Executive Editor of "SurFacts"-A Quarterly Newsletter of the "Surfaces in Biomaterials Foundation"
1993	Elected to the Sigma Xi Honorary Society

Selected Publications (from over 150 - peer-reviewed journal articles & proceedings, extended abstracts, book chapters and monographs)

1. V.P. Shastri, " Biomineralization: A confluence of materials science, biophysics, proteomics and evolutionary biology", MRS Bulletin, 40 (6); DOI: 10.1557/mrs.2015.118 (2015)
2. E. Nicoli, M.I. Syga, M. Bossetti, and V.P. Shastri "Enhanced Gene Silencing through Human Serum Albumin-Mediated Delivery of Polyethyleneimine-siRNA Polyplexes" PLOS One, Published Online April 9, 2015 (DOI: 10.1371/journal.pone.0122581)
3. N. Blumenthal, O. Hermanson, B. Heimrich, and V.P. Shastri, Stochastic nanoroughness modulates neuron-astrocyte interactions and function via mechanosensing ion-channel, Proc. Natl. Acad. Sci. USA, Published online October 27, 2014 (DOI: 10.1073/pnas.1412740111); HIGHLIGHTED ARTICLE on THE PNAS WEBSITE, Write up on the MRC-UK website image of the day.
4. J. Voigt, J. Christensen, and V.P. Shastri, Differential Uptake of Nanoparticles by Endothelial Cells through Polyelectrolytes with Affinity for Caveolae, Proc. Natl. Acad. Sci. USA, 111 (8), 2942-2947 (2014) COVER of FEBRUARY 25th, 2014 Issue
5. D. Vonwil, J. Christensen, S. Fischer, O. Ronneberger and V.P. Shastri, Validation of Micro-CT/FMT Multimodal In Vivo Imaging in Rats, Mol Imaging Biol DOI: 10.1007/s11307-013-0698-8 (2013)
6. A. Forget, J. Christensen, S. Luedeke, E. Kohler, S. Tobias, M. Matloubi, R. Thomann and V. P. Shastri, Polysaccharide hydrogels with tunable stiffness and proangiogenic characteristics via α-helix-to-β-sheet switch in secondary structure, Proc. Natl. Acad. Sci. USA, http://dx.doi.org/10.1073/pnas.1222880110, COVER Article of AUGUST 6th, 2013 Issue, featured in www.phys.org
7. C.J. Pino, J. Gutterman, D. Vonwil, S. Mitragotri and V.P. Shastri, "Glycosylation facilitates transdermal transport of macromolecules", Proc Natl. Acad. Sci. U S A., 109(52):21283-8. doi: 10.1073/pnas.1200942109. Epub 2012 Dec 10 (2012).
8. W.J. Znidarsic, I.-W. Chen and V.P. Shastri, "Influence of surface charge and protein intermediary layer on the formation of biomimetic calcium phosphate on silica nanoparticles", J. Mater. Chem., 22, 19562 (2012), (DOI: 10.1039/c2jm31733h) (2012)
9. W.E. Thomas, D.E. Discher and V.P. Shastri, "Mechanical Regulation of Cells by Materials and Tissues", MRS Bull., 35(8), 578-583 (2010)

10. T. Soike, A. Streff, C. Guan, R. Ortega, M. Tantawy, C. Pino and V. P. Shastri, "Engineering a Material Surface for Drug Delivery and Imaging using Layer-by-Layer Assembly of Functionalized Nanoparticles" Advanced Materials, Published online Feb 9, 2010 (2010). (DOI: 10.1002/adma.200903069) (Invited Paper), Commentary in Nature Materials, 9, 292-293 (2010)
11. P.J. Emans, L.W. van Rhinjna, T.J.M. Welting, A. Cremers, N. Wijnands, F. Spaaapen, J.W. Voncken and V. P. Shastri., "Autologous engineering of cartilage", Proc. Natl. Acad. Sci. USA, Published Online Feb 4, 2010 (2010) (DOI: 10.1073/pnas.0907774107) (selected as a F1000 article)
12. J.C. Sy, A. Klemm and V.P. Shastri "Emulsion-Based Control of Electrospun Polymer Fibers" Advanced Materials, 21(18), 1814-1819 (2009) doi: 10.1002/adma.200701630
13. V. P. Shastri, "In vivo Engineering of Tissues: Biological Considerations, Challenges, Strategies, and Future Directions" Advanced Materials, 21 (32-33), 3246 (2009). (DOI: 10.1002/adma.200900608) (Invited Paper)
14. H.F. Diniz Oliveira, A.A. Weiner, A. Majumder and V.P. Shastri, "Non-covalent Surface Engineering of an Alloplastic Polymeric Bone Graft Material for Controlled Protein Release" J. Controlled Release, 126(3), 237-245 (2008)
15. A.M. Lipski, C. Pino F.R. Haselton, I-W. Chen and V.P. Shastri, "Influencing Cell Morphology via Nanoparticle Modification of a Biomaterial Surface", Biomaterials, 29(28), 3836-3846 (2008) doi:10.1016/j.biomaterials.2008.06.002
16. E. Sussman, M. B. Clarke and V. P. Shastri, "A Single Step Process to Produce Surface-Functionalized Nanoparticles from Non-Functionalized Degradable Polymers ", Langmuir, 23(24), 12275-12279 (2007)
17. A. Jayagopal, E. Sussman and V.P. Shastri, "Functionalized Solid Lipid Nanoparticles for Trans-Endothelial Delivery", IEEE Transactions on Nano-Bioscience, 7(1), 28-34 (2008)
18. A.M. Lipski, C. Jacquiery, H. Choi, D. Eberli, M.M. Stevens, I. Martin, I-W. Chen and V.P. Shastri, "Nano-scale engineering of biomaterial surfaces", Advanced Materials, 19(4), 553-557 (2007)
19. S. Daxini J. Nichol A. Sieminski G. Smith K. Gooch and V.P. Shastri, " Micropatterned polymers surfaces improve retention of endothelial cells exposed to flow-induced shear stress ", Biorheology, 43, 45-55 (2006)
20. M.M. Stevens, R.P. Marini, D. Schaefer, J. Aronson R. Langer, and V.P. Shastri "In Vivo Engineering of Organs: The Bone Bioreactor", Proc. Natl. Acad. Sci. USA, 102(32), 11450 – 11455 (2005) (Commentary in Science: R. Service, Technique Uses Body as 'Bioreactor' to Grow New Bone, Science, 309,683 (2005))
21. P.J. Lee R. Langer and V.P. Shastri, "Role of n-Methyl Pyrrolidone in the Enhancement of Transdermal Transport", J. Pharm. Sci., 94(4), 912-917 (2005)
22. A. Zelikin D.M. Lynn, J. Farhadi, I. Martin, V.P. Shastri, and R. Langer, "Erodible Conducting Polymers for Potential Biomedical Applications", Angew. Chem. Intl. Ed. 41(1), 141-144 (2002)
23. V.P. Shastri, I. Martin and R. Langer, "Macroporous polymeric foams by hydrocarbon templating", Proc. Natl. Acad. Sci. USA, 97(5), 1970 (2000)
24. K.S. Anseth, V.R. Shastri and R. Langer, "Photopolymerizable Degradable Polyanhydrides", Nature Biotechnology, 17(2), 156-159 (1999)
25. J.A. Williams, X. Yuan, L.E. Dillehay, V.R. Shastri, H. Brem and J.R. Williams, "Synthetic, Implantable Polymers for Local Delivery of IUDR to Experimental Human Malignant Glioma", Int. J. Rad. Oncology Biol. Phys., 42(3), 631-639 (1998)
26. C.E. Schmidt, V.R. Shastri, J.P. Vacanti and R. Langer, "Stimulation of Neurite Outgrowth Using Electrically Conducting Polymer", Proc. Nat. Acad. Sci. USA., 94, 8948-8953 (1997), *Equally Contributing Authors (Write ups in C&E News, MIT website (http://web.mit.edu/newsoffice/1997/nerve-0910.html) and other news media)

Books Edited:

1. Co-Editor (Editors: N. Parris, L. Liu, C. Song, V. P. Shastri), ACS Symposium Series titled Controlled Release from Naturally Occurring Materials, 992, ACS Publications (2008) (SBN13: 9780841274242, eISBN: 9780841221352, DOI: 10.1021/bk-2008-0992)
2. Editor (Co-Editors: A. Lendlein, L-S. Liu, A. Mikos, S. Mitragotri), MRS Symposium Series, Title: Advances in Material Design for Regenerative Medicine, Drug Delivery and Targeting/Imaging, Volume 1140 (ISBN: 978-1-60511-112-4)
3. Co-Editor (Editors: K. Gall, T. Ikeda, P. Shastri, A. Lendlein), MRS Symposium Series, Title: Active Polymers, Volume 1190 (2009) (ISBN: 978-1-60511-163-6)
4. Editor (Co-editors: G. Altankov, A. Lendlein), Nanoengineered Systems for Regenerative Medicine, Springer (In Progress) (2010) (ISBN 978-90-481-8789-8 (PB), ISBN 978-90-481-8788-1 (HB), ISBN 978-90-481-8790-4 (e-book))

Selected Patents (from over 50 issued and pending):

1. Shastri, Tarcha and Langer, Semi-Interpenetrating Polymer Networks, US 5,837,752

2. Anseth, Langer and Shastri, Photocurable, Biodegradable Polymer Systems for Orthopaedic and Dental Applications, US 5,902,599
3. Shastri, Schmidt, Langer and Vacanti, Neuronal Stimulation Using Electrically Conductive Polymers, US 6.095,148
4. Shastri, Rahman, Martin and Langer, Electroactive Materials for Stimulation of Biological Activity of Bone Marrow Stromal Cells, US 6,190,893.
5. Shastri and Langer, MRI Contrast Agents, US 6,355,224.
6. Shastri, Martin, Langer and Seidel, Three Dimensional Polymer Matrices, US 6,471,993.
7. Shastri, Martin, Langer and Rahman, Electroactive materials for stimulation of biological activity of stem cells, US 6,569,654
8. Shastri. Yue, and Langer, Drug Delivery Composition and Device, US 6,582,717
9. Shastri, Yue, Hildgen, Sinisterra and Langer, Method of Increasing the Efficacy of Antibiotics by Complexing with Cyclodextrins, US 6,699,505
10. Shastri, Degradable polymers from derivatized ring-opened epoxides, US 6,730,772
11. James, Anderson, Goodship, and Shastri, Tissue Regrafting, US 7,108,721
12. Shastri, Zelikin, Lynn, Martin and Langer, Bioerodible Conducting Materials, US 7,291,693
13. Ashman and Shastri, "Initiators and Crosslinkable polymeric materials", US 7,585,515