

Curriculum Vitae

Akhilesh Kumar Shakya, Ph.D
Research Assistant Professor
Chemical Engineering department
Texas Tech University, Lubbock Texas
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Positions and Employment:

2015-Ongoing, Research Assistant Professor, Texas Tech University, USA

Academic Training:

2013-2015 Postdoctoral research fellow, Texas Tech University, USA
2012-2013 Postdoctoral Fellow, Karolinska Institute Stockholm, Sweden
2006-2012 PhD in Bioengineering, Indian Institute of Technology, Kanpur India
2004-2006 MSc in Biotechnology, Lucknow University, India

Awards and Professional Memberships:

2012 Swiss Government Excellence Post-Doctoral fellowship (not availed)
2011 Best poster presentation award in 4th Indo-Australian Conference on “Biomaterials, tissue engineering and drug delivery systems” held in India February 10-12, 2011.
2011 International travel award from Department of Science and Technology (DST)
2011 Appreciation award for publications at Indian Institute of technology Kanpur, India
2008 Council of Science & Industrial research (CSIR NET) Senior Research Fellowship
2006 Council of Science & Industrial research (CSIR NET) Junior Research Fellowship
2006 Indian Council of Medical Research (ICMR) Junior Research fellowship (not availed)
2006 Council of Science & Industrial research (CSIR NET) Lectureship 2005
2006 Best student award in Master of Science
2004 Department of Biotechnology India (DBT) MSc Scholarship
2002 Best student award in Bachelor of Science 2002

Peer-reviewed publications:

1. Akhilesh Kumar Shakya, Ashok Kumar, Rikard Holmdahl, Kutty Selva Nandakumar. Macrophage derived reactive oxygen species protects against autoimmune priming with a defined polymeric adjuvant. *Immunology*. 2015, doi: 10.1111/imm.12546.
2. Era Jain, Apeksha Damania, Akhilesh Kumar Shakya, Anupam Kumar, Shiv K. Sarin, Ashok Kumar. Fabrication of macroporous cryogels as potential hepatocyte carriers for bioartificial liver support. *Colloids Surf B Biointerfaces*. 2015 Oct 23;136:761-771.

3. Akhilesh Kumar Shakya, Akshay Srivastava, Ashok Kumar. Polymeric cryogel based boronate affinity chromatography for separation of ribose nucleic acid. *Wiley Current protocols in Nucleic acid chemistry* 2015; 63:10.16.1-10.16.10.
4. Akhilesh Kumar Shakya, Harvinder Singh Gill. A comparative study of microneedle-based cutaneous immunization with other conventional routes to assess feasibility of microneedles for allergy immunotherapy. *Vaccine* 2015 (DOI: 10.1016/j.vaccine.2015.06.042).
5. Akhilesh Kumar Shakya, Kutty Selva Nandakumar. Synthetic polymer as an adjuvant in collagen induced arthritis. *Wiley Current protocols Mouse biology* 2014; 4:1-12.
6. Akhilesh Kumar Shakya, Kutty Selva Nandakumar, Ashok Kumar. Chemical cross-linking abrogates adjuvant potential of natural polymers, *RSC Advances* 2014, 4, 13817-13821.
7. Akhilesh Kumar Shakya, Rikard Holmdahl, Kutty Selva Nandakumar, Ashok Kumar. Polymeric cryogels are biocompatible and their biodegradation is independent of oxidative radicals. *Journal of Biomedical Materials Research* 2014 Oct;102(10):3409-18.
8. Akhilesh Kumar Shakya, Rikard Holmdahl, Kutty Selva Nandakumar, Ashok Kumar. Characterization of chemically defined poly-N-isopropylacrylamide based copolymeric adjuvants. *Vaccine* 2013; 31:3519-27.
9. Akhilesh Kumar Shakya, Ashok Kumar. Recent developments in atom transfer radical polymerization initiators for development of polymer-protein bioconjugates *Journal of Bioscience and Biotechnology* 2013;2: 1-11. (Invited article)
10. Akhilesh Kumar Shakya, Kutty Selva Nandakumar. Polymers as immunological adjuvants: An update on recent developments. *Journal of Bioscience and Biotechnology* 2012;1:199-210. (Invited article)
11. Akhilesh Kumar Shakya, Kutty Selva Nandakumar. Polymeric Adjuvants in Studying Autoimmune Responses and Vaccination against Infectious Diseases. *Journal of the Royal society Interface* 2013, Feb 6; 10(79): 20120536.
12. Akshay Srivastava, Akhilesh Kumar Shakya*, Ashok Kumar. Boronate affinity chromatography of cells and biomacromolecules using cryogels. *Enzyme and Microbial Technology* 2012;51:373-381(*Sharing first authorship).
13. Akhilesh Kumar Shakya, Ashok Kumar, Dorota Klaczkowska, Malin Hultqvist, Kristin Hagenow, Rikard Holmdahl, Kutty Selva Nandakumar. Influence of MHC, T cells and oxidation status on arthritis induced with collagen and a thermo-responsive polymeric adjuvant. *American journal of pathology* 2011,179;5:2490-2500.

14. Akhilesh Kumar Shakya, Ashok Kumar and Kutty Selva Nandakumar A thermo-responsive polymeric [poly(*N*-isopropylacrylamide)] adjuvant with collagen induced autoimmunity and arthritis in mice. *Journal of the Royal Society Interface* 2011;8: 1748-1759.

15. Akhilesh Kumar Shakya, Poonam Sharma, Ashok Kumar. Synthesis and characterization of thermo-responsive poly(*N*-isopropylacrylamide)-bovine liver catalase bioconjugate. *Enzyme and Microbial Technology*, 2010;47:277-282.

16. Akhilesh Kumar Shakya, Haider Sami, Akshay Srivastava, Ashok Kumar. Stability of responsive polymer–protein bioconjugates. *Progress in Polymer Science*, 2010;35:459-486.

Book chapters

17. Akhilesh Kumar Shakya, Ashok Kumar. Biocompatibility of macroporous cryogel materials, In: *Supermacroporous cryogels: Biomedical and Biotechnological applications*, Edited by Ashok Kumar, CRC Press Aug 2015.

18. Akhilesh Kumar Shakya*, Harishkumar Madhyastha. Polymeric nanoparticles for vaccine delivery, In: *Integrating Biologically-Inspired Nanotechnology into Medical Practice*. Edited by Dr. Anima Nanda and M. Amin Bhat. IGI Global; 2015 (*corresponding author).

19. Akshay Srivastava, Akhilesh Kumar Shakya, Ashok Kumar. Particulate/Cell Separations Using Macroporous Monolithic Matrices, In: *Advanced Separations by Specialized Sorbents* Edited by Ecaterina Stela Dragan, CRC Press 2014.

20. Akhilesh Kumar Shakya*, Kutty Selva Nandakumar. Stimuli-Responsive Polymers as Adjuvants and Carriers for Antigen Delivery In: *Responsive Materials and Methods* Edited by: Ashutosh Tiwari and Hisatoshi Kobayashi. Scrivener Publishing Wiley 2013 (*corresponding author).

21. Akhilesh Kumar Shakya*, Kutty Selva Nandakumar. Nanomaterials applications in activation and suppression of immune response In: *handbook of research Diverse application of nanotechnology in biomedicine, chemistry, and engineering* Edited by Shivani Soni and Amandeep Salhotra. IGI Global. 2014 (*corresponding author).

22. Akhilesh Kumar Shakya*, Kutty Selva Nandakumar. New generation vaccines: need for safe and improved adjuvant In: *Vaccines and vaccine technology* Edited by Jose Ronnie Vasconcelos OMICS Group eBooks 2013, Foster City. USA (*corresponding author).

Conference proceedings

1. Akhilesh Kumar Shakya, Harvinder Singh Gill. *Cutaneous allergen-specific immunotherapy using coated microneedles*. Skin Vaccination Summit, Switzerland 2015.

2. Akhilesh Kumar Shakya, Harvinder Singh Gill. *Allergen-coated microneedles as a novel way for asthma preventive immunotherapy*. Annual meeting of Controlled Release Society 2015, Edinburg Scotland
3. Mikel Gatica, Harvinder Singh Gill, Akhilesh Kumar Shakya. *Delivery of Ovalbumin through microneedles to prevent Ova allergy in mice*. SACNAS National conference 2014, Los Angeles USA.
4. Akhilesh Kumar Shakya, Ashok Kumar, Kutty Selva Nandkumar. *Poly-N-isopropylacrylamide as an adjuvant in collagen induced arthritis*. 4th Indo-Australian conference "Biomaterials, tissue engineering and drug delivery systems" Gujrat India, 2011.
5. Akshay Srivastava, Akhilesh Kumar Shakya, Ashok Kumar. *Boronate affinity chromatography of cells and biomacromolecules using cryogels*. 4th Indo-Australian conference "Biomaterials, tissue engineering and drug delivery systems" Gujrat India, 2011.
6. Akhilesh Kumar Shakya, Ashok Kumar, Kutty Selva Nandkumar. *Thermo-responsive poly-N-isopropylacrylamide as an adjuvant in experimental rheumatoid arthritis*. Annual Meeting & Exposition Society for Biomaterials 2011, Orlando Florida USA.
7. Akshay Srivastava, Akhilesh kumar shakya, Ashok Kumar. *Poly(N-vinylcaprolactam) Based Cryogel Scaffold for Tissue Engineering Applications: Synthesis & Biophysical characterization*. Annual meeting & Exposition, Society for Biomaterials 2010. Seattle Washington USA.
8. Poonam Sharma, Akhilesh Kumar Shakya, Ashok Kumar. *Synthesis and characterization of thermo-responsive poly (N-isopropylacrylamide)-bovine liver catalase bioconjugate*. APA international conference 2009, Kathmandu Nepal.