



Department of Chemistry
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Permanent Address:

Father Name : Sri Ramesh Chandra Srivastava
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Allahabad-221506, U.P., India

1. Nationality : Indian
2. Indicate whether belongs to SC/ST category : General
3. Department : Chemistry
4. Date of Birth : 28th February, 1978
5. Language : Hindi, English and German
6. **Academic Qualifications (Metric onwards)** :

Examination Passed	Board/University	Year of passing	Percentage of Marks	Division	Subjects
High School	U. P. Board	1992	63.0	1 st	Hindi, English, Math-2, Science-2, Biology, Social Science
Intermediate	U. P. Board	1994	61.5	1 st	Hindi, English, Physics, Chemistry, Biology
B.Sc.	University of Allahabad, U.P. India	1997	70.0	1 st	Chemistry, Botany (Zoology only up 2 years)
M.Sc.	University of Allahabad, U.P. India	1999*	72.3	1 st	Chemistry (Final Year : Physical Chemistry)
Diploma in German Language	University of Allahabad, U.P. India	2006	54.0	2 nd	German Language
Computer Literacy	Delta Computers	2003	Grade A	1 st	MS Dos & Windows, MS Office (MS Word, MS Excel, MS Access, PowerPoint) FoxPro, Chem Draw.

* Academic session was 1997 to 1999 but year of passing is 2000 due to one year session late.

7. **Research Degree** : D. Phil
Title of thesis : "Studies of Some Radical Initiated Polymerization in Solution"
University : University of Allahabad, Allahabad, U.P., India
Award date : 16th February, 2006
8. Field of Specialization : In Post graduation : Physical Chemistry
In Research : Polymer Chemistry
9. Research Experience : Doctoral 4 years 10 months : Post Doctoral: ≈8 years
10. Distinction /Prizes/Awards/Medals/Honours, etc :

A. Recipient of **Project Fellowship** from University Grants Commissions, New Delhi in the Year 2003-2006. **Project Title:** "Polymerization of commercially useful vinyl monomers like acrylic acid, methacrylic acid, N,N' dimethyl acrylamide, N-Methylolacrylamide etc. and to synthesize & characterize the graft copolymers of these monomers with xanthan gum, chitosan, dextran etc. resulting in ion exchangers, super-absorbents, smart gels etc." **Preceptor:** Prof. Kunj Behari, Ex-Head, UGC Emeritus Fellow Department of Chemistry, University of Allahabad, Allahabad 211002, India.

B. Recipient of **Research Associateship** from Council of Scientific & Industrial Research, New Delhi in the Year 2007 **Project Title:** "Preparation of hydrogels, antimicrobial agents and flocculants by grafting vinyl monomers onto natural polymers". **Preceptor:** Prof. Kunj Behari, Ex-Head, UGC Emeritus Fellow Department of Chemistry, University of Allahabad, Allahabad-211002, India.

C. Award of Young Scientist Scheme DST New Delhi under SERC Fast Track Proposal (20th Sep. 2007-30th June 2009) **Project Title:** "Synthesis and study of an amino acid based vinyl monomers and polymers in aqueous media" **Total project Cost:** Rs.19, 92,000.00. **Working Place:** Department of Chemistry, Banaras Hindu University, U.P. India.

11. Period of teaching experience: **PG Classes** : 6 Years
UG Classes : 7 Years
Others : **Research Works**: ≈13 Years (Including Ph.D.)

12. **Research Projects:**
(a) Completed : **01**

S. No.	Title of projects	Funding Agency	Amount (Rs.)
1.	"Synthesis and study of an amino acid based vinyl monomers and polymers in aqueous media" (SR/FTP/CS-109/2006 dated 13.03.2007)	DST, New Delhi	19,92,000

- (b) On going** : **01**

S. No.	Title of projects	Funding Agency	Amount (Rs.)
1.	"Synthesis and Characterization of smart polymeric hydrogel by free radical polymerization process" (F. No. 42-387/2013 (SR))	UGC, New Delhi	9,86,800/-

13. Participation in Training Course & Teaching/ Learning/Evaluation Technology Programmes

S. No.	Programmes	Duration	Organiser(s)
1.	Orientation Course	26-11-2012 to 22-12-2012	Academic Staff College, GGV, Bilaspur, (CG)
2.	Short Course on Organic Solar Cells	July 9, 2012 to July 14, 2012	Samtel Centre for Display Technologies, IIT Kanpur, Kanpur (U.P.)

13. **No. of Conferences/Seminars/Symposia/Workshops attended** (Details on separate sheet)

Please see **Annexure 1 Part B**

14. **Other extra-curricular activities** (Details on separate sheet):

- Life member of Indian Science Congress Association, India (Membership No: L12049)
- Life member of Indian Council of Chemist, India (Membership No.: LM 1242)

15. **Additional Information (if any): One Indian Patent (Patent no. is 247798)**

Reviewer of the Following Peer Reviewed journals

1.	Journal of Applied Polymer Science	3.	Carbohydrate Polymers
2.	J. Macromolecular Science Part A-Pure & Applied Chemistry	4.	E-Polymers

16. **Publication** (Details on separate sheet): **Please see Annexure-1 Part A**

Papers (National) : Published: **01** under Publication: Nil
Papers (International) : Published: **19** under Publication: **01**

Total Number of citations: 142, h-index : **7**, i10 index : **06** as on 6th Jan 2014

17. **Research Interest:** An increasing importance of energetic polymer is the new area of polymer research but due to lack of monomers, the energetic monomers, which are available, now days are limited. Thus to synthesize the monomer is the main target, which will work as a unit of energetic polymer. On the other hand biodegradable super absorbent polymer has great importance in agriculture and daily use items, therefore an attempt will be made to synthesize new super absorbent polymers which will be biodegradable.

18. **Instrument Operation and Techniques Known:** UV visible Spectrophotometer, Potentiometer, Conductometer, Nephelometer, Grafting technique, Monomer purification technique, Controlled radical polymerization process: Atom transfer radical polymerization technique, Reversible Addition-Fragmentation chain Transfer polymerization method,

Date: 08/01/2014

Signature of Applicant

Annexure-1

Part-A**Patent:**

1. *A process for preparing graft copolymer used for absorbing heavy metal* by Arti Srivastava, Rajesh Kumar, Kunj Behari : Patent Application No.: 1309/DEL/2003. **Patent no. : 247798**

Published Research Papers:

1. Kumar R. Srivastava A. Behari K.: Studies on Aqueous Polymerization of 2- Acrylamido-2-Methyl-1-Propanesulphonic Acid Initiated by Peroxydiphosphate / Silver (I) Redox Pair – A Kinetic Study. Polymer Preprint, Division of Polymer Chemistry: 44(1), 1251 (2003), *Published by American Chemical Society*
2. Srivastava A. Behari K.: Graft copolymerization of 2-acrylamido-2-methyl-1- propanesulphonic acid onto xanthan gum by Ascorbic/Bromate redox pair, Polym. Mat. Sci. & Eng.: 90, 698 (2004), *Published by American Chemical Society.*
3. Banerjee J. Srivastava A. Behari K.: Polymerization of N-vinyl formamide by using an initiator 2, 2' - Azobis [2-(2-imidazolin-2-yl) propane] dihydrochloride. Polymer Preprint, Division of Polymer Chemistry, 46(1), 733 (2005), *Published by American Chemical Society.*
4. Srivastava A. Srivastava, A. Behari, K. : Studies on Thermal stability of Graftcopolymer of vinyl monomers and xanthan gum Polym. Mater. Sci. & Eng: 92, 303 (2005).*Published by American Chemical Society*
5. Srivastava A. Behari K. Banerjee J. Srivastava A.: Synthesis & Characterization of Dextran-g-AMPS by using PMS/Thiourea redox pair, *Designed Monomers & Polymers*: 8(4), 335 (2005). Published by VSP (International Science publisher),
6. Behari K. Banerjee J. Srivastava A. Mishra, D. K. Studies on graft copolymerization of N-vinyl formamide onto Guar gum initiated by bromate/ascorbic acid redox pair. *Indian Journal of Chemical Technology*, 12, 664 (2005) Published by CSIR, India,
7. Srivastava A. Behari K. : Synthesis and characterization of Graft copolymer and studies for metal ion sorption and swelling behaviour (Guar gum-g-N-vinyl-2-pyrrolidone) *Journal of Applied Polymer Science*, 100(3), 2480-89, (2006), Published by Wiley Interscience.
8. Panday P.K. Srivastava A. Behari K.: Studies on Graft Copolymerization of 2-acrylamido -2-methyl-1-propane sulphonic acid onto Guar gum by Bromate/ Mandelic acid redox pair, *Designed Monomers & Polymers*, 9 (3), 247-260 (2006) Published by VSP (International Science publisher).
9. Banerjee J. Srivastava A. Srivastava A. Behari K. : Studies on synthesis and characterization of Xanthan gum-g-N-vinyl formamide using PMS/Ag (I) system. *Journal of Applied Polymer Science* 101 (3), 1637-1645 (2006).Published by Wiley Interscience.
10. Srivastava A. Behari K. : Studies on graft copolymerization of N-vinyl-2-pyrrolidone on to Carboxymethylcellulose (sodium Salt) and metal ion sorption behavior *Journal Of Macromolecular Science Part A: Pure And Applied Chemistry* 43, 1065-1081 (2006) Published by Talor & Francis group.
11. Panday P. K. Srivastava A. Tripathi J. Behari K. : Graft Copolymerization of Acrylic Acid on to Guar Gum initiated by Vanadium (V) – Mercaptosuccinic Acid Redox Pair, *Carbohydrate Polymers*, 65(4), 414 - 420 (2006), Published by Elsevier.
12. Kumar R. Srivastava A. Behari K. : *Graft copolymerization of methacrylic acid onto xanthan gum by Fe²⁺/H₂O₂ redox initiator*: *J. Applied Polymer Science(USA)* 105 (4), 1922-1929 (2007), Published by Wiley Interscience.
13. Kumar R. Srivastava A. Behari K. : *One-pot synthesis of a polysaccharide-based graft copolymer with an efficient redox pair (Fe²⁺/BrO₃⁻)*: *J. Applied Polymer Science (USA)* 107(5),2883-2891(2008), Published by Wiley Interscience.
14. Arti Srivastava. Vivek Mishra. Shailendra Kumar Singh. and Rajesh Kumar: *One pot synthesis and characterization of industrially important graft copolymer (GOH-g-ACM) by using peroxymonosulphate/ mercaptosuccinic acid redox pair*, e-Polymer (U.K.) e-Polymers No. 006 (2009).
15. Srivastava A. Behari K. : Modification of natural polymer via free radical graft copolymerization of 2-acrylamido-2-methyl-1-propane sulphonic acid in aqueous media and to study swelling and metal ion sorption behaviour, *Journal of Applied Polymer Science*, 114(3), 1426-1434, 2009. , Published by Wiley Interscience.
16. Rajesh Kumar. Arti Srivastava and Kunj Behari : *Synthesis & characterization of polysaccharide based graft copolymer by using potassium peroxymonosulphate/ascorbic acid as an efficient redox initiator in inert atmosphere*, *J. Applied Polymer Science (USA)* : 112(3), 1407-1415(2009), Published by Wiley Interscience.
17. Arti Srivastava. Vivek Mishra. Shailendra Kumar Singh and Rajesh Kumar*: *Vanadium (V)/ Mandelic acid initiated Graft copolymerization of Acrylamide onto Guar gum in an aqueous medium*, *J. Applied Polymer Science (USA)* : 115(4), 2375-2385 (2010). DOI 10.1002/app.31172, Published by Wiley Interscience.

18. Srivastava, Arti; Kumar, R.; Srivastava, Ambika; Singh, P. and Mishra, V.: *Comparative study of thermal degradation behaviour of graft copolymers of polysaccharides and vinyl monomers*, Journal of Thermal Analysis and Calorimetry : 107(1), 211-223(2012). DOI 10.1007/s.10973-011-1921-y, Published by Springer.
19. Srivastava, Arti; Kumar, R., *Synthesis and characterization of acrylic acid-g-(k-carrageenan) copolymer and study of its application; International Journal of Carbohydrate Chemistry*, vol. 2013, Article ID 892615, 8 pages, 2013. doi:10.1155/2013/892615.
20. Srivastava, Ambika; Singh, Pooja; Srivastava, Arti; and Kumar, Rajesh; Amphiphilic Fluorescent well-defined Living Polymer from Indole-3-carboxaldehyde and 4-Bromo-1, 8-naphthalic anhydride: Synthesis and Characterization, Journal of Polymers (Under Review **2014**).

Part-B

Paper Presented /Accepted in different International/National Conferences/ Symposiums/ Proceedings

1. Attended National Seminar on "POLYMER SMART MATERIAL" at Moti Lal Nehru National Institute of Technology, Allahabad on 14th September 2002.
2. Studies of aqueous polymerization of 2-acrylamido-2-methyl-1-propanesulphonic acid initiated by peroxydiphosphate/Ag(I) redox pair: A kinetic study, Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003).
3. Graft copolymerization of 2-acrylamido-2-methyl-1-propanesulphonic acid onto xanthan gum by Ascorbic/Bromate redox pair, Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA , United States, March 28-April 1, 2004 (2004)
4. Graft copolymerization of 4-vinyl pyridine onto guar using potassium peroxy monosulphate/ ascorbic acid redox pair, National seminar on "POLYMER RESEARCH IN INDIA: OPPORTUNITY & CHALLENGES" at Moti Lal Nehru National Institute of Technology, Allahabad on 25th September 2004.
5. Paper in 74th session of National Academy of Sciences held at University of Rajasthan, Jaipur on 2-4th December 2004
6. Attended National seminar on "POLYMER RESEARCH IN INDIA: OPPORTUNITY & CHALLENGES" at Moti Lal Nehru National Institute of Technology, Allahabad on 25th September 2004.
7. Presented paper entitled "*Synthesis and characterization of Dextran-g-AMPS using KHSO₅/thiourea redox pair*" - in 91ST INDIAN SCIENCE CONGRESS ASSOCIATION held at Punjab University on 3-7th January 2004.
8. Presented paper entitled "*Studies on synthesis and characterization of Xanthan gum-g-N-vinyl formamide using PMS/Ag (I) system*" in 7th conference of the INTERNATIONAL ACADEMY OF PHYSICAL SCIENCES held on 21-23 December 2004.
9. Polymerization of N-vinyl formamide by using an initiator 2, 2' - Azobis [2-(2-imidazolin-2-yl) propane] dihydrochloride, Abstracts of Papers, 229th ACS National Meeting, San, Diego, CA, United States, March 13-17, 2005 (2005)
10. Studies on Thermal stability of Graft copolymer of vinyl monomers and xanthan gum, Abstracts of Papers, 229th ACS National Meeting, San, Diego, CA, United States, March 13-17, 2005 (2005).
11. Presented paper entitled "*Synthesis and characterization of graft copolymer of xanthan gum and 2-acrylamido-2-methyl-1-propane sulphonic acid by using BrO₃/Thiourea redox pair*" (In Chemical Sciences) in 92nd INDIAN SCIENCE CONGRESS ASSOCIATION held at Nirma University on 3-7th January 2005.
12. Presented paper entitled "*Studies on Graft Copolymerization of 2-acrylamido-2-methyl-1-propane sulphonic acid onto Guar gum by Bromate/ Mandelic acid redox pair*" (In Material Sciences) in 92nd INDIAN SCIENCE CONGRESS ASSOCIATION held at Nirma University on 3-7th January 2005.
13. Attended IST NATIONAL CONFERENCE ON CHITIN AND CHITOSAN organized by Moti Lal Nehru National Institute of Technology, Allahabad on 24 May 2005.
14. Presented paper entitled "*Studies on graft copolymerization of N-vinyl-2-pyrrolidone on to Carboxymethylcellulose (sodium salt) and metal ion sorption behaviour*" in 93rd INDIAN SCIENCE CONGRESS ASSOCIATION held at Acharya N. G. Ranga Agricultural University, Hyderabad on 3-7th January 2006.
15. Presented paper entitled "*Synthesis and characterization of Graft copolymer (Guar gum-g-N-vinyl-2-pyrrolidone) and studies for metal ion sorption and swelling behaviour.*" in 76th ANNUAL SESSION OF THE NATIONAL ACADEMY OF SCIENCES, INDIA, held at Indian Institute of Technology Bombay, Mumbai from October 6-8, and 2006.
16. Attended national symposium on DESIGNING THE MOLECULAR WORLD THROUGH CHEMISTRY organized by Banaras Hindu University, Varanasi on 24-25 March 2006.
17. Presented paper entitled "*Synthesis and characterization of Graft copolymer based on polysaccharide and vinyl monomer via free radical.*" in The First International And Sixth ISAMPE International Conference (INCCOM-6) On Future Trends In Composites Materials, during 12-14th December 2007 at Indian Institute of Technology, Kanpur, India.
18. Attended international workshop on NANOCERAMICS AND NANOCOMPOSITES, held at Indian Institute of Technology, Kanpur during September 8-9, 2007.

19. Presented paper entitled "One pot synthesis and characterization of polysaccharide based graft copolymer (Xanthan gum-g-2-acrylamido-2-methyl-1-propane sulphonic acid) via free radical in aqueous medium and to study some applications" in International conference on advances in polymer science and technology (Poly – 2008), during 28-31st January 2008 at Indian Institute of Technology, Delhi, India.
20. Presented paper entitled "One pot synthesis and characterization of industrially important graft copolymer" in International conference on World forum on advanced materials POLYCHAR 16, during 17-21 February 2008 at Lucknow, India.
21. Presented paper entitled "Free radical graft copolymerization of acrylamide onto guar gum and to study swelling behavior" in 27th Annual conference of Indian Council of Chemists during 26-28 December 2008 at Gurukul Kangari University, Haidwar, India.
22. Presented paper entitled "Acrylic acid grafted kappa carrageenan copolymer: synthesis, characterization and study on swelling, flocculation and metal ion sorption properties." in international Conference on FRONTIERS OF POLYMERS & ADVANCED MATERIALS, MACRO-2010 held at Indian Institute of Technology, Delhi during December 15-17, 2010.
23. Presented paper entitled "Thermal degradation behavior of Xanthan gum graft copolymers" in 29th Annual conference of Indian Council of Chemists during 19-21 December 2010 at Department of Chemistry, Punjab University, Chandigarh, India.
24. Presented paper entitled "Synthesis and characterization of N, N' dimethylacrylamide-g-carboxymethylcellulose graft copolymer for waste water treatment" in National symposium on Advanced functional materials (NSAFM-2012) during 11-12 Feb 2012 at Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi, India.
25. Presented paper in National Seminar on Recent trends in chemical Research: Challenges Ahead during 30-31 Mar 2012 at Department of Chemistry, School of Physical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, C. G., India.
26. Attended the short Course entitled "Organic electronics and Solar Cells" held at Samtel Centre for Display Technologies, IIT Kanpur, INDIA from 09-14 July 2012.
27. Presented paper entitled "Dye Removal and Heavy Metal ions Adsorption by Graft Copolymers based on Natural Polysaccharides and vinyl monomers" in National Conference on Global Challenges new frontiers in Chemical Sciences (GC:NFCS-2012) during 22-23 September 2012 at Department of Chemistry, Kurukshetra University, Kurukshetra, India.
28. Presented paper entitled "Studies on graft copolymerization of 2-acrylamido-2-methyl-1-propane sulphonic acid onto natural biopolymer (guar gum), swelling behaviour and hazardous metal ion removal" in Fifth International Conference on Electroactive Polymers: Materials and Devices during 04-09 November 2012 at Department of Physics, Faculty of Science, Banaras Hindu University, Varanasi, India.
29. Attended the " Acquaintance program of Inter University Accelerator Centre, New Delhi on 19 July, 2013, organized by Department of Pure and Applied Physics, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)