



## **BIODATA**

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1. **Name** : **Dr. Anjali Goel**
2. Designation : Associate Professor
3. Department : Department of Chemistry,  
Kanya Gurukul Mahavidyalaya,  
Women campus of Gurukul Kangri  
University,  
Hardwar – 249407
4. Date of birth : 25.10.1961
5. Postal address : 9 -SharadVihar,  
Post-GurukulKangri,  
Hardwar – 249404
6. Email Id : anjaligoel10@gmail.com
6. Academic qualification : M.Sc., Ph.D.
7. Experience :  
(i)Teaching (Under Graduate) : approx. 02 years  
(ii)Teaching (Post Graduate) : approx. 17 years  
(iii)Research : approx. 20 years
8. Research field / Specialization : (1) Reaction mechanism and  
chemical kinetics  
: (2) Environmental studies  
: (3) Nanocatalysis
9. Research guidance at Ph.D. level : Seven students awarded &  
Four more registered
10. Research Project : One UGC Project is going on the  
topic –“ Oxidative degradation of dyes-----“.

## 11. Research Publications

1. A kinetic and mechanistic study on the oxidation of arginine and lysine by hexacyanoferrate(III) catalyzed by iridium (III) in aqueous alkaline medium, Anjali Goel, Ruchi Sharma, J. Indian Chem. Soc., 89(9) 2012, 1191-1196, ISSN:
2. Effect of PVP, PVA and POLE surfactants on the size of iridium nanoparticles, Open Journal of Inorganic Chemistry, Anjali Goel, Neetu, 2, 2012, 67-73 OJIC doi:10.4236/ojic.2012.23010 Published Online July 2012 (<http://www.SciRP.org/journal/ojic/>)
3. Colloidal iridium nanoparticles in the oxidation by hexacyanoferrate(III) in alkaline medium- A kinetic study, Anjali Goel, Sonia Sharma, Journal of Indian Chemical Society, 89(4) 2012, 507-512.
4. A kinetic study on the oxidation of glycine by hexacyanoferrate(III) ions in presence of iridium nanoparticles, Anjali Goel, Sonia Sharma, J. Chem. Bio. Phy. Sci. Sec. A, 2(2) 2012, 628-636, e- ISSN: 2249-1929.
5. Kinetic studies on nanocatalysis in some oxidation reactions, Anjali Goel, Ranjana, Neetu, International Journal of Research in Chemistry and Environment, 2(1) **2012**, 210-217, ISSN: 2248-9649.
6. Application of turmeric dye in the coating of Triphalaguggleayurvedic tablet, Anjali Goel, M.K. Bhardwaj and Neetu Rani, Journal of Applied and Natural Science, 3(2) **2011**, 307-311, ISSN; 0974-9411(print), 2231-5209(online).
7. Kinetic and mechanistic study of oxidation of cystine by hexacyanoferrate(III) ions catalysed by Ir III in aqueous alkaline medium, Anjali Goel, Savita Gupta, J. Indian Chem. Soc. 88 (2) **2011**, 211-215.
8. Brij - 35 catalysis in the oxidation of amino acids by alkaline hexacyanoferrate(III) ions, Anjali Goel, Richa Tyagi, Sonia Sharma, and Shivani, J. of Chemistry in Asia, 2(1), **2011**, 32-34, ISSN: 0975-9468.
9. Mechanistic study of the oxidation of L- phenylalanine by hexacyanoferrate(III) catalysed by iridium(III) in aqueous alkaline medium, Anjali Goel, Shivani Sharma, Transition Metal Chemistry, 35(5), **2010**, 549-554.
10. Influence of Brij-35 micelles on the oxidation of glycine by hexacyanoferrate(III) in aqueous alkaline medium, Anjali Goel, Richa Tyagi, J. Indian Chem. Soc., 87, **2010**, 1335-1339.
11. Synthesis and characterization of nano crystalline iridium oxide, Anjali Goel, Sonia Sharma, International Transactions in Applied Sciences, 1(2) **2009**, 243-251, ISSN: 0974-7273.

12. Kinetic-catalytic spectrophotometric determination of Ir(III) by its catalytic effect in the oxidation of isoleucine by hexacyanoferrate(III) ions, Anjali Goel, Savita Gupta and Sonia, International Transactions in Applied Sciences, 1(4), **2009**, 559-566.
13. Kinetics and mechanism of iridium (III) catalysed oxidation of some amino acids by hexacyanoferrate(III) ions in aqueous alkaline medium, Anjali Goel, Shakunj, Shivani, Int. J. Chem. Sci.: 6(4), **2008**, 1891-1899.
14. Kinetics and mechanism of oxidation of some aldoses by hexacyanoferrate (III) in aqueous alkaline buffered medium. J. Indian Chem. Soc., Vol. 85, **2008**, 286-289.
15. Kinetic spectrophotometric determination of iridium (III) in alkaline medium, Asian J. Chemistry, 19, 5, **2007**, 3431- 3434.
16. Biogas from organic waste diluted with sugar mill waste water, Asian J. Chemistry 19, 5, **2007**, 3435 – 3439.
17. Spectrophotometric determination of Ir (III) with cystine in alkaline medium. J. Natural and Physical Sciences, **2007**, Vol. 21.
18. A case study on characterization, treatment and utilization of Deoband sugar mill effluent. Jr. Industrial Pollution Control, 23(2), **2007**, 373 – 37.
19. Oxidation of glucose by hexacyanoferrate (III) ions in presence of disodium hydrogen orthophosphate in aqueous alkaline medium- a kinetic and mechanistic study. Int. J. Chem. Sci., 4 (4), **2006**, 807 – 812.
20. Iridium(III) catalyzed oxidation of propane-1,2-diol by hexacyanoferrate(III) in aqueous alkaline medium a kinetic and mechanistic study, Asian J. Chem., 18, 2, **2006**, 1116-1120.
21. Kinetics and mechanism of iridium (III) chloride catalysed oxidation of propanol -1 and Propanol -2 by hexacyanoferrate (III) in aqueous alkaline medium, J. Curr. Sci., 7(1), **2005**, 231.
22. A kinetic study of iridium(III) chloride catalyzed oxidation of some diols by alkaline hexacyanoferrate(III) in aqueous medium, Int., J. Chem. Sci., 3(3), **2005**, 537-541.
23. Effect of ferricyanide on the physico-chemical characteristics of sugar mill effluent. Indian J. Environ. & Ecoplan., 8(1), **2004**, 147-148.

24. A kinetic study of iridium(III) chloride catalyzed oxidation of diethylene glycol by hexacyanoferrate(III) in aqueous alkaline medium, Asian J. Chem., Vol. 16(2), **2004**, 1200-1202.
25. Kinetics and mechanism of iridium(III) chloride catalyzed oxidation of ethylene glycol and methyl glycol by hexacyanoferrate(III) in aqueous alkaline medium, J. Indian Chem. Soc., 79, **2002**, 665-667.
26. Studies on some physico- chemical characteristics of ground water in some rural areas of Hardwar, Asian J. Chem., 4, **2002**, 537 – 539.
27. Kinetics of iridium (III) catalysed oxidation of butane 1:4 diol with alkaline hexacyanoferrate (III), Asian J. Chem., 13 (2), **2001**, 505-508.
28. Kinetics and mechanism of the oxidation of ethyl glycol, D- mannitol, D- sorbitol by hexacyanoferrate (III) ions in aqueous alkaline medium, J. Indian. Chem. Soc., 76, **1999**, 392 – 394.
29. Kinetics and mechanism of oxidation of ethyl glycol by alkaline hexacyanoferrate(III) ions, Asian J. Chem., 11, 4, **1999**, 1353 -1356.
30. Kinetics and mechanism of iridium (III) chloride catalyzed oxidation of butyl diglycol by alkaline hexacyanoferrate (III) in aqueous alkaline medium, Him. J. Env. Zool., 11, **1997**, 103 – 108.

## **12 Papers presented/accepted in conferences / symposia**

1. Effect of PVP, PVA and POLE on the size of iridium nanoparticles, Internation --- GTER2012, Gurukul Kangri University, Hardwar, 11-13 Jan.2012.
2. Kinetic studies on nanocatalysis by iridium nanoclusters in some oxidation reactions Anjali Goel\*, Ranjana, Word Congress for Man and Nature, 11-13 Nov., 2011(WCMANU-11)GKV,Hardwar.
3. Synthesis of colloidal iridium nanoparticles and their roles as catalyst in homogeneous catalysis- An approach to green chemistry Chemistry. Anjali Goel, Sonia Sharma.International Conference on Chemistry of Phytopotentials: Health, Energy and Environmental Perspectives-2011, (CPHEE-2011) Dayalbagh Educational Institute (Deemed University), Dayalbagh, Agra, India. 4-6 November,**2011**
4. Synthesis of colloidal iridium nanoparticles and their catalytic activity in hexacyanoferrate(III) - amino acid redox reaction , Anjali Goel, Sonia Sharma, Ist

International conference on chemical innovation-2011(ICCI-2011), TATI University College, Malaysia, 23-24 May, **2011**.

5. Instrumental methods in the characterization of iridium nanoclusters, Anjali Goel, Sonia Sharma, Neetu, 12-13 Feb, **2011**, IIT, Roorkee
6. Colloidal iridium nanoparticles in the oxidation of alanine by hexacyanoferrate(III) in alkaline medium – A kinetic study, Anjali Goel, Sonia Sharma, Savita, Jan. 22-23, **2011**, MMH College, Ghaziabad.
7. Brij – 35 catalysis in the oxidation of amino acids by alkaline hexacyanoferrate(III) ions, Anjali Goel, Richa Tyagi & Sonia Sharma, 98th Indian Science Congress, Jan. 3-7, **2011**, Chennai.
8. Studies on oxidation of L- histidine by hexacyanoferrate(III) in aqueous alkaline medium- A kinetic study, Anjali Goel, Shivani Sharma, Sept. 4-6<sup>th</sup> **2010**, RTCR, D.N.College, Meerut.
9. Optimization and coating conditions of turmeric dye on ayurvedic tablets, Anjali Goel, Neetu Rani, 5th USSTC, **2010**, Dehradun.
10. Studies on preparation and catalytic application of nano-scale colloidal iridium metal clusters , Anjali Goel\* and Ranjana Bhatt, Neetu Rani, Nov. 8-9, **2010**, First International Conference of Chemical Education (ICCE-1), HBCSE, Tata Institute of Fundamental Research, Bombay.
11. Catalytic kinetic spectrophotometric method for the estimation of trace iridium with hexacyanoferrate(III) – phenylalanine redox system, Anjali Goel, Shivani Sharma, Feb. 4-6<sup>th</sup> **2010**, 2<sup>nd</sup> RYVS, Dehradun.
12. Status of dyes in vedic period, Anjali Goel, Neetu, World Veda Conference, November 20-22, **2009**, Gurukul Kangri Vishwavidyalaya, Haridwar.
13. Vedic law of chemical transformation, Anjali Goel, Shivani Sharma, World Veda Conference, November 20-22, 2009, Gurukul Kangri Vishwavidyalaya, Haridwar.
14. Kinetics and mechanism of oxidation of l- phenylalanine by hexacyanoferrate(III) catalysed by Ir(III) in aqueous alkaline medium, Anjali Goel, Shivani Sharma, 4<sup>th</sup> Uttarakhand State Congress of Science and Technology, November 10-12, **2009**, G.B. Pant University, Uttarakhand.
15. Catalytic application of iridium nanoclusters in the oxidation of some amino acids by hexacyanoferrate(III) ions, Anjali Goel, Sonia Sharma, 4<sup>th</sup> Uttarakhand State Congress of Science and Technology, November 10-12, **2009**, G.B. Pant University, Uttarakhand
16. Defluoridation of water using inexpensive bagasse flyash as an adsorbent, Preetika, D.S.Malik, M. K. Sharma, Anjali Goel, 4<sup>th</sup> Uttarakhand State Congress of Science and Technology, November 10-12, **2009**, G.B. Pant University, Uttarakhand.
17. Synthesis, characterization and catalytic activity of iridium nano particles, Anjali Goel, Sonia, NCCT-08, H.N.B. Garhwal University, Srinagar, 08-09 November, **2008**.
18. Kinetic mechanistic study of oxidation of cystine by hexacyanoferrate (III) catalyzed by Ir(III) in alkaline medium, Anjali Goel, Savita, 27<sup>th</sup> Annual Convention of Indian Council

- of Chemists, 26<sup>th</sup>-28<sup>th</sup> Dec., **2008**, GurukulKangri University, Hardwar(Uttrakhand), PO-40.
19. Estimation of Ir(III) by kinetic spectrophotometric method, Anjali Goel, Shakunj, 27<sup>th</sup> Annual Convention of Indian Council of Chemists, 26<sup>th</sup>-28<sup>th</sup> Dec,**2008**, GurukulKangri University, Hardwar(Uttrakhand), PP-30.
  20. Kinetic catalytic spectrophotometric determination of Ir (III) by its catalytic effect on the oxidation of isoleucine by hexacyanoferrate (III) ions. 95<sup>th</sup> Indian Science Congress association, **2008**.
  21. Kinetics and mechanism of iridium (III) catalyzed oxidation of some amino acids by hexacyanoferrate (III) ions in aqueous alkaline medium. National Conference GA ELEC – 2007, Jiwaji University, Gwalior, 7 – 9<sup>th</sup> December, **2007**, 71.
  22. Kinetic studies on the mechanism of surfactant catalyzed oxidation of glycine by hexacyanoferrate (III) in aqueous alkaline medium. 44<sup>th</sup> Annual Convention of Chemists, Indian Chemical Society, **2007**, PHY (OP) -02.
  23. Quantitative determination of macro and micro element content of some medicinal plants of Hardwar city, National seminar on “Medicinal Plants – conservation, cultivation and utilization” 9-11 March, **2006**, B – 27, 48.
  24. Trace metal levels in medicinal plants of traffic areas, National Conference of new vistas in microbiology and plant science, 124, 2006, 69.
  25. Spectrophotometric determination of Ir (III) with cystine in alkaline medium. 43<sup>rd</sup> Annual Convention of Chemists **2006**, Indian Chemical Society, PHY (OP) -19.
  26. A simple kinetic spectrophotometric method for the determination of Ir (III) in aqueous alkaline medium. 42<sup>nd</sup> Annual Convention of Chemists, **2006**, Indian Chemical Society, PHY (OP) – 18.
  27. Characterization and treatment of sugar mill effluent and its impact on seed germination and seedling growth of Triticumastivum. 41<sup>st</sup> Annual Convention of Chemists **2004**, Indian Chemical Society, Analytical Chem. Sec. 22.
  28. Biogas from organic waste diluted with sugar mill effluent, 41<sup>st</sup> Annual Convention of Chemist **2004**, Indian Chemical Society, Analytical Chem. Sec. 23.
  29. Studies on the physico- chemical characteristics of Uttam sugar mill effluent and use of hexacyanoferrate(III) for its treatment. 91<sup>st</sup> Indian Science congress, Punjab University, Chandigarh, **2004**, 167.
  30. Kinetics of the oxidation of propane 1, 2- diol by hexacyanoferrate (III) in aqueous alkaline medium catalysed by iridium (III) chloride. 39<sup>th</sup> Annual Convention of Chemists **2002**, Indian Chemical Society, PHY (OP) – 5.
  31. Iridium (III) chloride catalyzed oxidation of ethylene glycol by hexacyanoferrate (III) in aqueous alkaline medium, 37<sup>th</sup> Annual Convention of Chemists **2000**, Indian Chemical Society, PHY (OP) – 53.

01. Synthesis, characterization and catalytic activity of iridium nano particles, Anjali Goel, Sonia, NCCT-08, H.N.B.Garhwal University, Srinagar, 08-09 November, 2008.

02 Honoured by Vashaiya Ladies Club Hardwar on 25/12/2011.

#### **14 Articles/books published**

1. Jal ka rasayanik Mahatva, Gurukul Samachar, Nov.5, 1999, 11.
2. Course Book, B.Sc. IInd, Organic Chemistry, Faculty of Distance Education, GKV, Hardwar, 2005.
3. Catalysis by iridium nanoclusters, Souvenir, 27<sup>th</sup> Annual Convention of Indian Council of Chemists, 26<sup>th</sup>-28<sup>th</sup> Dec., 2008, GurukulKangri University, Hardwar(Utrakhand) Pp.-55.
4. Synthesis of colloidal iridium nanoparticles and their roles as catalyst in homogeneous catalysis- An approach to green chemistry Chemistry. Anjali Goel, Sonia Sharma, Chemistry of Phytopotentials: Health, Energy and Environmental, A chapter in Springer Book, Editors- L.D.Khemani, M.M.Shrivastava and ShaliniShrivastava.
5. Consequences of Global Warming, Anjali Goel, Ranjana, review article, International Journal of Life Sciences Biotechnology and Pharmareseach, 1(1) 2012, 27-31, ISSN: 2250-3137.
6. ManavVikaas Mein RasayanVigyankaaYogdaan, Dr. Anjali Goel, GurukulMatrika, Oct-Dec. 2011, 195, ISSN 0976-8017.
7. Non- conventional defluoridation technologies in sustainable management of drinking water resources : A review, D.S.Malik, Preetika Shukla, Anjali Goel and M.K. Sharma, Water Pollution and management, editors-D. S. Malik, Sunil Kumar, Umesh Bharti, Biotech Books, pp-181-191.ISBN : 978-81-7622-227-3.

#### **15 Invited Lectures**

Nanocatalysis – An approach to green chemistry, AnjaliGoel, Workshop on green chemistry Education, HNB Garhwal University , Srinagar, 2011.

#### **16. List of conferences/seminars/workshop/symposia attended and paper presented:-**

1. National Seminar on Hazards of Adulterations in milk, food and medicines of India, 2<sup>nd</sup> Nov. 1999, Chinmaya Degree College, Hardwar.
2. Thirty-seventh Annual Convention of Chemists, 2000, (Indian Chemical Society, Kolkata), Nov. 15-18,2000, GurukulKangri University, Hardwar.
3. National workshop on Radiochemistry and application of radioisotopes, April 29 to May 07, 2003, HNB Garhwal University, Srinagar (Garhwal).
4. 91<sup>st</sup> session of Indian Science Congress, January 03-07, 2004, Punjab University, Chandigarh.

5. National seminar on “Bharatvarsh kea aviralvikasmeinjalsansadhnokibhumika” September 26-27, 2007, National Institute of Hydrology, Roorkee.
  6. National Conference on “Greener Aspects of Electrochemistry”, December 07-09, 2007, Jiwaji University, Gwalior (MP).
  7. 44<sup>th</sup> Annual Convention of Chemists, 2007, Indian Chemical Society, December 23-27, 2007, Mahatma Gandhi Institute of applied Science, Jaipur (Raj.).
  8. National Convention of Chemistry Teachers-08, November 08-09, 2008, H.N.B.Garhwal University, Srinagar.
  9. 27<sup>th</sup> Annual Convention of Indian Council of Chemists, December 26<sup>th</sup>-28<sup>th</sup>, 2008, GurukulKangri University, Hardwar (Uttarakhand).
  10. 4<sup>th</sup>Uttarakhand State Congress of Science and Technology, November 10-12, 2009, G.B. Pant University, Uttarakhand.
  11. World Veda Conference, November 20-22, 2009, GurukulKangriVishwavidyalaya, Hardwar.
  12. 2<sup>nd</sup> National Seminar on Recent Trends in Advancement of Mathematical &Physical Sciences, D.N. College, Merrut, 30-31 Jan., 2010
  13. Recent Trends in Chemical Research( RTCR), 4-6 September 2010, Meerut College, Meerut.
  14. National Conference of Green Chemistry (GCMS), 22-23<sup>rd</sup> Jan 2011, MMH (PG) College, Ghaziabad.
  15. International Conference on Chemistry of Phytopotentials: Health, Energy and Environmental Perspectives-2011, (CPHEE-2011) Dayalbagh Educational Institute (Deemed University), Dayalbagh, Agra, India. 4-6 November, **2011**
  16. Word Congress for Man and Nature, (WCMANU-11)GKV,,Hardwar11-13 Nov., 2011.
  17. International Conference on Green Technologies for Environmental RehabilitationGTER2012, GKV, Hardwar, 11-13 Jan. 2012.
- 17. Academic and administrative assignments**
1. Head/ Incharge, Department of Chemistry, Kanya Gurukul Campus, IInd campus of Gurukul Kangri Uni., Hardwar (1998 contd.).



2. Member of registration committee and other committee in Gurukul Shatabdi International Celebration (2000).
3. Member of committee for Assessment and Accreditation of GKV, Hardwar (2000).
4. Member of flying squad in University examinations (1999)& (2010) and 2012.
5. Assistant superintendent, University Entrance Examination for M.Sc. (2001).
6. Assistant superintendent, University examination in 1997, 1999 and 2000, 2010.
7. Actively contributed in the completion of teaching and practical work of B.Sc., Distance Education, GKV, Hardwar for girls.
8. Member Local Organizing Committee, 27<sup>th</sup> Annual Convention of Indian Council of Chemists, 26-28<sup>th</sup> Dec.2008, GurukulKangri University, Hardwar.
9. Member Registration Committee, World Veda Conference, GurukulKangri University, Hardwar (2009).
10. Session-Organizer, World Veda Conference, GurukulKangri University, Hardwar (2009).
11. Member Proctorial Board, GurukulKangriVishwavidyalaya, Hardwar, 2010-2011
12. Member Local Organizing Committee, International Year of Chemistry - 2011, 23 March, 2011, GurukulKangri University, Hardwar.
13. Subject expert in the selection of SRF, ISM project, Rishikul Government Ayurvedic college, Hardwar (2000).
14. Member selection committee of scientist, National Institute of Malaria, Hardwar (2011)
15. Assistant Superintendent of Examination, Dec. 2011.
16. Member organizing committee GTER2012.
17. Incharge, Canteen KGM, Hardwar since 2011.
18. Member executive committee Teacher's Asociation, GKV, Hardwar, 2012-13.
19. Member purchase committee of Furniture and curtains, KGC, Hardwar.2012.

#### **18. Membership of academic bodies**

1. Member of Research Degree Committee in Chemistry, GKV, Hardwar (2000 contd.).
2. Member of Board of Studies, Chemistry, GKV, Hardwar (2000 contd.).
3. Life fellow Indian Association Of Chemistry Teachers
4. Life fellow, Indian Chemical Society, Kolkata

5. Life fellow, Indian Science Congress Association, Kolkata
6. Member Editorial Board, Souvenir, 27<sup>th</sup> Annual Convention of Indian Council of Chemists, 26-28<sup>th</sup> Dec., GurukulKangri University, Hardwar.
7. Member Editorial Board, Int. Journal of Sci. Transactions (2009).
8. Reviewer, American Chemical Society Journal Inorganic Chemistry, 2010.
9. Reviewer, Journal Chemical Engineering and Material Sciences, 2011

#### **19. Cultural activities**

1. Convened Inaugural and valedictory function of 27<sup>th</sup> Annual Convention of Indian Council of Chemists, December 26<sup>th</sup>-28<sup>th</sup>, 2008, GurukulKangri University, Hardwar (Uttarakhand).
2. Organizer mehendi, rangoli and debate etc. competitions at KGM, Hardwar during the session 2009 and 2010.
3. Member of Jury in Rangoli Competition, KGM Hardwar (2009).
4. Member of Jury in races held during annual sports day, KGM Hardwar 2009 & 2010.
5. Member of Jury in Mehendi competition, KGM, Hardwar (2010).
6. Member of Jury in Fancy dress competition at Mahatma Agrasein Jayanti Samaroh, Hardwar (2010).
7. Member of Jury in Oral and poster presentations of IYC-2011, GKV, Hardwar.
8. Judge of rangoli – the Gulal competition, Zion 11, Inter college Cultural festival, 6-9<sup>th</sup> April, 2011 held at College of engineering, Roorkee.
9. Invited as guest at Vaishya Perichaya Sammelan – 2011, Hardwar.
10. Organizer and Member of Jury, Mehndi Competition, KGM, Hardwar, 2011.