Ashish Kumar (Dr.), M.Sc., Ph.D.
C/o Late Shri H.C. Belwal, H. No. 19-A,
J.K. Puram, Block-A, Chhoti Mukhani,
Haldwani – 263139, Uttarakhand, India
E-mail: ashishkumar.iict@gmail.com
Mob : +91-7906647311, 8008506326

Academic Qualifications:

2010–2015 **Ph.D. (Chemistry)**
Institution : CSIR- Indian Institute of Chemical Technology (IICT) / Jawaharlal Nehru Technological University, Hyderabad, India
Department: Inorganic & Physical Chemistry Division
Thesis Title: Synthesis, characterization and catalytic properties of supported nano gold catalysts
Supervisor: Dr. K.V.R. Chary, Scientist-G & Professor AcSIR
Awarded: May 02, 2015

2001–2003 **M.Sc. (Chemistry)** *with specialization Analytical Chemistry*
University: Dr. Bhim Rao Ambedkar University, Agra, India
College: St. John's College, Agra
Department: Department of Chemistry
Division: 1st (60.50%)

1998–2001 **B.Sc.** *with* ***Chemistry****, Zoology and Botany*
University: Dr. Bhim Rao Ambedkar University, Agra, India
College: Shri Chitragupt Degree College, Mainpuri
Division: 1st (70.52%)

1996–1998 **Intermediate (10+2)**
Boar : U.P. Board Allahabad
Subjects: Hindi, English, Physics, **Chemistry**, Biology
College: Govt. Inter College, Mainpuri
Division: 1st (62%)

1994–1996 **High School (10th)**
Board: U.P. Board Allahabad
Subjects: Hindi, English, Math-2, Science-2,Social Science, Biology
College: Govt. Inter College, Mainpuri
Division: 2nd (56.50%)

2018-2019 **P.G. diploma in Yoga**
University: Kumaun University, Nainital, India
College: Radhey Hari Govt. P.G. College, Kashipur, U.S. Nagar, Uttarakhand
Division: 1st (70.25%)

Awards, Fellowships and Memberships:

Awards
- **Best Paper Award - 2022** in DRDO Sponsored 2nd National conference on *"Advanced Technologies and Environmental Safety* (ATES-2022)*"* held at IFTM University, Lodhipur Rajput Moradabad, U.P., India, July 23-24, **2022** (Page No. 01)

Fellowships
- Qualified CSIR-UGC-NET-JRF (Chemical Sciences) in June, 2008
- Qualified CSIR-UGC-NET (Chemical Sciences) in June, 2007 and June, 2006
- Qualified GATE-2009 in Chemical Sciences with AIR: 966, Score: 351
- Awarded Senior Research Fellowship (SRF) 2011-2014 and Junior Research Fellowship (JRF) 2009-2011 from University Grants Commission (UGC), New Delhi, for doctoral study.

Memberships
- Life Member of Indian Science Congress.
- Life Member of Indian Council of Chemists.
- Life Member of Green Chemistry - Royal Society of Chemistry.

Professional Experience (Teaching / Industrial / Research): Total – 16 years

October, 2018 – till date	**Assistant Professor (*Guest*)** • *Institute:* Hemwati Nandan Bahuguna Government Post Graduate College, Khatima – 262308 Uttarakhand, India • *Department:* Chemistry • *Nature of work:* Teaching U.G. (B.Sc.) and P.G. (M.Sc.) students and research active in the area of ***Heterogeneous Catalysis and Nano-structure Materials*** with their industrial application in thermal and photo-catalytically
August, 2015 – December, 2017	**Lecturer** • *Institute:* Thapar Institute of Engineering and Technology (Deemed to be University), Patiala-147001, Punjab • *Department:* School of Chemistry and Biochemistry • *Nature of work:* Teaching Under-Graduate and Post-Graduate students and responsible for carrying out innovative and insightful research in the area of ***Heterogeneous Catalysis and Nano-structure Materials*** with their industrial application in thermal and photo-catalytically processes.
May, 2015 – August, 2015	**Post-doctoral Fellow** • *Institution:* Indian Institute of Technology, Delhi • *Department:* Department of Chemical Engineering • *Nature of work:* Development of electrochemical reactor and solid electrolyte for efficient electrochemical conversion of CO_2 into value added products and synthesis of Graphene for energy application.
July, 2009 – May, 2015	**Research Fellow** • *Institution:* CSIR- Indian Institute of Chemical Technology, Hyderabad, India • *Department :* Inorganic & Physical Chemistry Division
July, 2007 – June, 2009	**Analyst 'A'** • *Institution:* Shriram Institute for Industrial Research (SRI), 19 University Road, Delhi, India • *Nature of work:* Testing and analysis of water & effluent, COD, BOD, soil, Ambient air quality monitoring, Petroleum products, Chemicals, Analysis of pollutants. Analytical chemistry of waste, Hazardous waste, Lab sampling.
October, 2004 – June, 2007	**Research Associate** • *Company:* INNODATA ISOGEN Private India Limited, NOIDA (U.P.), India • *Nature of work:* Indexing and abstraction of articles from the field of chemistry for Elsevier MDL (Molecular Designs Limited) in the Beilstein Database.

Supervised M.Sc. Dissertation Thesis (Completed: 02)

☞ **Mandeep Kaur -** *Synthesis and Characterization of Mesoporous SnO_2 Photocatalyst for Degradation of Dye and Volatile Organic Compound*, completed – July, 2016.

☞ **Kamaljeet Kaur -** *Synthesis and Characterization of Magnetite Nanocomposites for Photocatalytic Reactions*, completed – July, 2017.

Areas of Research Interest:

- Heterogeneous Catalysis
- Nanomaterials, Nanotechnology and Advanced Mesoporous Materials
- Composites of Graphene, Graphene Oxide and Carbon Nano-tubes
- Photocatalysis
- Fixed bed catalysis process
- Metal Catalysed Organic Synthesis
- Green Chemistry

Professional Activities: Administrative Responsibilities

Admission Committee	• Assisted in admission of B.Sc. and M.Sc. (chemistry) for academic session: 2018-2019, 2019-2020, 2020-2021 and 2021-2022 at H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Election Committee	• Assisted in college election committee for academic year 2018-2019 and 2019-2020 at H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Sport Committee	• Assisted in organization committee for Annual Sport Day on 27-28 February, 2019; 28-29 February, 2020; 27-28 February, 2021 and 16-17 April, 2022 at H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Internal Examiner	• Assisted in conducting chemistry practical examination of B.Sc. and M.Sc. as internal examiner (academic session: 2018-2019, 2019-2020, 2020-2021 and 2021-2022) at H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Convenor	• To organize National Level e- Quiz Contest on "world environmental day (05, June 2022)" held on June 05/06/2022 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize a one day National Virtual Workshop on "Lab Safety Aspect and Environmental Health Protection - 2021 (**LSA-EHP-2021**)" held on March 26, 2021 at e-platform in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize a one day National Webinar on "Role of Science for Sustainable Rural Development of Uttarakhand - 2021 (**RSS-RD-2021**)" held on February 28, 2021 (National Science Day) at e-platform in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize a two days international virtual conference on "Modern Instrumental and Characterization Techniques in Applied Sciences-2020 (**MICTAS-2020**)" held on July 5-6, 2020 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize National Level e- Quiz Contest on "**Know the Physics around you-2020**" held on June 15-28, 2020 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize National Level e- Quiz Contest on "**Chemistry in Everyday Life-2020**" held on June 01-14, 2020 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand. • To organize National Level e- Quiz Contest on "**Corona Virus Disease (COVID-19) Chemistry Awareness**" held on May 15-31, 2020 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Organizing Secretary	• To organize a two days national virtual conference on "Recent Advances in Analytical Techniques - 2020 (**RAAT-2020**)" held on August 16-17, 2020 at *e-platform* in H.N.B. Govt. P.G. College, Khatima, U.S. Nagar, Uttarakhand.
Co-organizing Secretary	• To organize a one day National Conference on "Role of Innovative Technology for Rural Development (RITRD-2022)" held on February 26, 2022 at MIET Kumaon, Haldwani, Uttarakhand.
Advisory Committee	• National Conference on *Recent Advances and Future Perspectives in Chemical Sciences: An Interdisciplinary Approach*, July 26-27, 2019 Organized By Department of Applied Sciences Dr. K.N. Modi University INS-1, RIICO Industrial Area, Phase-II Newai-304021, Rajasthan

Organization Committee

- Assisted in organization of National Science Day in 2016 and 2017 at School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Assisted in preparation of National Assessment and Accreditation Council (NAAC) reports of School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Assisted in preparation of Annual Report of SCBC 2015-2016, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Assisted in preparation of Ph.D. entrance exam and grading at School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Assisted in the preparation of Self-Assessment Review (SAR) Report for Trinity College Dublin (TCD) at School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Assisted in Advertisement of M.Sc. Chemistry Program and other departments at School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.
- Responsible for the coordination of production of conference content (e.g., Abstracts, Editorial, Booklets, Certificates etc.) and served as the point of contact for all explore submission-related inquiries before and after the conference in 21st National Symposium on Catalysis-2013 (CATSYMP-21), CSIR-IICT, Hyderabad, 11-13 February, 2013.

Professional development programmes (Orientation, Refresher, Short Term Course, and Faculty Development Programme)

Faculty Development Program (FDP)

Completed Faculty Development Program-FDP during **May 04, 2017** at School of Chemistry and Biochemistry, Thapar Institute of Engineering and Technology (Deemed to be University), Patiala.

(a) Classroom Communication
(b) Emotional Intelligence during Change
(c) Patent & Guide to Patent Process
(d) How to Write a Research Proposal for Funding

Short Term Courses

Attended the short term course on "*Electrochemical Technologies in Hydrogen Production and Utilization for Electrical Energy"* under the sponsorship of Technical Education Quality Improvement Programme–II (TEQUIP-II), held at Department of Chemical Engineering, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, October 8-9, **2015**.

List of Publications: (Total Published: 23 SCI)

Published

***Publications from H.N.B. Govt. P.G. College, Khatima (U.S. Nagar), Uttarakhand,* (2019-2022) : Published: 09 SCI**

2022

1. Rajeev K. Gautam* and **Ashish Kumar** "A review of bipolar plate materials and flow field designs in the all-vanadium redox flow battery" *Journal of Energy Storage* (2022) Volume 48 pp 104003 (Impact Factor : 6.583 ; ISSN : 2352-152X; h-index : 42) DOI: https://doi.org/10.1016/j.est.2022.104003

2021

2. Ashish Kumar*, Venkataraman Vishwanathan "The emergence of carbon nano-onions as electrode material in photovoltaic cells" *SREYAS International Journal of Scientists and Technocrats,* (2021) Volume 5(3) pp. 1-8 (Impact Factor : 0.51 **;** ISSN**:** 2456-8783)
3. Ashish Kumar*, Venkataraman Vishwanathan, Mamta Belwal and Dhaneswar Das "Catalytic Oxidation of Benzyl Alcohol over Supported Gold Nanocatalysts" *Engineering & Technology Review* (2021) Volume 2(1) pp 31-37 (Impact Factor : 0.53 ; ISSN 2693-115X) DOI: https://doi.org/10.47285/etr.v2i1.86

4. Sachin Kumar, Nishant Thakur, Km Abida, **Ashish Kumar**, Raj Kumar Gupta, Amjad Ali* "Transesterification of triglyceride over Ni impregnated Zn/CaO nanocatalysts" *Materials Today: Proceedings, Elsevier Publisher* (2021) Volume 36 pp A1–A8
(Impact Factor : 1.24; ISSN 2214-7853). DOI: https://doi.org/10.1016/j.matpr.2020.03.215

2020

5. **Ashish Kumar** and Venkataraman Vishwanathan* "Photocatalytic decomposition of methylene blue present in wastewater using nano-sized titanium dioxide particles" *Journal of Nanosciences Research & Reports*, (2020) Volume 2(3), pp.1-5. (Impact Factor : 0.83 ; ISSN: 2754-4966)
6. **Ashish Kumar***, Mamta Belwal, Varun Mohan, Radha Raman Maurya,Venkataraman Vishwanathan "Catalytic vapor phase oxidation of glycerol to glyceric acid over activated carbon supported gold nanocatalysts" *International Journal of Nanoscience, (World Scientific)* (2020) Volume 19, No. 06, 2050007 (Impact Factor : 0.11; ISSN (print): 0219-581X (online): 1793-5350) DOI: https://doi.org/10.1142/S0219581X20500076
7. Ashish Kumar*, Mamta Belwal and Venkataraman Vishwanathan* "Application of instrumental methods and techniques for characterization of solid catalysts" *SREYAS International Journal of Scientists and Technocrats*, (2020) Vol. 4(1) pp. 17-33 (Impact Factor : 0.51 ; ISSN**:** 2456-8783)
8. Mandeep Kaur, Mamta Belwal, Aakriti Sharma, **Ashish Kumar*** and Venkataraman Vishwanathan **"**Efficient removal of organic pollutants in wastewater using tin oxide nanospheres under photo irradiation" *Journal of Applied Material Science & Engineering Research* (2020) Volume 4, Issue 3, pp 68-73 (Impact Factor : 0.11; ISSN: 2689-1204)

2019

9. **Ashish Kumar***, Mamta Belwal, Radha Raman Maurya, Varun Mohan, Venkataraman Vishwanathan "Heterogeneous catalytic reduction of anthropogenic pollutant, 4-nitrophenol by Au/AC nanocatalysts" *Materials Science for Energy Technologies, Elsevier Publisher* (2019) Volume 2, pp 526–531
(Impact Factor : 1.210 **;** ISSN : 2589-2991) DOI:https://doi.org/10.1016/j.mset.2019.05.007

***Publications from Thapar University, Patiala* (2016-2018) : Published: 08 SCI**

2018

10. **Ashish Kumar***, Rajeev K. Gautam and Mamta Belwal "Synthesis and Characterization of Au/γ-Al_2O_3 Nanocatalysts for Vapor-Phase Selective Oxidation of Benzyl Alcohol under Aerobic Condition" *Current Catalysis, Bentham Science* (2018) Volume 7, pp 35-42 (Impact Factor: 2.621; ISSN 2211-5447 (Print)) DOI: https://doi.org/10.2174/2211544706666170811101508
11. Manu Sharma, **Ashish Kumar***, Rajeev K. Gautam, and Mamta Belwal "Synthesis and Characterization of ZnO–CeO_2 Nanocomposite with Enhanced UV-Light-Driven Photocatalytic Dye Degradation of Rhodamine-B" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2018) Volume 18, pp 3532–3535 (Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105) DOI: https://doi.org/10.1166/jnn.2018.14675

2017

12. Akansha Mehta, Manu Sharma, **Ashish Kumar*** and Soumen Basu "Effect of Au Content on the Enhanced Photocatalytic Efficiency of Mesoporous Au/TiO_2 Nanocomposites in UV and Sunlight" *Gold Bulletin, Springer* (2017) Volume 50, pp 33–41 (Impact Factor : 1.601 ISSN : 2364-821X (Print) 2190-7579 (web) ; h-index : 59) DOI : https://doi.org/10.1007/s13404-016-0191-7
13. Ashish Kumar*, Manu Sharma, Rajeev K. Gautam, Pooja Agarwala and Soumen Basu "Synthesis of Mesoporous Cerium Oxide (CeO_2) Nanoparticles and Effect of Cerium Precursors with High Catalytic Activity for Transamidation Reaction under Solvent-Free Conditions" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2017) Volume 17, pp 4983–4988 (Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105) DOI: https://doi.org/10.1166/jnn.2017.13744
14. Manpreet Kaur Aulakh, Nishi Arora, **Ashish Kumar**, Amjad Ali and Bonamali Pal* "Effect of Different Shapes of TiO_2 Nanoparticles on the Catalytic Photodegradation of Salicylic Acid under UV Light" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2017) Volume 17, pp 5303-5309 (Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105) DOI: https://doi.org/10.1166/jnn.2017.13851

15. Ginjupalli Srinivasa Rao, **Ashish Kumar**, N. Nagaraju, P. Bhanuchander and Komandur V.R. Chary* "Preparation and characterization of SBA-15-supported vanadia catalysts for ammoxidation reaction" *Advanced Porous Materials, American Scientific Publishers* (2017) Volume 5, pp 76–85
(Impact Factor : 1.318 ; ISSN: 2327-3941 (Print); EISSN: 2327-395X (Online) ; ; h-index : 105)
DOI: https://doi.org/10.1166/apm.2017.1122

2016

16. Akansha Mehta, Manu Sharma, **Ashish Kumar*** and Soumen Basu "Gold Nanoparticles Grafted Mesoporous Silica: A Highly Efficient and Recyclable Heterogeneous Catalyst for Reduction of 4-Nitrophenol" *Nano (World Scientific)* (2016) Volume 11, No. 9 1650104
(Impact Factor : 1.556 ; ISSN: 1793-2920 (print); 1793-7094 (web) ; h-index : 27)
DOI:https://doi.org/10.1142/S1793292016501046
17. **Ashish Kumar,** V. Pavan Kumar, A. Srikanth, V. Vishwanathan and K.V.R. Chary* "Vapor phase oxidation of benzyl alcohol over nano Au/SBA-15 catalysts: Effect of preparation methods" *Catalysis Letters, Springer* (2016) Volume 146, pp 35-46
(Impact Factor : 3.186 ; ISSN : 1011-372X (print) 1572-879X (web) ; h-index : 121)
DOI: https://doi.org/10.1007/s10562-015-1656-7

Publications from others **(2016-2015) : Published: 02 SCI**

2015

18. V. Pavan Kumar, S.S. Priya, Y. Harikrishna, **Ashish Kumar** and K.V.R. Chary* "Catalytic Functionalities of Nano Ruthenium/γ-Al_2O_3 Catalysts for the Vapour Phase Hydrogenolysis of Glycerol" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2016) Volume 16, pp 1952-1960
(Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105)
DOI: https://doi.org/10.1166/jnn.2016.10715
19. V. Pavan Kumar, **Ashish Kumar**, G.S. Rao and K.V.R. Chary* "Vapor-phase hydrogenolysis of glycerol over nanostructured Ru/MCM-41 catalysts" *Catalysis Today, Elsevier Publisher* (2015); Volume 250, pp 226–238 (Impact Factor : 6.766 ; ISSN: 0920-5861 ; h-index : 211)
DOI : https://doi.org/10.1016/j.cattod.2014.03.036

Publications from Ph.D. **(2015-2014) : Published: 04 SCI**

20. **Ashish Kumar**, B. Sreedhar and K.V.R. Chary* "Highly dispersed gold nanoparticles supported on SBA-15 for vapor phase aerobic oxidation of benzyl alcohol" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2015) Volume 15, Number 2, pp 1714-1724
(Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105)
DOI: https://doi.org/10.1166/jnn.2015.9022
21. **Ashish Kumar**, V. Pavan Kumar, V. Vishwanathan and K.V.R. Chary* "Influence of preparation methods of nano Au/MCM-41 catalysts for vapor phase oxidation of benzyl alcohol" *Journal of Nanoscience and Nanotechnology, American Scientific Publishers* (2015) Volume 15, Number 12, pp 9944-9953 (Impact Factor : 1.354 ; ISSN: 1533-4880 (Print) 1533-4899 (web) ; h-index : 105).
DOI: https://doi.org/10.1166/jnn.2015.10510
22. **Ashish Kumar**, V. Pavan Kumar, V. Vishwanathan and K.V.R. Chary* "Synthesis, characterization and reactivity of Au/MCM-41 catalysts prepared by homogeneous deposition-precipitation (HDP) method for vapor phase oxidation of benzyl alcohol" *Materials Research Bulletin, Elsevier Publisher* (2015) Volume 61, pp 105-112 (Impact Factor:4.641 ; ISSN:0025-5408 ; h-index : 110)
DOI: https://doi.org/10.1016/j.materresbull.2014.10.013

2014

23. **Ashish Kumar**, V. Pavan Kumar, B. Putra Kumar, V. Vishwanathan and K.V.R. Chary* "Vapor phase oxidation of benzyl alcohol over gold nanoparticles supported on mesoporous TiO_2" *Catalysis Letters, Springer* (2014) Volume 144, Issue 8, pp 1450-1459
(Impact Factor : 3.186 ; ISSN : 1011-372X (print) 1572-879X (web) ; h-index : 121)
DOI: https://doi.org/10.1007/s10562-014-1285-6

Short Term Courses / Workshops / Conferences Attended:

Workshop

1. Indo-EU Workshop on "*Electrochemical Technologies"* held at Chemical Engineering Department, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, March 2, **2017**.
2. 17th National Workshop on "*Challenges in Catalysis Science and Technology*" held at CSIR-Indian Institute of Chemical Technology, Catalysis Society of India (CSI), June 23-25, **2016** (Poster–56, Page No. - 87).
3. International Workshop on "*Chemistry for a Sustainable Future*" held at Jaipur, Rajasthan, sponsored by the Royal Society of Chemistry London (North India Section), December 10-12, **2012**.
4. International workshop on "*Nanotechnology and Advanced Functional Materials"* held at National chemical Laboratory, Pune, July 09-11, **2009**.
5. Workshop on "*Green Chemistry Education"* held at Department of Chemistry, University of Delhi, March 10, **2007**.

Webinar

1. National webinar on *"COVID-19: Impact on Environment and Social Change"* organized by Pranahi, the Eco Club of BCAS held on 05th June, **2020** through Google Meet.
2. National webinar on "*Challenges and Opportunities in Covid-19 Scenario*" organized by Department of Mathematics, Sri Jai Narain Misra P.G. College (KKC), Lucknow on 05th June, **2020**.
3. Webinar on topic "*Language Technology and Role of Literature Departments in India*" organized by ARSD College, Dhaula Kuan, New Delhi held on 02nd June, **2020.**
4. Participated in the online "*Chemistry Quiz"* competition organized by Department of Chemistry, Ghulam Nabi Azad Arts, Commerce & Science College, Barshitakli in June, **2020**.
5. National webinar on *"Preventative healthcare diagnostic platforms based on Micro-Nanotechnologies"* organized by Department of Science, Lady Irwin College on 30th May, **2020**.
6. Webinar on topic *"Care for Earth: Thy Survival"* organized by ARSD College, Dhaula Kuan held on 30th May, **2020**.
7. National webinar on *"Impact of COVID-19 Pandemic Indian Education System"* organized by Bajaj College of Management & Technology, Gadarpur, Udham Singh Nagar (Uttarakhand) on 27th May, **2020**.
8. International webinar on *"Contribution of Language, Literature and Genres in Covid-19 Public Awareness Campaign and Dimensional Changes in Social Science"* organized by Government Raza P.G. College, Rampur on 26th May, **2020**.
9. National webinar on *"Ecological Revival during Pandemic"* organised by Department of Chemistry of BCAS on 21st May **2020** through Google Meet.
10. Guest Lecture on *"Role of Material Science in Protection of Environment against Corona Infection"* organised by IFTM University, Moradabad, U.P. on 20th May, **2020**.

Conference

1. DRDO Sponsored 2nd National conference on *"Advanced Technologies and Environmental Safety* (ATES-2022)*"* held at IFTM University, Lodhipur Rajput Moradabad, U.P., India, July 23-24, **2022** (Page No. 01)
2. National conference on "*Modern Instrumental and Characterization Techniques in Biotechnology & Applied Sciences-2020 (**MICTBAS-2021)***" held at MIET Kumaon Haldwani Uttarakhand, September 3-4, **2021**.
3. National conference on *"Advanced Technologies and Environmental Safety* (ATES-2019)*"* held at IFTM University, Lodhipur Rajput Moradabad, U.P., India, March 9-10, **2019** (Page No.33, 51)
4. National Seminar on *"Technology for Environmental Sustainability, Socio-Economic Responsibility and Associated Entrepreneurial Opportunities in 21st Century*" held at Seminar Hall, Sri Aurobindo College, Department of Chemistry, Malviya Nagar, New Delhi-110017, March 8-9, **2019** (Poster–PP05, Page No.91).
5. National Seminar on *"Emerging Trends and Future Challenges in Science* (ETFCS-2019)*"* held at Department of Chemistry, Shri Guru Ram (P.G.) College, Dehradun (Uttarakhand), February 27-28, **2019** (Page No. 61, 68).
6. International Conference on *"Recent Trends in Environment and Natural Sciences* (ICRTENS-2019)*"* held at Government Science College, Sabalpura, Sikar, Rajasthan, India, February 12-13, **2019** (Oral Presentation) (ISBN 978-93-5351-064-0) (Page No. 78).

7. National Conference on *"Chemistry for Human Health and Environment (CHHE)*" held at Conference Center, University of Delhi, Delhi-110007, December 15-16, **2018** (Poster–PP 22, Page No.35)**.**
8. International Conference on *"Catalysis Science, Engineering & Technology* (ICSET 2018)" hosted in Stockholm, Sweden, November 04-07, **2018** (Oral Presentation).
9. 1st Biennial Conference on *"Thematic Conference in Chemical Sciences* (TC_2S) *–2017: Sustainable Chemistry"* held at Department of Chemistry, Indian Institute of Technology Ropar, May 15-16, **2017** (Poster–PA-60)
10. *Nano India 2017 & DST Nano Mission Review Meeting* held at Indian Institute of Technology Delhi, New Delhi, March 15-16, **2017** (Poster–136).
11. Fourth International Conference on *Nanostructured Materials and Nanocomposites* (ICNM-2017) held at Mahatma Gandhi University, Kottayam, Kerala, India, February 10-12, **2017**.
12. 9th National Seminar on "*New Paradigm in Chemical Sciences: Synthetic and Analytical Perspectives 2017* (NPICS: SAP2017)" held at Department of Chemistry, Punjabi University, Patiala (Punjab), February 09-10, **2017** (Poster–PP01, Page No.35).
13. 3rd International Conference on "*Nanotechnology for Better Living, 2016"* (Nanotech - IITK - NITS - Better Living Main)" held at Centre for Nanoscience Department of Physics National Institute of Technology Srinagar, India, May 25-29, **2016** (Oral-512). Vol. 3, No. 1, p. 266, doi:10.3850/978-981-09-7519-7nbl16-rps-266.
14. International Conference On "*Frontiers at the Chemistry - Allied Sciences Interface* (FCASI)" held at Centre of Advanced Study, Department of Chemistry, University of Rajasthan, Jaipur, Rajasthan (India), April 25-26, **2016** (PS-36).
15. 18th CRSI National Symposium in Chemistry (CRSI-2016) held at INST Mohali and Punjab University, February 5-7, **2016**.
16. Indian Council of Chemists (ICC), XXXIII Annual Conference held at Department of applied Chemistry, Indian School of Mines Dhanbad, India, December 15-17, **2014**.
17. International Conference on "*Nano Science & Engineering Applications* (ICONSEA-2014)" held at JNTU Hyderabad, India, June 26-28, **2014** (Oral Presentation).
18. International Conference on "*New Dimension in Chemistry & Chemical Technologies-Applications in Pharma Industry* (NDCT-2014)" held at Centre for Chemical Sciences & Technology, JNTU Hyderabad, India, June 23-25, **2014** (Poster– CHA–113, Page No.139).
19. International Conference on "*Nano, Bio & Material Sciences* (ICONBMS-2014)" held at Department of Physics, Nizam College, Osmania University, Hyderabad, January 8-10, **2014**.
20. Symposium on "*Modern trends in inorganic chemistry* – XV (MTIC -XV)" held at Department in Chemistry, IIT Roorkee, from December 13-16, **2013**
21. 3rd International Conference on *"Advanced Nanomaterials and Nanotechnology* (ICANN-2013)" held at Centre for Nanotechnology, IIT- Guwahati, India, December 1-3, **2013** (Poster– 035, Page No.102).
22. 7th International Symposium on "*Feedstock Recycling of Polymeric Materials* (7th ISFR 2013)" held at New Delhi, India, October 23-26, **2013** (Poster–PBC-06, Page No.79).
23. International Conference on "*Advanced Nanomaterials & Emerging Engineering Technologies* (ICANMEET-2013)" held at Sathyabama University, Chennai, Tamil Nadu, India, July 24-26, **2013**.
24. *NANO INDIA 2013* held at CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Pappanamcode, Industrial Estate PO, Thiruvananthapuram, Kerala, February 19-20, **2013.**
25. 21st National Symposium on "*Catalysis-2013* (CATSYMP-21)" held at CSIR-IICT, Hyderabad, February 11-13, **2013** (Poster – 074; Page No. 122).
26. 20th National Symposium on "*Catalysis for Energy Conversion and Conservation of Environment"* held at NCCR, Indian Institute of Technology Madras, Chennai, December 19-22, **2010** (Poster –47, Page No. 105).
27. DAE-BRNS 3rd International Symposium on "*Materials Chemistry* (ISMC-2010)" held at Bhabha Atomic Research Centre, Mumbai, December 7-11, **2010**.
28. 12th CRSI-National Symposium in Chemistry (NSC-12) held at CSIR-IICT, Hyderabad, February 5-7, **2010** (Poster–355, Page No. 389).
29. 92nd Indian science Congress at Nirma University of Science & Technology, Ahmedabad, January 3-7, **2005.**

Computer Skills:

Software Packages	MS-Office, Adobe-Photoshop, Chem-Office, Chem-Draw 8.5, Origin 6 & 8.

Language Efficiency:

English and Hindi	Read, Write, Speak

Personal Details:

Father's Name	Shri Radhe Shyam 'Anish'
Date of Birth	2nd July, 1982
Nationality	Indian
Gender	Male
Marital Status	Married
Corresponding/ Permanent Address	Dr. Ashish Kumar, C/o Late Shri H.C. Belwal, H. No. 19-A, J.K. Puram, Block-A, Chhoti Mukhani, Haldwani – 263139, Uttarakhand, India

References:

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Teaching Assignments

Course taught in UG and PG level

PG courses (M.Sc. All semesters)

- **2018-2022 ODD/EVEN SEM** *(from Oct, 2018 to July, 2022)*
- **2017-2018 EVENSEM** *(from Jan, 2018 to June, 2018) : Lectures*
  - Industrial and Green Chemistry (Course code: PCY208)
- **2017-2018 ODDSEM** *(from July, 2017 to Dec, 2017) : Lectures*
  - Catalysis and Reagents (Course code: PCY307)
- **2016-2017 EVENSEM** *(from Jan, 2017 to June, 2017) : Lectures*
  - Synthetic and Natural Polymers (Course code: PCY212)
- **2016-2017 ODDSEM** *(from July, 2016 to Dec, 2016) : Lectures and Practical Lab*
  - Stereochemistry and Photochemistry (Course code: PCY109)
  - Catalysis and Reagents (Course code: PCY307);
  - Inorganic Synthesis Lab (Course code: PCY305)
- **2015-2016 EVENSEM** *(from Jan, 2016 to June, 2016) : Lectures*
  - Industrial and Green Chemistry (Course code: PCY208)
  - Synthetic and Natural Polymers (Course code: PCY212)
- **2015-2016 ODDSEM** *(from July, 2015 to Dec, 2015) : Lectures*
  - Biopolymer and Protein Chemistry (Course code: PCY323)

UG Course (B.Sc./B.E./B.Tech. 1st year)

- **2018-2022 ODD/EVEN SEM – B.Sc.** all semesters *(from Oct, 2018 to July, 2022)*
- Subject (Course Code) - Applied Chemistry (UCB008) – Lecture / Tutorial classes / Practical lab (*from July, 2015 to March, 2018*)

Special Classes for CSIR-UGC-NET/JRF & GATE examinations

- Assisted M.Sc. / Ph.D. students for preparing the CSIR-UGC-NET/JRF & GATE examination in Chemical Sciences.

☞ Summary of Present Research Work

Synthesis of mesoporous SnO_2 nanoparticles (SnO_2 NPs), nanostructure Fe_3O_4 and supported metal/non-metal (Au/Fe_3O_4, SiO_2/Fe_3O_4, CeO_2/Fe_3O_4, AC/Fe_3O_4) and Au/SiO_2, $Au/\gamma\text{-}Al_2O_3$, Au/AC, Au/TiO_2 and there were confirmed by various physico-chemical characterization techniques such as XRD, TEM, SEM, XPS, FT-IR, and BET surface area, UV–visible spectroscopy. These catalysts and photo-catalysts used various industrial applications like degradation of dyes, pesticide and volatile organic compounds (VOCs).

☞ Summary of Postdoctoral Research Work

In my post-doctoral work, I have synthesized a bimetal electro-catalyst is synthesized by Co and Ag metals to investigate the effect of the bimetal over gas phase CO_2 electrochemical reduction. Electrochemical reduction of carbon dioxide to fuel is one of the most promising and challenging technique but requires significant energy input. Various metals, metal oxides, and metal complexes have been studied to increase the Faradic efficiency, selectivity, and to reduce the energy input for the generation of hydrocarbons. However, bimetallic electro-catalysts are hardly evaluated for the electrochemical reduction of CO_2 in-spite of the proven synergetic effect of bimetals for various chemical reactions. Therefore, the present study investigates the role of bimetallic electro-catalyst for the CO_2 electrochemical reduction. It is found that though the chosen metals are individually selective for the CO formation but the combination results in CH_4 and C_2H_4 formation along with CO. The maximum Faradic efficiency for CH_4 is 19.5% at 2V using Co-Ag.

☞ Summary of Doctoral Research work

Catalyzed oxidation of aromatic hydrocarbons with molecular oxygen has been studied for several decades. For example, toluene can be converted into oxidation products such as benzyl alcohol, benzaldehyde, benzoic acid and benzyl benzoate. At present, the principal industrial production of benzoic acid via the oxidation of toluene involves the use of homogeneous cobalt catalysts in an air pressurized aqueous acetic acid mixture in the presence of Mn ions. However, the use of solvent causes difficulties in the separation of catalysts and products, equipment corrosion, and due to the environmental hazards associated with the use of liquid acids as solvent. Developing solvent free benzyl alcohol oxidation having great activity has attracted special attention as a promising environmentally friendly reaction.

In my Ph.D. work, I have synthesized nano gold catalysts supported on various supports like mesoporous materials (SBA-15, MCM-41, TiO_2) and commercial supports (activated carbon, SiO_2 and $\gamma\text{-}Al_2O_3$). The catalysts were characterised for their physico-chemical properties using X-ray diffraction (XRD), transmission electron microscopy (TEM), BET surface area, pore size distribution (PSD), CO-chemisorption, temperature programmed reduction (TPR)/desorption (TPD) and X-ray photoelectron spectroscopy (XPS) techniques. The catalytic activity and stability of the various supported nano gold catalysts are investigated during the vapor phase aerobic oxidation of benzyl alcohol to benzaldehyde and investigated the following parameters : (i) the quantitative influence of particle composition; (ii) the role of particle size; (iii) the influence of the supports; (iv) influence of metal loading; (v) correlation of catalytic functionalities with surface structural properties; (vi) deactivation of the catalysts during the reaction.