

Curriculum Vitae



Name: Dr. Irshad Ahmad Wani
Designation: Assistant Professor
Office Address: Post graduate Department of Chemistry, Govt. Degree College Anantnag, University of Kashmir, Jammu and Kashmir, India-92232.
Date of Birth: 04-05-1983
Marital Status: Married
Nationality: Indian
Home Address: R/O: Badroo, Yaripora, Kulgam, J & K-192232, INDIA Phone: +91-8899602827
Ph. No: 8899602827/9906635459
Email: irshadwani101@gmail.com / irshadwani@live.com/
ResearcherID: 1253-2015
ORCID: <http://orcid.org/0000-0001-8674-9159>
Scitation Index: <https://scholar.google.co.in/citations?user=R86LEdwAAAAJ&hl=en>

Academic Qualifications:

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- | | |
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| 2012 | Ph.D. (Nanochemistry)
Jamia Millia Islamia, New Delhi, India-25
Title of the Ph.D Thesis
Synthesis, Characterization and Properties of Metal (Gold and Silver) Nanoparticles and their Nanosized Oxides |
| 2007 | M.Sc. in Chemistry
Subjects: Physical, Organic, In-Organic & Materials Chemistry
Specialization: Physical Chemistry |
| 2004 | B.Sc (General Sciences)
Univerity of Kashmir, Hazratbal Srinagar, Jammu and Kashmir, India. |
| 2001 | 12th (With Science Subjects)
Jammu and Kashmir State Borard of School Education(JKBOSE). |

Teaching experience:

- **Assistant Professor-Chemistry:** 31 Aug 2017 to till date
- **Lecturer-chemistry:** 03 May-2010 to 30 Aug-2017

Academic Awards/Achievements:

- ICTSGS Services Award in First International Conference on Technologies on Smart Green Scientific Societies held on Nov. 26 & 27 2021.
- Achieved a Trusted Reviewer Status from IOP publisher in recognition of an exceptionally high level of peer review competency, (2021).
- Topical Editor; S-Cube: Sustainable Solutions and Society (SPAST) Journal (2021-23).
- Qualified Graduate Aptitude Test (GAT), 94 percentile, 2010.
- Meritorious scholarship for getting 2nd position in M.Sc.-Chemistry, JMI, New Delhi.
- Bagged 2nd position in a quiz contest organized by department of Chemistry, JMI in the year 2007.

List of Publications

1. "Recent Advances in Gold Nanoparticle Based Sensors: Opportunities & Grand Challenges" Irshad A. Wani, Ajit Khosla, Tokeer Ahmad, ECS Sensor Plus, Manuscript ID ECSSP-100192.R3.
2. Magnetic, Electrical and Humidity Sensing Properties of Multiferroic GdCrO_3 Nanoparticles Fabricated by Metal Organic Precursor Method, Irfan H. Lone, Irshad A. Wani, Arvind Kumar Jain, Tokeer Ahmad, 7 (35), e202202547, 2022.
3. Metal and Metal Oxide Nanoparticles/Nanocomposites as Electrochemical Biosensors for Cancer Detection, Sara Eskandarinezhad, Irshad Ahmad Wani, Mohammad Nourollahileilan, Ajit Khosla and Tokeer Ahmad, Journal of Electrochemical Society, 169 047504, 2022.
4. Nanobiosensors for early detection of neurodegenerative disease, Paria Fazlali, Aida Mahdian, Mohammad Sina Soheilifar, Seyed Mojtaba Amininasab, Parisa Shafiee, Irshad Ahmad Wani, Ali MA Abdul Amir AL-Mokaram, Journal of Composites and Compounds, 4 (10), 24-26, 2022.
5. Recent advances in anticancer and antimicrobial activity of silver nanoparticles synthesized using phytochemicals and organic polymers, Irshad Ahmad Wani, Tokeer Ahmad, Ajit Khosla, Nanotechnology, 32 (2021)46200.
6. Recent Advances in Biogenic Silver Nanoparticles & NanoComposite Based Plasmonic-Colorimetric and Electrochemical Sensors, Irshad Ahmad Wani, ECS Journal of Solid State Science and Technology, 10(2021)047003.

7. Gold nanoparticles as efficient catalysts in organic transformations, Irshad A Wani, Sapan K Jain, Huma Khan, Abul Kalam, Tokeer Ahmad, *Current Pharmaceutical Biotechnology*, 22(6) (2021) 724-732.
8. Application of nanocellulose composites in the environmental engineering as a catalyst, flocculants, and energy storages: A review, Mario Pagliaro, Rosaria Ciriminna, Mohammad Yusuf, Sara Eskandarinezhad, Irshad Ahmad Wani, Mina Ghahremani, Zahra Rezaei Nezhad, *Journal of Composites and Compounds*, 3 (2021) 7.
9. Low Temperature Chemical Synthesis and Comparative Studies of Silver Oxide Nanoparticles. Tokeer Ahmad, Irshad A. Wani, Jahangeer Ahmad, Omar A. Al-Hartomy, Ayed S. Al-Shihri, Abul Kalam. *Journal of Molecular Structure* 1084 (2015) 9-15. DOI information: 10.1016/j.molstruc.2014.12.015.
10. Effect of Gold Ion Concentration on Size and Properties of Gold Nanoparticles in TritonX-100 based Inverse Microemulsions. Tokeer Ahmad, Irshad A. Wani, Jahangeer Ahmad and Omar A. Al-Hartomy, *Applied Nanoscience* 04(2014) 491-498.
11. Structural Characterization, Antifungal Activity and Optical Properties of Gold Nanoparticles Prepared by Reverse Micelles. Irshad A. Wani, Tokeer Ahmad, Nikhat Manzoor, Jahangeer Ahmad, Abul- Kalam, Ayed S Al-Shihri, *Advanced Science Letters* 20 (2014) 1631-1636
12. Biosynthesis, Structural Characterization and Antimicrobial Activity of Gold and Silver Nanoparticles. Tokeer Ahmad, Irshad A. Wani, Nikhat Manzoor, Jahangeer Ahmad, *Colloids and Surfaces B: Biointerfaces* 107 (2013) 227-234.
13. Antifungal activity of gold nanoparticles prepared by solvothermal method. Tokeer Ahmad, Irshad A. Wani, Irfan H. Lone , Aparna Ganguly , Nikhat Manzoor, Aijaz Ahmad, Jahangeer Ahmed, Ayed S. Al-Shihri, *Materials Research Bulletin* 48 (2013) 12–20.
14. Size and shape dependant antifungal activity of gold nanoparticles: A case study of *Candida*. Irshad A. Wani, Tokeer Ahmad, *Colloids and Surfaces B: Biointerfaces* 101 (2013) 162– 170.
15. Structural characterization and antimicrobial properties of silver nanoparticles prepared by inverse microemulsion method. Irshad A. Wani, Sarvari Khatoon, Aparna Ganguly, Jahangeer Ahmed, Tokeer Ahmad, *Colloids and Surfaces B: Biointerfaces* 101 (2013) 243– 250.
16. Silver nanoparticles: Ultrasonic wave assisted synthesis, optical characterization and surface area studies. Irshad A. Wani, Aparna Ganguly, Jahangeer Ahmed, Tokeer Ahmad. *Materials Letters* 65 (2011) 520–522.
17. Silver nanoparticles: Large scale solvothermal synthesis and optical properties. Irshad A. Wani, Sarvari Khatoon, Aparna Ganguly, Jahangeer Ahmed, Ashok K. Ganguli, Tokeer Ahmad, *Materials Research Bulletin* 45 (2010) 1033–1038.

18. Effect of High Manganese Substitution at ZnO Host Lattice using Solvothermal Method: Structural Characterization and Properties. Sarvari Khatoon, Irshad A. Wani, Aparna Ganguly, Jahangeer Ahmed, Omar A. Al-Haratomy, Tokeer Ahmad, Materials Chemistry and Physics_138(2013)519-528.
19. Chemistry of Reverse Micelles: A versatile Route to the Synthesis of Nanorods and Nanoparticles. Tokeer Ahmad, Ashok K. Ganguli, Aparna Ganguly, Jahangeer Ahmed, Irshad A. Wani, Sarvari Khatoon, Proceedings of Materials Research Society, USA, (2009) DOI: 10.1557/PROC-1142-JJ05-59.
20. Controlling the Size and Morphology of Silver Nanoparticles: Role of Chemical Routes. Tokeer Ahmad, Irshad A. Wani, Sarvari Khatoon, NSTI-Nanotech 2011, www.nsti.org, ISBN978-1-4398-7142-3, 1 (2011).

Books Authored/Edited:

1. **Applications of Nanomaterials in Agriculture, Food Science, and Medicine**, Mohd Amin Bhat, Irshad Ahmad Wani and Shah Ashraf (National Institute of Technology Srinagar (NIT Srinagar), India), Release Date: December, 2021 Copyright: © 2021 Pages: 442, DOI: 10.4018/978-1-7998-5563-7, ISBN13: 9781799855637 ISBN10: 1799855635 EISBN13: 9781799855651 ISBN13, Softcover: 9781799855644, Publisher: IGI Global. 2021.
2. **Metallic, Magnetic and Carbon-Based Nanomaterials Synthesis and Biomedical Applications**, Ajit Khosla, Irshad A. Wani, Mohammad Nadeem Lone, John Wiley & Sons, ISBN13: 978-1-119-87065-4, ISBN10: 1-119-87065-8. 2024 (In press)
3. **Nanotechnology based Strategies for Combating Multidrug Resistance**, Mohd. Younus Wani, Irshad A. Wani, DOI <https://doi.org/10.1007/978-981-97-2023->, Softcover ISBN978-981-97-2025-5 Due, eBook ISBN978-981-97-2023-, Springer Nature, (2024).
4. **The Therapeutic Potential of Gold Complexes**, Waseem A Wani; Mohamed F Alajmi; Afzal Hussain; Irshad Ahmad Wani, DOI: <https://doi.org/10.1039/9781837678891>, EPUB ISBN: 978-1-83767-581-4, Hardback ISBN: 978-1-83767-888-4, Publication date: 31 Jan 2025, Royal Society of Chemistry, London.
5. **Nanostructured Materials for Sensing Applications**. Khosla, Ajit, Tokeer Ahmad, Irshad Ahmad Wani, and Stefano Cinti, eds. John Wiley & Sons, 2026.

Book Chapters:

1. © Book chapter entitled 'Role of Gold Nanoparticles in Drug Delivery and Cancer Therapy' in the book, Applications of Nanomaterials in Agriculture, Food Science, and Medicine: Editors: Mohd. Amin Bhat, Irshad Ahmad Wani & Shah Ashraf ISBN13: 9781799855637 ISBN10: 1799855635 EISBN13: 9781799855651 Publisher: IGI Global, 2021.

2. © Book chapter entitled '*Recent Advances in Gold Complexes as Anti Cancer agents*' in the book, Advances in Metallodrugs: Preparation and Applications in Medicinal Chemistry; Editors: Shahidul Islam, Athar Adil Hashmi, Salman Ahmad Khan, eBook ISBN: 978-1-119-64042-4. John Wiley & Sons. 2020.
3. © Book chapter entitled '*Antibacterial and antifungal*' in the book, Nanomaterials-Based Coatings; Editors: Phuong Nguyen Tri Sami Rtimi Claudiane M. Ouellet-Plamondon
eBook ISBN: 9780128158852. Elsevier. 2019.
4. © Book chapter entitled '*Nanocomposites in Environmental Engineering*' in the book Composites for Environmental Engineering, Editors: Shakeel Ahmed and Saif Ali Chaudhry (pages: 259–314), eBook ISBN: 978-1-119-55529-2. John Wiley & Sons. 2019.
5. © Book chapter entitled '*Understanding Toxicity of Nanomaterials in Biological Systems*' in the book "Applying Nanotechnology for Environmental Sustainability" Editors: Sung Hee Joo, ISBN13: 9781522505853, ISBN10: 1522505857, EISBN13: 9781522505860. DOI: 10.4018/978-1-5225-0585-3. Publisher: IGI Global, 2017.
6. © Book chapter entitled '*Recent Advances in Synthesis and Biomedical Applications of Magnetic Nanoparticles: Magnetic Nanoparticles for Biomedical Applications*' in the book "Advancing Medicine Through Nanotechnology and Nanomechanics Applications" Editors Keka Talukdar, Mayank Bhushan, Anil Shantappa Malipatil, EISBN13: 9781522510437, ISBN10: 152250435, EISBN13: 9781522510444. DOI: 10.4018/978-1-5225-1043-7, Publisher: IGI Global. 2016.
7. © Book chapter entitled '*Biomedical Applications of Gold Nanoparticles: Recent Advances and future Prospects*' in the book "Integrating Biologically inspired nanotechnology into medical Practices" Editors: B.K. Nayak, Anima Nanda, M. Amin Bhat, ISBN13: 9781522506102, ISBN10: 1522506101, EISBN13: 9781522506119. DOI: 10.4018/978-1-5225-0610-2. Publisher: IGI Global, 2016.
8. © Book chapter entitled '*Nanomaterials, Novel Preparation Routes and Characterizations*' in the book "Nanotechnology Applications for Improvements in Energy Efficiency and Environmental Management". Editors: M. A. Shah, M. A. Bhat and P. Davin, ISBN13: 9781466663046, ISBN10: 1466663049, EISBN13: 9781466663053. DOI: 10.4018/978-1-4666-6304-6, Publisher: IGI Global. 2014.

Honors and Appreciations:

- Conferred with the best poster presentation at the "6th National Symposium & conference on solid state chemistry and Allied Areas (ISCAS-2009)" held at VIT University, Vellore during November 19 -21, 2009.
- Conferred with the best poster presentation at National Seminar on "POLYMER SCIENCE & TECHNOLOGY – VISION & SCENARIO (Polymer - 08)" December 03, 2008, held in Jamia Millia Islamia, New – Delhi - 25.

- Received the certificate of appreciation in organizing and international conference on Nanotechnology for Better Living jointly organized by NIT Srinagar and IIT Kanpur from 25-29th of May 2016 at NIT Srinagar-Jammu and Kashmir.
- Received the certificate of appreciation in organizing the “Science Academies’ Lecture Workshop on Nanoscience and Nanotechnology” organized by Department of Chemistry, Jamia Millia Islamia (JMI) during March 01-02, 2013 at FTK Centre for Information Technology, MI New Delhi.
- Received the certificate of appreciation in organizing the 7th National Symposium & conference on solid state chemistry and Allied Areas during 24-26th Nov. 2012 Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi, India -25.
- As a resource person for conducting two seminars on ‘Synthesis of Nanomaterials’ in the national workshop on “Nanoscience and Materials Characterization” organized by the Indian Association of Solid State Chemists and Allied Scientist (ISCAS) Institute during June 9-12 at ISCAS institute of Solid State and Materials Science, Jammu University Campus, Jammu, India.

Refresher/ Orientation /FDP Courses

1. Annual Refresher Course in Chemistry for Higher Education Faculty through ARPIT programme-2019, organized by Sri Guru Tegh Bahadur Khalsa College, Delhi.
2. 82nd General Orientation Course organized by Human Resource Development Center (HRDC), University of Kashmir, Srinagar from feb. 25th to Mar. 26th, 2019.
3. Two Weeks Faculty Development Programme on “MANAGING ONLINE CLASSES and CO- CREATING MOOCS” organized by Teaching Learning Centre, Ramanujan College, University of Delhi, from April 20-May 06, 2020.
4. NATIONAL LEVEL ONE WEEK FACULTY TRAINING & DEVELOPMENT SPECIAL ONLINE e-LEARNING TOOLS WORKSHOP with Hands on Training Organized by MAKK SKILLS from 28th May-3rd June 2020.
5. INTERNATIONAL LEVEL THREE DAY FACULTY TRAINING AND DEVELOPMENT PROGRAMME ON FLIPPED CLASSROOM & BLENDED LEARNING Organized by MAKK SKILLS from 8th June-10rd June 2020.
6. Faculty Development Programme on “ Quality Assurance in Higher Education Institutions: Revised NAAC Framework” Organized by School of Management Sciences, Varanasi from 9th – 15th June 2020.
7. Two Weeks Faculty Development Programme on "ADVANCED CONCEPTS FOR DEVELOPING MOOCS" organized by Teaching Learning Centre, Ramanujan College, University of Delhi from July 02 - July 17, 2020.
8. Refresher Course in Chemistry, Organized by UGC HRDC, University of Mumbai, from 19-31 Oct. 2020.

9. UGC Approved Short Term Professional Development Programme Under Pandit Madan Mohan Malaviya National Mission on theme "Implementation of NEP2020 for University and College Teachers held from 12-20 June 2023 organized by Indra Gandhi National Open University (IGNOU) New Delhi.
10. Refresher Course in Chemistry, Organized by UGC HRDC, University of Jammu, from 30-1-23 to 11-02-23.
11. Online Two Weeks Refresher Course in Chemistry, Teaching Learning Centre, Ramanujan College, University of Delhi from 28th April – 11 May 2024.

Papers Presented in National and International Conferences:

1. Paper entitled **Silver Nanoparticles: Chemical and Biological Synthesis and Comparison of their Biological Activity** presented in Two Day National Workshop On NANOSCIENCE-OPPORTUNITIES AND CHALLENGES, Organized by the Department of Physics and Department of Chemistry, Islamic University of Science and Technology (IUST), Awantipora, Jammu and Kashmir, 4th and 5th of September, 2018.
2. Paper entitled **Synthesis and Antimicrobial Activity of Silver Nanoparticles** presented in 13th Session of J&K Science Congress Organized University of Kashmir, Hazratbal Srinagar, Jammu and Kashmir during 17-19th March 2018.
3. Paper entitled **Structural Characterization and Antimicrobial activity of silver silver Nanoparticles** presented in National Conference on Emerging Trends in Materials Sciences(NCETMS-2018) Organized by School of Physics, Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir, India during 7-8 February 2018.
4. Paper entitled **Gold nanoparticles: Synthesis and the comparative study of their antimicrobial activity** presented in International conference on nanotechnology for better living (NBL-2016) organized jointly by NIT Srinagar and IIT-Kanpur at NIT Srinagar during 25-29 May 2016.
5. Paper entitled **Reverse Micellar Synthesis of Gold Nanoparticles: Structural Characterization, Antifungal Activity and Optical Properties** presented in International Conference on Nanoscience and Technology, (ICONSAT) Organized by Institute of Nanoscience and Technology (INST), Mohali, Punjab during 2nd to 5th March 2014.
6. Paper entitled **Gold Nanoparticles: Microemulsion Synthesis and the Study of their Synergistic Antifungal activity with Fluconazole against Candida** Presented in 9th National Symposium and

Conference on “Solid State Chemistry and Allied Areas” Organized by Central University of Sagar, Sagar M.P during 15th to 17th Feb. 2013.

7. Paper entitled **Controlling the Size and Morphology of Silver Nanoparticles: Role of Chemical Routes** presented in 7th National Symposium and Conference on “Solid State Chemistry and Allied Areas” Organized by Jamia Millia Islamia, New Delhi, India during 24th to 26th November 2011.

8. Paper entitled **Role of Surfactant in Stabilizing the Gold Nanoparticles in Microemulsions** presented in 1st National Conference on Recent Advances in Polymer Nanocomposites [NCPN-1] organized by the Department of physics, Zakir Hussain College, University of Delhi, India on 14th -15th January 2011.

9. Paper entitled **Large Scale Solvothermal Synthesis of Silver Nanoparticles** presented in International Interdisciplinary Science Conference(I-ISC 2010) on “Nanobiotechnology: Interface between Physics and Biology Organized by Centre for Interdisciplinary Research in Basic Sciences (CIRBSC), Jamia Millia Islamia, New Delhi, India during 2nd to 4th December 2010.

10. Paper entitled **Silver Nanoparticles: Ultrasonic Wave Assisted Synthesis, Surface Area and Optical Properties** presented in Seminar on “RECENT ADVANCES IN CHEMISTRY 2010” Organized by Department of Chemistry, Jamia Millia Islamia, New Delhi, India on 10th March, 2010.

11. Paper entitled **Solvothermal Synthesis, Characterization and Properties of Silver Nanoparticles** presented in 6th National Symposium and Conference on “Solid State Chemistry and Allied Areas” Organized by VIT university, Vellore, Tamil Nadu, India. During 19th to 21th November 2009.

Conferences/workshops Organized:

1. As a convener, organized a national webinar on the theme “Chemistry of Nanocatalysis on 28th of July 2022 at Govt. Degree College Bhaderwah.
2. As an organizing Secretary, organized a one-week international workshop on “Research Methodology and IPRs” held from 20th to 26th of June 2023 through Blended Mode at Govt. Degree College Bhaderwah.

Projects Guided at Postgraduate Level

S.No	Roll No	Name	Dissertation Title
01	0214-CHMB-21	Nazma Raiz	Silver Nanoparticles: Synthesis, Characterization and Sensing Applications.
02	0215-CHMB -21	Sonia Devi	Green Synthesis, Characterization and Antimicrobial Activity of ZnO Nanoparticles.
03	0217- CHMB -21	Sapna Devi	Synthesis, Characterization, Applications and Toxicity of Titanium Dioxide Nanoparticles.
04	0218- CHMB -21	Shreya Kalsi	Gold Nanoparticles for Photo thermal Cancer Therapy.
05	0222- CHMB -21	Najma Mehtab Wani	Quantum Dots and their Sensing Applications.
06	0206- CHMB -21	Pooja Rani	Iron Oxide Nanoparticles: Synthesis, Characterization and Antimicrobial Activity.

Symposiums and Conferences Participated:

	Participated in Seven days Medical Cum Awareness Camp & Workshop from 15 th April to 21 st April 2021 Organized by Red Ribbon Club of Govt. Degree College Baderwah in Collaboration with Jammu & Kashmir AIDS control society, Department of Health & Medical Education, Govt. of J & K.
	Participated in UT Level Seminar on Impact of Fasting on Mental/Spiritual and Physical Wellbeing on 21 st of April 2022 Jointly organized by Department of Arabic, Persian & Islamic Studies, Govt. Degree College Baderwah.
	Participated in Two days UT Level Workshop on REVISED NAAC FRAMEWORK on 25-26 April 2022 organized by IQAC, Govt. Degree College Baderwah.
	Participated in the INSPIRE Science Camp during 21-25 Nov.2013, sponsored by Department of Science and Technology and Organized by National Institute of Science and Technology (NIT), Hazratbal, Srinagar, J&K, India.
2.	Participated in the one-day Science Academic Lecture Workshop on Nanoscience and Nanotechnology, March 1-2 2013 Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi, India -25.
3.	Participated in the one day National Conference on Advanced Trends in Nanoscience and Nanotechnology (ATNN), 25 th Feb 2013 Organized by the Department of Applied Sciences & Humanities, Faculty of Engineering and Technology, Jamia Millia Islamia, New Delhi, India -25.

4.	Participated in the 9 th National Symposium & conference on solid state chemistry and Allied Areas during 14-17 th Feb. 2013 Organized by the Department of Chemistry, Central University of Sagar, Sagar M.P, India.
5.	Participated in the 8 th National Workshop on solid state chemistry and Allied Areas during 12-15 th May 2012 Organized by the Indian Association of Solid State Chemists and Allied Scientist (ISCAS) Institute, Jammu Tawai, Jammu and Kashmir, India.
6.	Participated in 7 th National Symposium & conference on solid state chemistry and Allied Areas during 24-26 th Nov. 2012 Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi, India -25.
7.	Participated in the Interdisciplinary Science conference on “Interface between Chemistry and Biology” on 8 th of Oct. 2008 organized by the centre for Interdisciplinary Research in Basic Sciences (CIRBSC), Jamia Millia Islamia, New Delhi, India-25.
8.	Participated in 6 th National Symposium & conference on solid state chemistry and Allied Areas during 19-21 th Nov. 2009 held at VIT university, Vellore, Tamil Nadu, India.
9.	Participated in the National Seminar on “RECENT ADVANCES IN CHEMISTRY 2009” Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi, India- 25.
10.	Participated in the National Seminar on “POLYMER SCIENCE & TECHNOLOGY – VISION & SCENARIO (Polymer - 08)” December 03, 2008, Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi, India - 25.
11.	Participated in the on day Summer School Workshop on “Chromatographic Techniques” held on 10 th of Sep. 2007 Organized by the Department of Chemistry, Jamia Millia Islamia, New Delhi India-25.

Peer Reviewer:

Acting as a Reviewer of the following international journals

1. International Journal of Nanomedicine, Dove Medical Press.
2. ACS Omega
3. Acta Biomaterialia

4. Applied Surface Science
5. Colloids and Surfaces A: Physicochemical and Engineering Aspects
6. Colloids and Surfaces B: Biointerfaces
7. Materials Letters
8. Materials Research Bulletin
9. Talanta
10. Letters In Applied Microbiology
11. International Journal Of Science And Engineering Research
12. International Journal Of Knowledge Discovery In Bioinformatics
13. Journal Of Nanotoxicology And Nanomedicine
14. Journal Of Materials Science (Jmsc)
15. Physics Scripta, Iop Sciences
16. Journal Of Materials Science, Springer
17. Scientific Reports, Springer Nature
18. Biomass Conversion And Biorefinery, Springer Nature
- 19.

Membership:

Member Of the Following Scientific Societies/Associations

- Indian Association Of Solid State Chemists And Allied Scientists (Iscas)
- Materials Research Society Of India (Mrsi)
- Society Of Materials Chemistry (Smc), Mumbai India-400085.

Research Interests:

- Inorganic nanomaterials, Nano-biotechnology, Nanoparticle Cancer, Nanoparticle- protein and carbohydrate interactions.
- Synthesis of various classes of Nanoparticles by various chemical and biological routes.
- Investigating the role of Biomolecules in nanoparticle biosynthesis & conjugation of inorganic nanoparticles with various biologically significant molecules.
- Investigating the role of Nanomaterials for Photocatalytic, Electrocatalytic & sensing applications.

Experimental Skills:

- Chemical Synthetic Approaches Of Nanofabrication Like Solvothermal, Sol-Gel, Sonochemical, Microemulsion, Co-Precipitation Methods.

- Biological Approach For Nanomaterial Synthesis Using Biomolecules
Like Enzymes, Proteins And Plant Extracts Etc.
- Extensive Experience In Physical Chemistry Of Surfactants
- Basic Knowledge Of The Protocols Of Elucidating The Antimicrobial Activity Of Various Drugs Taking Nanoparticles Into Special Consideration.

Instrumental Expertise:

1. Bet Surface Area Analyzer (Quanta Chrome, Usa) For Determining The Surface Area And Pore Parameters Of The Nanoparticles.
2. Ocean Optics Uv-Visible Spectrophotometer For Determining The Spr Peaks And Obtaining The Band Gap Of The Nanopariticsles.
3. Bruker D8 Advanced Diffractometere For Determining The Phase Purity And Crystallinity Of The Samples
4. Thermogravimetric Analyzer For Determing The Weight Loss Of The Samples.
5. Ftir Spectrophotometer For Determing The Band Positions Of The Various Polymers Coatings On The Surface Of The Nanoparticles.
6. High Temperature Programmable Furnace, High Frequency Ultrasonic Probe And Ultracentrifuge Machine.

Hobbies:

- Love Swimming, Driving, Trekking, Playing Games Like Cricket, Volley Ball, Badminton, Table Tennis, Basketball.

Courses Taught:

Quantum Chemistry, Spectroscopy, Analytical Chemistry, Reversible And Irreversible Thermodynamics, Statistical Thermodynamics, Green Chemistry, Materials Chemistry, Chemistry Of Polymers, Organic And Physical Spectroscopy, Photochemistry, Nanochemistry, Analytical Chemistry, Solid State Chemistry, Solutions, Electrochemistry, Chemical Kinetics, Surface Chemistry, General Principles And Processes Of Isolation Of Metals, S, P, D And F Block Elements, Co-Ordination Compounds, Organic Chemistry Containing Oxygen And Nitrogen: Preparation And Properties Of Haloalkanes, Haloarenes, Alchols, Phenols And Ethers, Aldehydes, Ketones And Carboxylic Acids, Biomolecules, Polymers, Redox Reactions, Chemical Bonding And Molecular Structure, Equilibrium, Environmental Chemistry Etc.

Practical's Conducted:

Chromatography, Titrations, Separations, Organic Preparations, Characterization And Purification Of Chemical Substances, Preparation Of Sols, Experiments Related To Ph Change, Chemical Equilibrium, Quantitative And Qualitative Estimations, Surface Chemistry, Chemical Kinetics, Thermochemistry, Viscometry, Phase Diagrams, Electrochemistry, Preparation Of Inorganic Compounds, Tests For Functional Groups Present In Organic Compounds Etc.

List of References:

1. Kandalam Ramanujachary

Professor

Department of Chemistry

Rowan University 201 Mullica Hill Road Glassboro, New Jersey 08028-1701

Phone: 856-256-5451

Email: chary@rowan.edu

2. A.K. Ganguli

Professor

Department of Chemistry

Indian Institute of Technology

Hauz Khas, New Delhi-110016

INDIA

Phone: +91 11 2659 6452/6501

Email: ashok@chemistry.iitd.ac.in

3. Dr. Mohd. Ashraf Shah

Assistant Professor

Electron Microscopy Centre, Department of Physics

National Institute of Technology (NIT)

Hazratbal Srinagar, J&K, India

Phone: +91 9419018195

Email: mashahnit@gmail.com