

Dr. Sunita Gulia

Ph.D.,MS.c.

Address: 20 Munirka Vihar, Delhi, India

Phone: +91-9818243834

Email: sunitagulia5@gmail.com

Current Job: Chemistry Lecturer at Hansraj College, University of Delhi, India

PROFESSIONAL SUMMARY

- Chemistry teacher at the college level with nearly **6** years of experience
- Ph.D. Computational Chemistry (Theoretical Studies of Bioconjugated and Transition Metal Doped ZnO Quantum Dots)
- M.Sc. (Physical Chemistry)
- B.Sc. (H) Chemistry

WORK EXPERIENCE

**Hansraj College,
University of Delhi,
India**

July 2016 - Present

Academic Responsibilities

- **Delivered chemistry lectures** to BSc(H) Chemistry students, BSc Life Sciences students & BSc Physical Sciences Students
- **Taught environmental studies to undergraduate students** of all branches using power point presentation, discussion group, case studies and field trip assignments
- **Supervised students** as they performed laboratory experiments; prepared and evaluated their laboratory assignments
- **Conducted laboratory session** on interdisciplinary topics and also help students in handling laboratory instruments in an effective manner
- **Prepared and published a book** keeping in mind the curriculum guidelines for undergraduate science students (Undergraduate

Chemistry: Chemical Energetics, Equilibria & Functional Group Organic Chemistry)

- **Provided hands on sessions** on various computational (IT)skills
- **Provided instructions utilizing various methods** including lectures, discussions, audio-visual presentations, and a multitude of other techniques
- **Developed a healthy and fun learning environment** for the students in the classroom
- **Provided feedback to students** on academic performance and progress

Administrative Responsibilities

- **Participated in the mentor-mentee program**, that is conducted every semester by Hansraj college and extend counseling and carrier guidance to students of different courses
- **Performed various administrative jobs** such as evaluation of answer scripts and undergraduate examination paper setting
- **Acted as an internal and external examiner** for the undergraduate practical examination held every semester
- **Innovation activity co-ordinator** of Institution Innovation Council of Hansraj College, that aims to motivate and encourage students to submit great innovative ideas, that would give the students an opportunity to receive intensive mentoring sessions, organized by Ministry of Human Resource Development (MHRD), Government of India
- **Member of organizing committee of "Innovation in Science Pursuit for Inspired Research (INSPIRE)" programme** organized by Hansraj College. It is an innovative programme sponsored and managed by the Department of Science & Technology, Government of India for the attraction of talent to Science. The basic objective of INSPIRE is to communicate to the youth of the country the excitements of creative pursuit of science, attract talent to the study of science at an early age and thus build the required critical human resource pool for strengthening and expanding the Science & Technology system and R & D base
- **Member of extra curriculum activities (ECA) committee-2019** of Hansraj College and worked closely with other teachers to carry out the admission of students under ECA category
- **Acted as a resource person in a one day skill enhancement**

workshop titled" Celebrating Diwali with 3R's: An eco- friendly perspective, organized by Hansraj college, University of Delhi, 29th October, 2018

- **Member of organizing committee for 1st International conference** on Integrative Chemistry, Biology and Translation Medicine organized by the Centre for Global Health, Hansraj College, University of Delhi & Loyola University Chicago Stritch School of Medicine, USA, 2019

Responsibilities

**Shivaji College,
University of Delhi,
India**

July 2014 – Feb 2015

- **Created and implemented daily lessons** on standard chemistry topics
- **Handled practical classes** related to undergraduate chemistry
- **Established rapport with peers and students** for stronger relationships

Responsibilities

**Ramjas College,
University of Delhi,
India**

Feb 2014 – May 2014

- **Created and fostered** a positive learning environment
- **Carried out instructional activities** for meaningful and comprehensive learning
- **Coordinated with colleagues** for experiments, projects, and lesson design

Responsibilities

**Kalindi College,
University of Delhi,
India**

Oct 2010 – June 2011

- **Encouraged** lively give-and-take discussions
- **Coordinated with colleagues** to improve instructional materials

EDUCATION

2011 - 2015

Ph.D. (Computational Chemistry), Department of Chemistry, University of Delhi, India

2008 - 2010

Master's Degree in Chemistry, Kirori Mal College, University

of Delhi, India

2005 - 2008

Bachelor's Degree in Chemistry, Gargi College, University of Delhi, India

2004

Class XII, V.V. DAV Public School, New Delhi, India

2002

Class X, SKV School, New Delhi, India

KEY SKILLS

- Extensive hands-on experience in the practice of chemistry and solid grasp of its theories
- Comprehensive knowledge and understanding of the subject to create, execute, and analyze student assessments
- Ability to work closely and collaboratively with the college administration
- Outstanding ability to bring about and maintain high academic standards
- Proficiency in a wide range of teaching methods and techniques
- Unquenchable passion and drive to succeed
- Superb organizational and time management skills
- First-rate interpersonal and communication skills to maintain great relationships with colleagues and students

IT SKILLS

- ✓ HyperChem
- ✓ Material Studio
- ✓ Gaussian
- ✓ BASIC Language
- ✓ Microsoft Office
- ✓ Chem Sketch
- ✓ ARGUS LAB

**LABORATORY
EXPERIENCE**

- Construction of the phase diagram of a binary system
- Titrimetric analysis
- Acid-Base Titrations
- Chromatography
- Verification of Lambert-Beer's law
- Complexometric titrations
- Gravimetric analysis
- Job's method
- Colorimetric analysis
- Surface tension measurements
- Viscosity measurement
- Determination of heat capacity of a calorimeter
- Iodimetric Titrations
- pH metric titration
- Conductometric titrations
- Potentiometric titrations
- Systematic Qualitative Organic Analysis of Organic Compounds
- Relative and absolute viscosity measurement
- Kinetics of the reaction
- Computer programs using QBASIC based on numerical methods
- Computer Software like Scilab and Excel, etc for data handling and manipulation

**COURSES
TAUGHT**

- Chemical Thermodynamics and its Applications
- Atomic Structure & Chemical Bonding
- Chemistry of Aliphatic & Aromatic Hydrocarbons

- Chemical Energetics, Equilibria & Functional Group Organic Chemistry
- Molecular Spectroscopy
- Phase Equilibria and Electrochemical Cells
- Quantum Chemistry & Spectroscopy
- Conductance & Chemical Kinetics
- Molecular Modelling & Drug Design
- Applications of Computers in Chemistry
- IT Skills for Chemists
- States of matter
- Ionic Equilibria

PUBLICATIONS

Research papers published in Refereed Journals

- **Sunita Gulia** & Rita Kakkar (2013) ZnO quantum dots for biomedical applications. Adv. Mat.Lett. Vol.4, Issue 12, 876-887, ISSN number: 0976-3961
- Pragati Malik, **Sunita Gulia** & Rita Kakkar (2013) Quantum dots for diagnosis of cancers. Adv. Mat. Lett. Vol. 4, Issue 11, 811-822, ISSN number: 0976-3961
- Sarita Singh, Jyoti Singh, **Sunita Gulia** & Rita Kakkar (2013) Metal Ion Selectivity of Kojate Complexes: A Theoretical Study. J. Theor. Chem. Vol. 2013, 1-9, Article ID: 342783

Research papers/Abstract Published in Conferences/Seminar

- **Sunita Gulia** and Rita Kakkar; "Theoretical Investigation of Glycine-(ZnO)₁₂ and Cysteine-(ZnO)₁₂ complexes in Aqueous Phase", UGC-sponsored National Seminar on "Recent Innovations in Chemical Science and Environment Technology", SriAurobindo College, University of Delhi, 2017, Proceeding

ISBN: 978-93-85329-25-8, Published by Shree Kala Prakashan, Delhi

- Ajay Pratap Singh, Yogita Bisht, **Sunita Gulia** and M. Thirumal; "Band Gap Engineering of ZnO with Environmentally Benign Ag₂O and AgCl/Ag₂O Sensitizers for Efficient Solar Light Harvesting", ICSSR sponsored National Seminar on "Technology for Environmental Sustainability, Socio-Economic Responsibility And Associated Entrepreneurial Opportunities in 21st Century", Sri Aurobindo College, University of Delhi, 2019, Proceeding ISBN: 978-93- 85329-44-9, Published by Shree Kala Prakashan, Delhi.

Book Publication

- Pravita Kumar, **Sunita Gulia**, Yogita Bisht, Shailja Singh & Shrawan Kumar Mangawa; Undergraduate Chemistry (Physical and Organic): Chemical Energetics, Equilibria & Functional Group Organic Chemistry" 2019, ISBN: 978-93-85329-41-8, Published by Shree Kala Prakashan, Delhi

PARTICIPATION IN CONFERENCE/ WORKSHOP/ SEMINAR

Conferences Attended/Presented

- **Participated in "Indo-US Colloquium** on Recent Developments in Interdisciplinary Research" organized by IQAC, Department of Chemistry, Hansraj College, University of Delhi in association with Loyola University Stritch School of Medicine, USA, 2nd July 2018
- **Presented a poster in "1st International conference** on Integrative Chemistry, Biology and Translation Medicine" organised by the Centre for Global Health, Hansraj College, University of Delhi & Loyola University Chicago Stritch School of Medicine, USA, 25-26th February 2019
- **Presented a oral paper** entitled" Theoretical Investigation of Glycine-(ZnO)₁₂ and Cysteine-(ZnO)₁₂ complexes in Aqueous Phase, in UGC-sponsored National Seminar on Recent

Innovations in Chemical Science and Environment Technology, Sri Aurobindo College, University of Delhi, 3-4th March, 2017 and secured **III position**

- **Presented a oral paper** entitled "Band Gap Engineering of ZnO with Environmentally Benign Ag₂O and AgCl/Ag₂O Sensitizers for Efficient Solar Light Harvesting", in ICSSR sponsored National Seminar on "Technology for Environmental Sustainability, Socio-Economic Responsibility And Associated Entrepreneurial Opportunities in 21st Century", Sri Aurobindo College, University of Delhi, 2019 and secured **III position**

Workshop Attended

- **Gaussian workshop** Introduction to Gaussian: Theory and Practice, by Green Chemistry Network Centre Chemistry Department, University of Delhi, 2012
- **National Workshop** on Role of Scientific and Technical Terminology in Higher Education by Commission for Scientific & Technical Terminology, MHRD at Zakir Hussain College, University of Delhi, 2017
- **Workshop on Molecular Modelling** Under Star College Scheme organised by ARSD College, University of Delhi, 2018

RESEARCH SPECIALIZATION

- Nanoparticles
- Quantum Dots
- Structural, Electrical & Magnetic Properties of Quantum Dots

ACADEMIC DISTINCTIONS

- **Awarded Indira Gandhi Scholarship** in CBSE 10th Board
- **College topper** in B.Sc. (H) Chemistry

- **Rewarded merit scholarship** for good performance in B.Sc.(H) by Gargi College, Delhi University
- **Secured 2nd position** in M.Sc. Chemistry, University of Delhi
- **Cleared NET UGC-JRF 2010**
- **Successfully Completed Refresher course:** (ARPIT Course for Career Advancement Scheme (CAS) promotion) Online Refresher Course in Chemistry for Higher Education Faculty with a "A" Grade in the proctored examination held on March 2019 by Sri Guru Tegh Bahadur Khalsa College, Delhi

HOBBIES

- Exploring new places
- Reading magazines

PERSONAL DETAILS

- Marital Status: Married
- Date of Birth: March 12, 1987
- Nationality: Indian
- Languages Known: Hindi, English

A square box containing a handwritten signature in blue ink that reads "Sunita".

Dr. Sunita Gulia
(Assistant Professor)