


Prof. SUDHA GULATI

Title (Ms/Mr/Dr/Prof)	Dr.	First Name	Sudha	Last Name	Gulati	Photograph
Designation	Professor					
Department	Physics					
Education						
Subject	Institution		Year		Details	
B.Sc.(Hons)Phy	Miranda House		1989		Ist div	
M.Sc. Pysics	Univ. of delhi		1991		Ist div	
Qualified joint CSIR-UGC Test for JRF and Eligibility for lectureship	UGC		1991			
Ph.D. TIN-OXIDE GAS SENSOR – EFFECTS OF GRAIN BOUNDARIES, FILM THICKNESS AND NATURE OF ALCOHOL ON SENSITIVITY	UNIVERSITY OF DELHI		2003		-	
Career Profile						
Organisation/Institution	Designation		Duration		Role	
Kalindi college	Adhoc		3 years		Teacher in charge: 1995 – 1997, 2008-10, 2018-2020	
Kalindi College	Permanent (9/8/1995)		29 years		Teaching, Setting of electronics Labs, Research, Corporate contribution to college	
Research Interests/Specialization						
<ol style="list-style-type: none"> 1. Specialisation in electronics 2. Gas sensor 						

3. Material Science

Administrative Assignments / Contribution to corporate life

- Teacher – in – charge of Physics Department of the college, 1995 – 1997, 2006 – 2008, May 2018 – till date
- Convener, Physcom Society, 1995 – 1997, 2006 – 2008, 2018 – till date
- Member Medical Bill committee, 2002 - 2006
- Member Governing Body of the College
- Lehen co convenor, 2005
- Convenor Lehen Registration committee, 2006 - 2007
- Member Purchase Committee
- Admission committee
- Admission science co convenor, 2004 - 2005
- Alumni committee convenor, 2015 – 2018
- Convener of Stage Decoration - Orientation Day (2016), Annual Day (2016), Golden Jubilee Hawan Ceremony (2016)
- Member Mehndi Club
- Convener Poster making competition , Collage making competition
- Convener Alumni Meet, 2016
- Library committee, Core committee Member
- Anti-Ragging committee, Co Convener, since 2011
- Alumni Directory, 2017
- Alumni Sports Meet, 2017
- Member, Moderation Committee for internal assessment of Physics Department
- Member Verification Committee for Botany and Chemistry Lab
- Member, Interview board for appointment of Adhoc teachers in Department of Physics, 2017
- Convener, Inter college Student's Seminar for Physics Department held at Kalindi College on 10 October, 2018
- Head examiner, committee of paper setters for many Physics theory and practical papers
- External examiner for Physics Practical examination in many other colleges of DU
- Deputy Superintendent for some practical examinations, 1995 – till date

- Member, Student Progression to Higher Education, 2019
- Convener for Event Rangoli in Lehen, 2020
- Verification of CAS Forms (Stage I to Stage II), Member, 2020
- Admission of B.Sc. Physical Science, Core committee, 2020
- Physical Verification Committee, Member, 2019
- Attendance Committee, Co Convener, 2021
- Fee concession and scholarship Students' Welfare committee, Convener, 2021
- CCL committee, Member, 2021
- Students' Feedback and Students' Satisfaction Survey, Co-Convener for Science Students, 2021
- Research Project Allocation Committee – Convener, 2024
- Co convener of Group dance in Inter college Cultural festival Lehen 2024
- Convener of Mike and Light committee in Orientation 2023

ATTENDED FDP

- Attended 7-Days Online FDP/Workshop (Hands-on-Training) program on DFT Modelling of Materials [DFT-M]: Nanoparticles, Thin films, Unit cells (Hands-on-Training using Free Licence Software Tool: Quantum Espresso) during 11th March – 17th March 2024.
- Attended Two Week (Online) Interdisciplinary Faculty Development Programme on 'MOOC's, E-Content Development, Research Methodology and Statistical Tools in Open Education World' organised by Kalindi College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi from 3/08/2021 to 17/8/2021.
- Attended 21 Day Live workshop on "Integrating Mind, Body and Soul by practice of yoga and Exercise organized by Kalindi College from 1/06/2021 to 21/6/21.
- Attended 7-Day Live Yoga Workshop organized by Kalindi College from 25/5/21 to 31/5/2021.
- Attended A two-day Anandshala or Blissinar (Seminar aimed at bliss) organised by Bharatiya Shikshan Mandal (BSM) and Research for Resurgence Foundation (RFRF) in association with All India Council for Technical Education (AICTE) from 13/09/2022 to 14/09/2022.

Institutional and Social Responsibilities

- Anti-ragging co convenor, 2009 – 2019
- Anti-Ragging Convener, 2020
- Organised workshop on Anti ragging, 2013
- Convener Swachhta Abhiyan committee for few sites of the college, 2010
- Follow up convener for reviewing, analysing and suggesting improvement for 13 reports of NCC, NSS,ECO, Sports, Lehren, Gayanodaya, ELPC, Coaching classes, Remedial Classes, Placement cell, EOC, GSC, WDC
- Convener, Student Grievance Redressal Cell, 2019
- Convener, Fee Concession and Scholarship Students' Welfare Committee, 2021
- Co Convener, Attendance Committee, 2021
- Member, CCL Committee
- Convener, NEP Committee

Teaching Experiences (Subject/Courses taught)

- Digital Electronics – B.Sc (H) Physics, II year
- B. Sc. (H) Math, Subsidiary subject
- Quantum Physics and Electronics, B. Sc. Physical Science III year
- Quantum Mechanics - B.Sc (H) Physics, III year
- Electricity and Magnetism - B.Sc (H) Physics, I year
- Electricity and Magnetism - B.Sc PS, I year
- B. Sc. PS I year Mechanics (Practical)
- Quantum Mechanics and Electronics – B. Sc. PS, III year
- Electronics Labs. - B.Sc (H) Physics, III year

- Physics Labs - B.Sc (PS) III year
- VAC (Art of being Happy)
- Physics Labs - B.Sc (PS) II year
- Physics Labs - B.Sc (H) Maths, I year
- Physics Labs - B.Sc (PS) I year
- GE Mechanics Lab, I year
- B. Sc. H/ (Practical) (Communication System)
- B. Sc. (H) Physics/Analog systems and Applications (Practical)
- Generic Elective/ Digital, Analog and Instrumentation (Practical)
- B. Sc. H/ (Practical) (Nano Materials and Applications)

Research Guidance (Projects for Undergraduate Students)

Project 1 To design a Swamped Transistor Amplifier to study the effect of swamping on gain of the Amplifier, Stabilization of Gain, Input Impedance of the Amplifier Reduction in distortion of large signals

Project 2: Investigation of Adulteration in Milk using Surface Plasmon Resonance, 2018-19

Project 3: Investigation of Mechanics Problems through Computer Simulation using Scilab (2019-2020) (As Advisor)

Project 4: Study of Electrical behavior of Metal-Semiconductor Contacts for UV Photodetectors. (2019-2020) (As Principal investigator)

Project 5 : Study of structural, optical and magnetic properties of undoped and doped $MnFe_2O_4$ nanoparticles (2023) (As Principal investigator)

Publications (Peer Reviewed/Indexed Journals)

S. No.	Year of Publication	Title	Journal (Name of the journal. Vol Issue ISSN)	Author
1	2000	A theoretical study on factors affecting the sensitivity of SnO ₂ films to methanol"	Proceedings of 7th National Seminar on Physics and Technology of Sensors,	First Author

			University of Pune, India, 14-16 Feb. 2000, C27-1	
2	2000	Factors affecting the temperature at maximum gas sensitivity for chemically deposited SnO ₂ and sputtered ITO films	Proceedings of 7th National Seminar on Physics and Technology of sensors, University of Pune, 14-16 Feb. 2000, C28-1.	First Author
3	2002	Electrical Equivalent model for SnO ₂ Bulk Sensors	Sensors and Actuators B 87 (2002) 309-320	First Author
4	2003	PhD These on 'Tin Oxide Gas Sensor- Effect of Grain Boundaries, Film Thickness and nature of Alcohol on Sensitivity		
5	2019	Designing and Analysis of Swamped Transistor Amplifier and Study of Effect of Swamping on Gain Stabilization	Peer-Reviewed YEARLY ACADEMIC JOURNAL 2019-20 Volume: XIX ISSN : 2348-9014	First Author
6	2021	Investigation of Adulteration in Milk using Surface Plasmon Resonance	<u>ECS Journal of Solid State Science and Technology, Volume 10, Number 9</u>	Corresponding Author
7	2022	Characteristics of MnFe ₂ O ₄ nanoparticles prepared at high molarity of Co-precipitating agent NaOH	European Chemical Bulletin, 11, 195-20	First and corresponding author
8	2023	Influence of top metal electrodes on electrical properties of WO ₃ thin films	International Journal of Materials Research https://doi.org/10.1515/ijmr-2021-8723 .	Corresponding Author
9	2023	Effects of Yb ³⁺ Doping on Structural, Morphological, and Temperature Dependent Magnetic Properties of MnFe ₂ O ₄ Nanoparticles	Journal of Superconductivity and Novel Magnetism, https://doi.org/10.1007/s10948-023-06534-3	First and Corresponding Author
10	2023	Influence of Fe ²⁺ substitution on FTIR and Raman spectra of	Vibrational Spectroscopy, 126, 103540	Corresponding Author

		Mn ferrite nanoparticles		
11	2023	Effect of Morality and Annealing on Structural and Magnetic Properties of MnFe ₂ O ₄	Peer-Reviewed Yearly Academic journal 2022-23 (ISSN : 2348-9014), XXII, 75-82	First and Corresponding Author
12	2023	Influence Of Dopants Fe ²⁺ And Yb ³⁺ On Structural And Optical Properties Of MnFe ₂ O ₄ Nanoparticles	IOSR Journal of Applied Physics (IOSR-JAP) e-ISSN: 2278-4861. Volume 15, Issue 3 Ser. I (May. – June. 2023)	First and Corresponding Author
13	2023	Structural, Morphological, and Magnetic Properties of Fe ²⁺ -Substituted Mn Ferrite Nanoparticles for Biomedical Applications	Journal of Superconductivity and Novel Magnetism, 1-11	First Author
14	2023	Solar Cells for Ecological Sustainable Development: A Review.	<i>Journal of Advanced Zoology, 44</i>	First Author
15	2023	A review on the Variation in the properties of doped and undoped MnFe ₂ O ₄ nanoparticles	Journal of Emerging Technologies and Innovative Research. 10 (12)	First and corresponding author
16	2023	An overview of structural properties of manganese ferrite nanoparticles,	Journal of Emerging Technologies and Innovative Research. 10 (12)	First and corresponding author
17	2024	Optimization of magnetic properties of MnFe ₂ O ₄ by modulating molarity of NaOH as precipitating agent.	International Journal of Materials Research, 115(4), 266-273.	First and Corresponding Author
18	2024	Achiral Polymer-supported Organic Reagents. In Polymer Supported Organic Catalysts (pp. 31-63). CRC Press, 2024	pp. 31-63, CRC Press, 2024 Book Chapter	Second Author
19	2024	Hysteresis Motor In book: Special Electrical Machinery	Wiley Online Library	Corresponding Author

		10.1002/9781394193912.ch3	
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Seminar/Workshop/Conferences Presentation/Organisation

- UGC Sponsored Orientation Program by CPDHE in 2002
- UGC Sponsored Refresher course on Physics & Electronics by CPDHE in 2002
- UGC Sponsored Refresher course on Physics & Electronics by CPDHE in 2004
- Participated in NSED – IX held at NPL in 1996
- Participated in Conference on the recent advances in Nano-Science and Nano-technology organised by Deptt. of Applied Sciences and humanities in 2003
- Participated in Indo-Australian symposium on Multifunctional Nanomaterials Nanostructures and applications organised by Deptt. of Physics and Astrophysics in 2007
- Participated in workshop on Quantum Mechanics : Theory and Applications organised by DDU college, Delhi University in 2008.
- Participated in ICT workshop for Capacity Building by Delhi University Faculty in 2009
- Participated in Indian Physics and Mega Projects National Symposium organised by D S Kothari centre for Research and Innovation in Science Education in 2009.
- Participated in Conference on Optoelectronics held at IIT
- Attended one day workshop on “Optics and Its Applications in Information Technology” organised by Department of Physics, SEAS, Bennett University, Greater Noida.
- Member , Organizing committee of Vigyan Vividha, Inter College Science Festival held 29- 30 Jan., 2014 at Kalindi College,
- Participated in Workshop On ‘Quantum Physics :An Insight’, held at Kalindi college on October 25 – 26, 2017.
- Participated in National Conference on Technological Empowerment of Women at Vigyan Bhavan on March 8 – 9, 2018.
- Resource person to deliver a lecture on” Basics of Electronics: components and circuits” in Skill Enhancement Workshop for Laboratory Staff held at Kalindi College on 13 – 14 March, 2018,

- Presented Poster on the topic ‘ SPR based Optical Sensor for the Detection of Adulteration in Milk’ in the international Conference on ‘Physics, Society and Technology—2019’ organized by Department of Physics and IQAC, Deshbandhu College on January 17 – 19, 2019.
- “Modern techniques to detect food adulteration”, Neha Ahlawat, Raksha Tewari, Ritika Jain, Monika Bassi, Sudha Gulati, Savita Sharma, presented at Astrodroid, Physcom society fest of Kalindi college held at Kalindi college, University Of Delhi.
- “Food adulteration and recent techniques to detect ”, Neha Ahlawat, Raksha tewari, Manu Chaudhary, Ritika Jain, AyushiDhyani, IshikaBhullar, Monika Bassi, Savita Sharma, Sudha Gulati, presented at IIIT Student Conference on “Optics And Photonics” held at Jaypee Institute Of Information Technology, Noida from 2nd-3rd November, 2018.
- “Investigation of adulterants in milk using surface plasmon resonance”, Sudha Gulati, Monika Bassi, Savita Sharma, Neha Ahlawat, Raksha Tewari, AyushiPaliwal, Monika Tomar, Vinay Gupta presented at International Conference on “Physics, Society And Technology-2019” held at Conference Centre, University of Delhi from 17th-19th January,2019.
- Attended a National Conference on “Biotechnology in Present Era: Impact on Human Life and Environment” organized by Maitreyi College in collaboration with the Department of Biotechnology, Govt. of India (Under the DBT-CTEP) Programme on 23rd August 2019.
- Participated and presented a Poster in “National Conference on Advanced Materials: Theory and Applications (NCAMTA)” held from September 26-28, 2019, at Hansraj College on the topic: “Detection of Adulteration in Milk using SPR based Optical Sensor” published in Abstract Book pp 49, NCAMTA-2019.
- Participated in National Seminar on “Nuclear, Particle and Accelerator Physics” jointly organized by Department of Physics, Kalindi College and The National Academy of Sciences (NASI) Delhi Chapter on 6th November, 2019.
- Participated in National Seminar on “Laser Dynamics and Fiber Optics” organized by
- Department of Electronics and Department of Physics, Shaheed Rajguru College of Applied Sciences for Women, University of Delhi on 7th January, 2020.

- Attended a National Webinar on “What is light: Evolution of Quantum Theory” organized by Department of Physics, Kalindi College, University of Delhi on 12th May, 2020.
- Attended a National Webinar on “Science, Society and Exponential Change: Reimagining the Future” organized by Department of Physics, Kalindi College, University of Delhi on 13th May, 2020.
- Attended a National Webinar on “An introduction to Measurement science, Technology and Society” organized by School of Physical Sciences, JNU, New Delhi on 8 May, 2020.
- Attended a Webinar on “Cyber Security For Women” jointly organized by Lakshmibai College, University of Delhi and Delhi State Legal Services Authority on 8th May, 2020
- Convener for organizing a National webinar on “An introduction to measurement of light” organized by Physics Department, Kalindi college, on 13th May, 2020.
- Attended a National webinar on “Emerging out as a winner in lock down” organized by Physics Department, Kalindi college, on 14th May, 2020.
- Attended a National Webinar on “Media Landscape – Before and After Covid – 19” Organized by Apeejay Institute of Mass Communication in collaboration with Department of Journalism of Kalindi College, University of Delhi on 15th May, 2020
- Attended a webinar on “Mindfulness and Stress Management: Living in the Times of COVID – 19” organized by Department of Political Science, Kalindi College on 15th May, 2020.
- Invited as judge for video making competition “COLLOQUIUM.mp4” organized by PHYSITHON – The Physics Society.
- Invited to deliver talk on August 20, 2020, on “Electricity & Magnetism” in 11-week Course on Learning Physics with Conceptual & Problem-based Approach, Organized by The National Academy of Sciences India (NASI) - Delhi Chapter. The lecture has been uploaded on the you tube channel of “NASI Delhi Chapter”.
- certificate is awarded in recognition of valuable contributions to the Online Prelims of National Anveshika Experimental Skill Test 2020.

- Presented Poster on the topic ‘Influence of top metal electrodes on electrical properties of WO₃ thin film’ in the international Conference on Energy and Advances Material (ICEAM 2021) organized by Department of Physics and Materials Science and engineering, Jaypee Institute of Information technology, Noida, October 21 -23, 2021.
- Invited as a judge to evaluate the reports on Experiments during prelims round of NAEST – 2020 organized by National Anveshika Network of India (NANI) a unit of Indian Association of Physics Teachers (IAPT) in collaboration with Vigyan Parisar and Shiksha Sopan.
- Invited as a judge to evaluate the reports on Experiments during prelims round of NAEST – 2021 organized by National Anveshika Network of India (NANI) a unit of Indian Association of Physics Teachers (IAPT) in collaboration with Vigyan Parisar and Shiksha Sopan.
- Attended state/national/international p/conference on “How Light Behaves When the Refractive Index Vanishes Organised by the Research Centre for Compact Radiation Sources and Department of Applied Science and Humanities held on September 24, 2021, at at Raj Kumar Goel Institute of Technology, Ghaziabad.
- Attended national seminar on “Rewiring Your Genetics: From Genetics To Epigenetics” Organised by Physithon Society, Department of Physics, Kalindi College held on 15 January, 2022.
- Attended international webinar on “Ask an expert cum career counseling.” Organised by Gargi College held under the aegis of NASI 19 February, 2022
- Attended national webinar on “Fight against Tobacco” Organised by Anti Tobacco Committee in collaboration with IQAC, Kalindi College held on 16th October, 2021.
- Attended a webinar on “Nanotechnology & Optoelectronics” Organised by Neutronics Society Department of Physics & Electronics. Rajdhani College, University of Delhi held on 8th November, 2021.
- Attended international webinar on “Gender Culture and the Everyday Experience” Organised by Physithon Society, Department of Physics, Kalindi College, held on 27th October, 2021.
- Attended webinar on “Tools and Techniques for avoiding plagiarism in E- Development” Organised by E – Content development Committee, Kalindi College, University of Delhi, held on 9th November, 2021.

- Attended National webinar on “Story lines in Music and Poetry” Organised by Sagacious Scribblers – The English creative club development Committee, Kalindi College, University of Delhi, held on 28th January, 2022.
- Presented paper on “An overview of the advancement on the solar cell” in International Conference On Advances in Power Generation, Renewable and sustainable Development organised by Department of Mechanical Engineering Rajasthan held at Rajasthan Technical University Kota, Rajasthan, India during February 03-04, 2023.
- Invited as Resource person in national seminar on “national students' seminar” Organised by physithon society department of physics, kalinda college held on 19th-20th april, 2023, at Kalindi College.
- Invited as a judge to evaluate the reports on Experiments during prelims round of NAEST – 2023 organized by National Anveshika Network of India (NANI) a unit of Indian Association of Physics Teachers (IAPT) in collaboration with Vigyan Parisar and Shiksha Sopan.
- Invited as resource person to deliver talk (1.5 hour duration) 11 week course on Learning Physics with conceptual and problem based approach On the topic of “Electricity and Magnetism” on August 20 , 2020

Awards & Distinctions

- Junior Research Fellowship by Joint CSIR – UGC,
- Senior Research Fellowship by Joint CSIR – UGC
- Qualified NET, December 1991
- Awarded certificate for being the Principal Investigator in the Innovation Research Project entitled “Investigation of Adulteration in milk using Surface Plasmon Resonance in 2018-2019, on 30.9.2019.
- Awarded certificate of enrolment as Life Member of the “Indian Association of Physics Teachers” Kanpur.

Public Service/ University Service/ Consulting Activity

- Attended meeting on 12th July, 2019 to discuss anti ragging measures in Conference Hall, University of Delhi
- Attended Meeting with Vice Chancellor to discuss Framework 1 and Framework 2 of Bachelor of study/Discipline (Hons) on 24/12/2021.
- Participated in Curriculum development of Quantum Mechanics: Hons. Sem 5 – DSC 14 (3T, 11P), Hons. Sem 8 – DSC 20 (4T,0P), GE 15 (3T, 0P, 1Tu), Prog. Sem 7 – Physics DSC 7 (4T, 0P), Prog. (Electronics) Sem 7- Physics, DSC 11 (4T,0P), Analytical Chemistry – DSE (2T, 2P), Industrial Chemistry – DSE (2T, 2P)