DEPARTMENT OF PHYSICS
DYAL SINGH COLLEGE, UNIVERSITY OF DELHI
FACULTY DETAIL

Title	Dr.	First Name	Arun Singh	Last Name	Patel	Photograph
Designation		Assistant Professor				
Address		Department of Physics, Dyal Singh College, University of Delhi, Lodhi Road, New Delhi - 110003				
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Educational Qualifications

Degree	Institution	Year
Ph.D.	School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India	2016
M.Sc.	Department of Physics, Banaras Hindu University, Varanasi, India	2009
B.Sc.	S.G.R.R.P.G. College, H.N.B. Garhwal University, Srinagar Garhwal, Uttarakhand, India	2007

Career Profile

• **Assistant Professor**- Department of Physics, Dyal Singh College, University of Delhi, Delhi, India
July 2023 - till date.
• **Assistant Professor (ad hoc)**- Department of Physics, Hindu College, University of Delhi, Delhi, India
January 2020 - January 2023.
• **Research Associate**- Quantum Photonics Lab, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India
April 2019 - December 2019.
Topic: *Entangled photons for quantum communication and quantum information applications*.
• **Post-doctoral Fellow**- Department of Applied Physics, Hanyang University, ERICA, Ansan, South Korea
2017 - 2018.
Topic: *Fabrication of optoelectronic devices for optical sensors*.
• **Research Associate**- School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi, India
2016 - 2017.
Topic: *Surface enhanced Raman spectroscopy based sensing*.
• **Research Assistant**- School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi, India
2015 - 2016.
Topic: *Energy transfer in 2D nanomaterials*.

Administrative Assignments (From 1st July 2019 onwards)

- Member of Admission Committee
- Member of COSMOS (Physics Society)
- Member of Energy Audit Committee
- Member of Alumni Committee
- Member of Physics IQAC Committee

Areas of Interest / Specialization

Nanomaterials, Single photon counting, Resonance energy transfer, Optoelectronic devices, Quantum communication, Laser spectroscopy

Subjects Taught

- Quantum Mechanics and Applications
- Advanced Mathematical Physics
- Elements of Modern Physics
- Communication Electronics
- Solid State Physics
- Mechanics

Research Guidance

Publications Profile (From 1st July 2019 onwards)

- P. Mishra, A.S. Patel, S.K. Chauhan, and A. Chakraborti "Photoinduced Charge Transfer in Transition Metal Dichalcogenide Quantum Dots" https://arxiv.org/abs/2405.21035
- A.S. Patel, P. Mishra, A. Chakraborti, and P. Sharma "Two-Dimensional Molybdenum Disulfide Nanosheets Based Optoelectronic Devices" Emerging Applications of Novel Nanoparticles, 267-300 (2024).
- P. Sharma, A. Rani, A.S. Patel, and K. Singh "Factors affecting photocatalytic degradation of methyl red by MoS_2 nanostructures prepared by hydrothermal technique" Bull. Mater. Sci. 46 94 (2023).
- A.S. Patel, and A. Chakraborti "Emergence of Dirac Cone in $CsPbBr_3$ Perovskite-based Two-Dimensional Photonic Crystals" Materials Today: Proceedings (2023).
- S. Barman, S. Neema, A. Rana, A.S. Patel, A. Chakraborti, and A.S. Rana "Investigation of Vacuum Arc-Deposited ta-C and taC:N Thin Films on Silicon and Stainless-Steel Foil Substrates using Raman Spectroscopy" Materials Transactions 63 (10), 1510-1513 (2022).
- S. Barman, B. Singh, A. Bag, A.S. Patel, A. Chakraborti, and A. Rana "Visible light driven photocatalytic degradation of methyl orange by $Fe_2O_3BiOCl_{0.5}Br_{0.5}$ composite photocatalyst" Asia-Pacific Journal of Chemical Engineering 16, e2715 (2021).
- A. Rani, A.S. Patel, A. Chakraborti, K. Singh, and P. Sharma "Enhanced photocatalytic activity of plasmonic Au nanoparticles incorporated MoS_2 nanosheets for degradation of organic dyes" Journal of Materials Science: Materials in Electronics 32, 61686184 (2021).
- A.S. Patel, A. Chakraborti, and P. Mishra "Interaction of fluorescent gold nanoclusters with transition metal dichalcogenides nanosheets: A spectroscopic study" Journal of Luminescence 227, 117589 (2020).
- A. Rani, K. Singh, A.S. Patel, A. Chakraborti, S. Kumar, K. Ghosh, and P. Sharma "Visible light driven photocatalysis of organic dyes using SnO_2 decorated MoS_2 nanocomposites" Chemical Physics Letters 738, 136874 (2020).

Conference Organization/ Presentations (From 1st July 2019 onwards)

- International Conference on Recent Advancements in Nanotechnology for Sustainable Development (ICRANSD-22), Organized by Maharaja Agrasen University, Baddi, India, November 11-12, 2022.
- Science Festival & National Workshop on Environment and Society: Inter-linkages and Co-existance-2020, Hindu College, University of Delhi, Delhi, India, February 27-29, 2020.
- International Symposium on Quantum Information Technology 2019, Organized by DIAT, DRDO, and JATC-IITD in Pune, India, December 2-5, 2019.

Research Projects (Major Grants/Research Collaboration) (From 1st July 2019 onwards)
Awards and Distinctions (From 1st July 2019 onwards)
Association With Professional Bodies
Reviewer of papers submitted to journals: • Nature Scientific Reports • Nanotechnology • Microchimica Acta
Other Activities like MOOCs/ Patents etc. (From 1st July 2019 onwards)

Arun Singh Patel
Signature of Faculty Member