

Faculty Profile Format

1. Personal Details:

- a. Name of the Faculty: SUJOY PODDAR
- b. Academic Degrees: PhD
- c. Department: Physics
- d. Designation: Assistant Professor (Stage III)
- e. Email id: sujoy.phy@gmail.com
- f. Courses Taught: Classical Mechanics, Relativistic Quantum Mechanics, Nuclear and Particle Physics, High Energy Particle Physics, Nuclear Physics, Principles of Relativity and Cosmology
- g. Area of Research Interests: High Energy Particle Physics, Collider Phenomenology, Dark Matter, Nonlinear dynamics
- h. Teaching Experience [substantive post only]: 14+ years
- i. Administrative Experience: Coordinator, Physics Department since January, 2021



2. Research Publications [Last 5 Years]:

Serial No.	Title of the Research Paper	Level [international/national/state]	ISBN/ISSN	Name of the Publishing Agency	Year of Publication
1.	Solitary wave characteristics in nonlinear dispersive media: a conformable fractional derivative approach	International	1573-269X	Springer	2022
2.	Revisiting the gluino mass limits in the pMSSM in the light of the latest LHC data and Dark Matter constraints	International	0217-751X (print) 1793-656X (online)	World Scientific	2022

3. Research papers presented in conferences/seminars [Last 5 years]:

Serial No	Title of the Paper Presented	Title of the seminar/ conference	Level [international/ national/state]	Name of the organiser	Date

4. Research Projects:

Serial No.	Title of the Research Project(s)	Funding Agency	Date of Award	Duration of the Project	Research Grants Amount	Status of the Project

5. E-learning material, if any:

Course Details	Name of the Institution	Date/year of uploading	Quadrant I, II, III, IV	Link
<p>Nuclear and Particle Physics E-Material</p> <p>Module 1.</p> <ul style="list-style-type: none"> Liquid drop model Bethe-Weizsacker Mass Formula Applications of Semi empirical mass formula Neutron Star <p>Module 2.</p> <ul style="list-style-type: none"> Nuclear Shell Model Determination of Spin-Parity of ground state 	DHWU	2020-21		<p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-1.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-2.pdf</p>

<ul style="list-style-type: none"> • Magnetic Dipole moment and Quadrupole moment • Excited states of nucleus <p>Module 3.</p> <ul style="list-style-type: none"> • Nuclear Collective Model • Fermi Gas Model <p>Module 4.</p> <ul style="list-style-type: none"> • Nuclear Reactions • Compound Nucleus Hypothesis • Energetics of Nuclear Reactions <p>Module 5</p> <ul style="list-style-type: none"> • Introduction to Elementary Particles • Discovery and properties of Elementary Particles • Baryon octet and decuplet and Meson octet • Conservation laws 				<p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-3.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-4.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-5.pdf</p>
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<p>Module 6</p> <ul style="list-style-type: none"> • Characteristics of Fundamental Interactions • Isospin invariance 				<p>https://www.dhwu.ac.in/pdf/s-material/NPP-Module-6.pdf</p>
<p>High Energy Particle Physics Ematerial</p> <p>Module 1.</p> <ul style="list-style-type: none"> • SSB for U(1) Global gauge symmetry • Higgs Mechanism for U(1) Abelian Gauge Symmetry • Higgs Mechanism for Non-Abelian Gauge Theory <p>Module 2.</p> <ul style="list-style-type: none"> • The Standard Model Gauge group and symmetries • Gauge bosons in the SM • Fermion sector of the SM 	<p>DHW U</p>	<p>2020- 21</p>		<p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-1.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-2.pdf</p>

<p>Module 3.</p> <ul style="list-style-type: none"> • Solar Neutrino Puzzle • Atmospheric Neutrino Puzzle • Neutrino Oscillation Phenomena <p>Module 4.</p> <ul style="list-style-type: none"> • Feynman Rules for Quantum Electrodynamics (QED) • Elastic electron-proton scattering • Inelastic electron-proton scattering <p>Module 5.</p> <ul style="list-style-type: none"> • Inelastic electron-proton scattering • Deep-inelastic scattering <p>Module 6.</p> <ul style="list-style-type: none"> • Parton Model • Callan-Gross relation & Bjorken Scaling 				<p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-3.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-4.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-5.pdf</p> <p>https://www.dhwu.ac.in/pdf/s-material/HEPP-Module-6.pdf</p>
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6. Research Supervision (Ph.D./M.Phil.)

Serial No.	Name of the student	Research Topic	Name of the institution	Date of Registration	Year of Award of the Degree
1.	Abhi Mukherjee	High Energy Physics	Kalyani University	09.03.2018	Ongoing
2.	Dilruba Gazi	High Energy Physics	DHWU	29.06.2022	Ongoing

7. Programmes Conducted / Organised as Convenor / Organising Secretary at DHWU [Last Five Years]

Serial No.	Date	Name of the Programme	Sponsored By	

8. Other Relevant Information, if any:

Serial No.	Achievements / Awards	Assignment Details [Membership of Professional Bodies/Editorial Board/BOS/BORS etc.]
		Member of BOS, BORS