

# Faculty Profile Format

## 1. Personal Details:

- a. Name of the Faculty: SUDIP GARAI
- b. Academic Degrees: PhD
- c. Department: Physics
- d. Designation: Assistant Professor
- e. Email id: sudip.dhwu@gmail.com
- f. Courses Taught: Mathematical methods, Computer programming, Statistical Mechanics, Electrodynamics, Astrophysics & Cosmology, Nuclear physics
- g. Area of Research Interests: Plasma physics, Nonlinear dynamics
- h. Teaching Experience [substantive post only]: 6+ years
- i. Administrative Experience: NA



## 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
20.	General solutions and applications of the coupled Drinfel'd--Sokolov--Wilson equation	International	2666-657X	Elsevier	2023
19.	Relativistic formulation of curl force, relativistic Kapitza equation and trapping	International	1573-269X	Springer	2023
18.	Optical solitons with generalized	International	2065 - 3824	INOE	2022

	quadratic–cubic nonlinearity				
17.	Solitary wave characteristics in nonlinear dispersive media: a conformable fractional derivative approach	<b>International</b>	1573-269X	<b>Springer</b>	2022
16.	On a geometric description of time-dependent singular Lagrangians with applications to biological systems	<b>International</b>	1793-6977	<b>World Scientific</b>	2022
15.	Some exact wave solutions of nonlinear partial differential equations by means of comparison with certain standard ordinary differential equations	<b>International</b>	1099-1476	<b>Wiley</b>	2022
14.	Pressure wave characteristics in a bubble-liquid mixture via Kudryashov–Sinelshchikov equation	<b>International</b>	1745-5049	<b>Taylor &amp; Francis</b>	2022

13.	On the construction of the general solution of the Fokas–Lenells equation	<b>International</b>	<b>2666-657X</b>	<b>Elsevier</b>	<b>2021</b>
12.	Integrable modulation, curl forces and parametric Kapitza equation with trapping and escaping	<b>International</b>	<b>1573-269X</b>	<b>Springer</b>	<b>2021</b>
11.	On the solution of the Generalized Radhakrishnan-Kundu-Lakshmanan equation	<b>International</b>	<b>1618-1336</b>	<b>Elsevier</b>	<b>2021</b>
10.	Solutions of the variable coefficient Radhakrishnan-Kundu-Lakshmanan equation using the method of similarity reduction	<b>International</b>	<b>1618-1336</b>	<b>Elsevier</b>	<b>2021</b>
9.	Variable coefficient higher-order nonlinear Schrödinger type equations and their solutions	<b>International</b>	<b>1618-1336</b>	<b>Elsevier</b>	<b>2021</b>
8.	Solitary wave solutions for the KdV-type	<b>International</b>	<b>2190-5444</b>	<b>Springer</b>	<b>2021</b>

	equations in plasma: a new approach with the Kudryashov function				
7.	Higher-order saddle potentials, nonlinear curl forces, trapping and dynamics	<b>International</b>	<b>1573-269X</b>	<b>Springer</b>	<b>2021</b>
6.	Solitary wave solutions of nonlinear PDEs using Kudryashov's R function method	<b>International</b>	<b>1362-3044</b>	<b>Taylor &amp; Francis</b>	<b>2021</b>
5.	Lax Pairs and First Integrals for Autonomous and Non-Autonomous Differential Equations Belonging to the Painlevé – Gambier List	<b>International</b>	<b>2658-5324 (print), 2658-5316 (on-line)</b>	<b>ICS</b>	<b>2020</b>
4.	Thermoacoustic instability in a two-dimensional dusty plasma: A study in the weakly and strongly coupled regime	<b>International</b>	<b>1089-7674</b>	<b>AIP</b>	<b>2020</b>
3.	Rayleigh Taylor like instability in presence of shear velocity	<b>International</b>	<b>1402-4896</b>	<b>IOP</b>	<b>2020</b>

	in a strongly coupled quantum plasma				
2.	Application of the Kudryashov function for finding solitary wave solutions of NLS type differential equations	<b>International</b>	<b>1618-1336</b>	<b>Elsevier</b>	<b>2020</b>
1.	On the solution of certain higher-order local and nonlocal nonlinear equations in optical fibers using Kudryashov's approach	<b>International</b>	<b>1618-1336</b>	<b>Elsevier</b>	<b>2020</b>

### 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
1.	Dusty Plasma - An emerging field of science to explore	Young Physicists' Meet 2021	National	Department of Physics, School of Basic and Applied Sciences, Adamas University Kolkata.	30.07 .2021 - 31.07 .2021

#### 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

#### 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.	Sharmistha Sain	Plasma Physics	Diamond Harbour Women's University	04.02.2021	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

Date: 04.04.2023