Curriculum Vitae

SAYANTAN SIL

Address: **Office:** Department of Physics, P. K. Roy Memorial College, Dhanbad-826004, Jharkhand, India.

Residence: Flat. No. G-1, Saroj Apartment, Kilburn Coloney, Hinoo, Ranchi-834002, Jharkhand, India

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Date of Birth: 01/08/1983; **Language Proficiency:** English, Bengali, Hindi

1. **Present Position:** "**Assistant Professor**", Department of Physics, P. K. Roy Memorial College, Dhanbad-826004, India.
2. **Research Interest:** Magneto-fluid-dynamics (MHD), Fluid dynamics, Plasma, theoretical Physics.
3. **Academic Details:**

Degree	*University/Board*	*Year*	*Subjects*	*DIV/CLASS*
PhD.*	RANCHI UNIVERSITY, RANCHI	2016	PHYSICS	
M.Sc.	RANCHI UNIVERSITY, RANCHI	2005	PHYSICS	1ST
B.Sc.	RANCHI UNIVERSITY, RANCHI	2003	PHY (HONS.),CHEM, MAT,	1ST
12th Std.	B.I.E.C (BIHAR BOARD)	2000	PHY, CHEM, MAT,COMPUTER SCIENCE	1ST
10th Std.	C.B.S.E	1998	MAT, SC., BIO, ENG, HIN, SO.SC.	1ST

* **Thesis Title:** ***"Analytical Studies of Some Problems of Magneto-fluid-dynamic flows".***
Thesis supervisor: **Dr. Manoj Kumar**.

4. **Details of Employment**
   - **Assistant Professor : April 2017 - Till Date (Ongoing)**
     Department of Physics, P.K. Roy Memorial College, Binod Bihari Mahto Koyalanchal University Dhanbad, India
   - **Assistant Professor: November 2012 – April 2017**
     Department of Physics, S.S.L.N.T. Mahila College, Dhanbad, Vinoba Bhave University, Hazaribag, India
   - **Assistant Professor: March 2008 – November 2012**
     Department of Physics, St. Columba's College, Hazaribag, Vinoba Bhave University, India
5. **Publications in International /National Journals/ Conference Proceedings:** **22**
6. **International/National Conferences (Paper Presentation) :** **22**

7. List of Publications in Journals

S.N. Title / Authors / Name of Journal / Page No. /Year

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22. Exact solution of equations governing aligned plane rotating magnetohydrodynamics steady flows using (r, ψ) co-ordinates
Santosh Singh, **Sayantan Sil** and Manoj Kumar
Journal of Technology, 15(2), 1-13, **2025**

21. A Class Of Exact Solutions of MHD Fluid Through Porous Media with Hall Effect and Variable Permeability using Inverse Method
Santosh Singh, **Sayantan Sil** and Manoj Kumar
Bulletin of Calcutta Mathematical Society, **116** (3), 283-312, **2024**.

19. Analytical Solution of Equations Governing Aligned Plane Rotating Magnetohydrodynamic Fluid Through Porous Media by Martin's Method
Birendra Kumar Vishwakarma, **Sayantan Sil** and Manoj Kumar
Journal of the Indonesian Mathematical Society, **30** (1), 40-62, **2024**.

18. Flow Of Mhd Micropolar Fluid Through Porous Medium: A Hodograhic Approach For Exact Solution
Sayantan Sil
Annals of Mathematics and Computer Science, 22, 128-148, **2024**

17. A Magnetographic Analysis of MHD Orthogonal Rotating Flow
Sayantan Sil, Mantu Prajapati and Manoj Kumar
Advances and Applications in Mathematical Sciences, **22** (2), 377-377, **2022**

16. Exact Solutions of unsteady Transverse in Rotating Frame by Hodograph Transformation
Birendra Kumar Vishwakarma, **Sayantan Sil** and Manoj Kumar
Bulletin of Calcutta Mathematical Society, **114** (4), 461-488, **2022**.

15. Exact Solutions of non-Newtonian Fluid of Rotating MHD Flows Through Porous Media with Hall Effect by Complex Variable Technique
Manoj Kumar, **Sayantan Sil** and Mantu Prajapati
Gulf Journal of Mathematics 12 (2)**,** 66-73, **2022**

14. Magnetograph Transformation in Variably Inclined Two Phase MFD Flows,
Santosh Singh, **Sayantan Sil** and Manoj Kumar
Journal of Scientific Research **14** (1), 115-130, **2022**

13. Analytical solutions of second grade electrically conducting fluid with Hall Effect through porous media using hodograph transformation,
Sayantan Sil, Birendra Kumar Vishwakarma and Manoj Kumar
Ganita **71** (2), 81-98, **2021**.

12. A Class of Exact Solution Of Equations Governing Aligned Plane Rotating Magnetohydrodynamic Flows by Martin's Method,
Sayantan Sil, Mantu Prajapati and Manoj Kumar
Ganita **70** (1), 41-52, **2020**.

11. Plane Micropolar Fluid Through a Porous Medium: Exact Solution by Hodograph Transformation,
Sayantan Sil and Manoj Kumar
International Journal of Applied Engineering Research, **14** (12), 2824-2829, **2019**.

10. Rotating MHD Flow: An Exact Solution by Hodograph Transformation,
Manoj Kumar, **Sayantan Sil** and Mantu Prajapati
Bulletin of Pure & Applied Sciences-Physics, **37** (2), 88-107, **2018**.

9. A class of exact solutions of MHD fluid through porous media with variable permeability using inverse method,
Mantu Prajapati, **Sayantan Sil** and Manoj Kumar
Bulletin of Calcutta Mathematical Society, **110** (6), 333-354, **2018**.

8. Solution of constantly inclined rotating two phase magnetohydrodynamic flows through porous media,
Sayantan Sil, Manoj Kumar and Sahendra Singh
International Journal of Mathematical Archive, **9** (3), 225-231, **2018**.

7. An Exact Solution of Steady Plane Rotating Aligned MHD Flows using Martin's Method in Magnetograph Plane,
Manoj Kumar and **Sayantan Sil**
Journal of Mathematical Sciences, **3**, 83-89, **2016**.

6. Exact Solution of Second Grade Fluid in a Rotating Frame through Porous Media Using Hodograph Transformation Method,
Sayantan Sil and Manoj Kumar
Journal of Applied Mathematics and Physics, ***3***, 1443-1453, **2015**.

5. Inverse solutions for Unsteady Second Grade Aligned MHD Fluid Flow Through Porous Media,
Manoj Kumar, **Sayantan Sil** and C. Thakur
Bulletin of Calcutta Mathematical Society, **107** (2), 179-192, **2015**.

4. A Class of Solution of Orthogonal Plane MHD Flow through Porous Media in a Rotating Frame,
Sayantan Sil and Manoj Kumar
Global Journal of Science Frontier Research: A Physics and Space Science, US **14**, (7), 17-26, **2014**.

3. Some exact solutions for the flow of second grade MHD Fluid Via Prescribed Vorticity,
Manoj Kumar**,** **Sayantan Sil** and C. Thakur
Acta Ciencea Indica, **40**, (1), 123-133, **2014**.

2. Solution of unsteady second grade aligned MHD fluid flow having prescribed vorticity distribution function,
Manoj Kumar**, Sayantan Sil** and Ramashankar Sharma
Bulletin of Calcutta Mathematical Society, **105** (6), 445-462, **2013**.

1. Hodograph transformation in constantly inclined two phase MFD flows through porous media,
Manoj Kumar**, Sayantan Sil** and C. Thakur
International Journal of Mathematical Archive, **4** (7), 42-47, **2013**.

8. List of Publications in Conference Proceedings:

S.N.	Title / Authors / Name of Conference / Place/Year

1. Solution of non-Newtonian transverse fluid flows through porous media
Sayantan Sil, Manoj Kumar and C. Thakur
Proceedings of 57th Congress of Indian Society of Theoretical Applied Mechanics (ISTAM) (An International Meet) At Defence Institute of Advanced Technology, Pune, 17-20 December 2012.

9. List of Papers presented in International/ National Conferences

(a) International Conferences

S.N.	Title / Authors / Name of Conference / Place/Year

9. Variably Inclined MHD Flow Through Porous Media: Exact Solution Using the Hodograph Transformation Method
Dinesh Kumar Monda, **Sayantan Sil** and C. Thakur
2nd **Interdisciplinary International Conference on Emerging Sustainable Technologies, Policies and Methodologies (IICESTPM-2024),** Marwari College, Ranchi, November 30-December 1, **2024**.

8. Magnetographic Analysis for Exact Solution of Variably Inclined Rotating MHD Flows Through Porous Medium
Sayantan Sil and Birendra Kumar Vishwakarma
1st International Conference on Advances in Novel Materials: Towards Sustainable Future (ICAN-2024), **St. Xavier's College, Ranchi**, January **2024**.

7. Exact Solution of Plane Magnetohydrodynamic (MHD) Micropolar Fluid Flow Through Porous Medium
Sayantan Sil
An Interdisciplinary International Conference on Emerging Sustainable Technologies, Policies and Methodologies (IICESTPM-2023), Marwari College, Ranchi, May **2023**.

6. A class of Exact Solution of MHD orthogonal Rotating flow in Magnetograph Plane
Sayantan Sil, Mantu Prajapati and Manoj Kumar
International Conference on the Ancient Indian Knowledge System for Holistic Development, Department of Physics and Internal Quality Assurance Cell, Dr. C. V. Raman University, Bilaspur, Chattishgarh in association with IAPT and Raman Center for Science Communication January **2022**.

5. Exact solution of unsteady transverse MHD flow in rotating frame by hodograph transformation,
Sayantan Sil, Birendra Kumar Vishwakarma and Manoj Kumar
International Conference on "Recent Advances in Basic and Applied Sciences" organized by Faculty of Sciences, Baba Mastnath University, Rohtak, 27th-28th August, **2021**.

4. Hodographic study of a second grade electrically conducting fluid with Hall Effect through porous media,

Sayantan Sil and Manoj Kumar
The 65th Congress of ISTAM (An international conference) as per the recognition by International Union of Theoretical and Applied Mechanics (IUTAM) held at GITAM (Deemed to be University) – Hyderabad, December, **2020**.

3. Solution of unsteady second grade aligned MHD fluid flow through porous media having prescribed vorticity function,
Sayantan Sil, Manoj Kumar and C. Thakur
The 58th Congress of ISTAM (An international conference), Department of Aerospace and Applied Mechanics, Bengal Engineering and Science University, Shibpur, Howrah, West Bengal, December, **2013**.

2. Solution of Non-Newtonian Fluid Flows Through Porous Media by Hodograph Transformation Method,
Sayantan Sil and Manoj Kumar
International Congress on Innovations in Science, Technology and Management (ISTM-2013), Jharkhand Rai University, Ranchi, June, **2013**.

1. Solution of Non-Newtonian MHD Transverse Fluid Flows Through Porous Media,
Sayantan Sil, Manoj Kumar and C. Thakur
The 57th Congress of ISTAM (An international conference), Defense Institute of Advanced Technology, Pune, December, **2012**.

(b) National Conferences

S.N.	Title / Authors / Name of Conference / Place/Year

13. An overview of E-learning: Challenges and opportunities in India
Sayantan Sil
Multidisciplinary National Seminar on Contemporary Research System in India and Changing Scenario of Present Paradigms (CRSICSPP-2023), S.S. L. N. T. Mahila College, Dhanbad in association with TOUCAN Research and Development, Bengaluru, Karnataka, June **2023**.

12. A class of exact solutions of MHD fluid through porous media with Hall effect and variable permeability using inverse method,
Santosh Kumar Singh, **Sayantan Sil** and Manoj Kumar
National Conference on Emerging in Research on Microwave Remote Sensing Dielectric Behaviour of Materials & Wireless communication, Dr. C. V. Raman University, Bilaspur, Chattishgarh, January **2020**.

11. Solution of MHD fluid flows in a rotating frame by application of Martin's method,
Sayantan Sil, Mantu Prajapati and Manoj Kumar
Recent Trends in Research in Applied Sciences: An Interdisciplinary Approach (NCRTRAC-2018), Department of Physics, Ganesh Lal Agarwal College, Medininagar, Palamu, Jharkhand, December **2018**.

10. Exact Solution of Plane Micropolar Fluid Through a Porous Medium Using Hodograph Transformation,
Sayantan Sil, Mantu Prajapati and Manoj Kumar
XXXIII Annual IAPT Convention 2018 & National Symposium on Innovations and Excellence in Physics Teaching & *Research*, University Department of Physics, Ranchi

University Ranchi & Indian Association of Physics Teachers (IAPT), October **2018**.

9. Inverse solution of MHD fluid flow through porous media with variable permeability, Mantu Prajapati, **Sayantan Sil** and Manoj Kumar
National Seminar on Recent Advances in Physical Sciences (RAPS-2018), P.K. Roy Memorial College, Dhanbad in collaboration with B.I.T. Sindri, Dhanbad, January **2018**.

8. Analysis of two phase MFD rotating flow through porous media, **Sayantan Sil**, Mantu Prajapati and Manoj Kumar
National Seminar on Recent Advances in Physical Sciences (RAPS-2018), P.K. Roy Memorial College, Dhanbad in collaboration with B.I.T. Sindri, Dhanbad, January **2018**.

7. Health hazards of Humans due to cell phones and cell towers, Sarita Srivastava, **Sayantan Sil** and Manoj Kumar
National Seminar on "Effect of Mobile Phone Radiation on Plant Human and Other Animal, Chas College, Chas, Bokaro, April **2016**

6. Exact Solution of two phase rotating MHD flows through Porous media, **Sayantan Sil** and Manoj Kumar
Convergence of Science* and *Technology, Cambridge Institute of Technology, Ranchi, Jharkhand, February **2016**.

5. Global Warming: Causes, Impact and Remedy
Sayantan Sil and Manoj Kumar
Environment Conservation, Sustainable Development and Political Responsibility, Kartik Oraon College, Gumla, Jharkhand, March **2015**.

4. Nuclear Energy versus Environment Conservation,
Sayantan Sil and Manoj Kumar
Environment Conservation, Sustainable Development and Political Responsibility, Kartik Oraon College, Gumla, Jharkhand, March **2015**.

3. A Class of Exact Solution for Steady Plane Rotating Aligned MHD flows,
Sayantan Sil and Manoj Kumar
National Conference on "Material Science for Energy Harvesting" (MSEH), Department of Physics, Jubilee College, Bhurkunda, January **2015**.

2. On steady plane Magnetohydrodynamic viscous fluid flow through porous media,
Manoj Kumar and **Sayantan Sil**
National Conference on Industrial Mathematics & Soft Computing-2012, Department of Mathematics, School of Applied Sciences, KIIT University , Bhubaneswar, Odisha, May **2012**.

1. Two Phase MFD Flows through Porous Media: An Exact Solution
Sayantan Sil
Mathematical Modelling and Numerical Simulation of Physical Phenomena,
Department of Mathematics and Physics, Achhruram Memorial College, Purulia, West Bengal in collaboration with Netaji Subhash Ashram Mahavidyalaya, Suisa, Purulia
March, 2012.

10. Details of Ph.D. Supervision

S. N.	Student Name	Registration Date	Status
1.	Mr. Birendra Kumar Vishwakarma	September, 2020	Ongoing

11. Training Courses, Teaching-Learning Evaluation, Faculty Development Programmes

1.	UGC-Sponsored 54th Orientation Programme	03.07.2009 to 30.07.2009	UGC-Academic Staff College, Ranchi University Ranchi
2.	UGC-Sponsored Refresher Course in "Experimental Physics"	17.02.2011 to 09.03.2011	UGC-Academic Staff College, Ranchi University Ranchi
3.	UGC-Sponsored Refresher Course in "Basic Science (Phy.,Chem.,Math., Statistics)"	04.03.2013 to 24.03.2013	UGC-Academic Staff College, Ranchi University Ranchi
4.	Science Academy's Refresher Course on "Differential Equations and their Applications in Science and Engineering"	04.07.2016 to 16.07.2016	Indian School of Mines, Dhanbad
5.	Refresher in Physics with Special Focus on Nano Biotechnology	25.05.2017 to 14.06.17	Indian Institute of Technology(ISM) Dhanbad
6.	UGC-Sponsored Refresher Course in "Information Technology"	04.01.2019 to 24.01.2019	UGC-Human Resource Development Centre, Ranchi University Ranchi
7.	Online FDP programme on Latex	13.07.2020 to 19.07.2020	Jamshedpur Women's College, Jamshedpur and Spoken Tutorial, IIT Bombay
8.	Faculty Development Programme on Building Competencies for Online Teaching	03.08.20220 to 07.08.2020	National Institute of Educational Planning and Administration (NIEPA)

9.	SWAYAM ARPIT ONLINE COURSE Introduction To Quantum Physics and Its Applications	01.12.2020 to 31.03.2021	Swayam Arpit Online Course for Career Advancement Scheme(CAS) promotion, IIT, Bombay
10.	Professional Development Programme on 'Implementation of NEP2020 for University and College Teachers'	09.09-2023 to 17.09.2023	Indira Gandhi National Open University
11.	Refresher in Advanced Concepts in Biophysics and Soft Matter: Foundations and Frontiers	18.10.2024 to 29.10.2024	Indian Institute of Technology(ISM) Dhanbad

12. Academic / Administrative Engagements

- Nodal Officer RUSA of S.S.L.N.T. Mahila College from November 2015 to April 2017.
- Coordinator Spoken Tutorial Programme for College, PKRMC.
- Member NAAC Steering Committee, PKRMC.
- Member RUSA Cell, PKRMC.
- Ex-Member Building Committee, PKRMC.
- Ex-Member Purchase Committee, PKRMC.
- Coordinator IT Cell, PKRMC.
- Coordinator IQAC, PKRMC.
- Coordinator Website Committee, BBMKU.
- Coordinator BCA, PKRMC.

13. Membership

- Life Member Indian Society of Theoretical and Applied Mechanics (ISTAM) (Membership No. L/819).
- Life Member Indian Association of Physics Teachers (Membership No. 12089L8046).