

PROFORMA FOR BIO-DATA

1. Name and full correspondence address: **Dr. Rajnarayan Saha**

Professor, Department of Chemistry, National Institute of Technology Durgapur (NIT Durgapur), Mahatma Gandhi Avenue, Durgapur, West Bengal, Pin – 713209

2. Email Id and Contact numbers: rajnarayan.saha@ch.nitdgp.ac.in, Mobile: 9434788063

3. Institution: **National Institute of Technology Durgapur (NIT Durgapur)**

4. Date of Birth: **02/01/1970**

5. Gender (M/F/T): **M**

6. Category Gen/SC/ST/OBC : **SC**

7. Whether differently abled (Yes/No) : No

8. Academic Qualification

	Degree	Year	Subject	University/institution	% Marks
1	M.Sc.	1994	Chemistry	Burdwan University	First Class (67.8%)
2	M.Tech	1997	Environmental Science and Engineering	IIT Bombay	First Class (8.22)
3	PhD	2003	Wastewater Treatment	IIT Bombay	Awarded (2003)

9. **Ph.D thesis details:**

Title: “Two Stage Treatment of Reactive Dye Wastewaters by Oxidation and Adsorption Methods”

Guide’s Name: **Prof. H. Veeramani**

Institute: Department: Centre for Environmental Science and Engineering (CESE), **Indian Institute of Technology Bombay (IIT-Bombay)**

Year of award: 2003

10. Work experience (in chronological order).

S. No.	Positions Held	Name of the institute	From	To	Pay Scale
1	Lecturer and Sr. Lecturer	The University of Burdwan	04.09.2001	03.04.2007	(i) 8000-275-13,500 (ii) 10,000-325-15200
2	Sr. lecturer, Assistant Professor, Associate Professor and Professor	NIT Durgapur	04.04.2007	Till date	(i) 10,000-325-15200 (ii) PB-3 with AGP of 8000/ (iii) Level 13A as per 7 th PC (iv) Level 14A

11. Professional Recognition/ Award/ Prize/ Certificate/Fellowship received by the applicant.

Sl. No.	Name of the Award	Awarding Agency	Year
1	GATE scholarship	MHRD, GOI	1995 (securing 99.51 percentile)
2	Fellowships received for M. Tech degree	MHRD, GOI	1995
3	Fellowships received for Ph.D degree	MHRD, GOI	1997
4	UGC-NET	UGC, GOI	2000
5	Best research papers award	VNITNagpur	2013
6	Best Poster papers award	NIT Rourkella	2014
7	Best research papers award	NIT Durgapur	2014

12. Publications (Last Five years)

Sl. No	Author(s)	Title	Name of Journal	Volume	Page	Year
1	N Bhattacharjee, I Som, R Saha* & S Mondal	A critical review on novel eco-friendly green approach to synthesize zinc oxide nanoparticles for photocatalytic degradation of water pollutants	International Journal of Environmental Analytical Chemistry	https://doi.org/10.1080/03067319.2021.2022130	1-28	2022
2	T kamilya, S Mondal & R Saha	Effect of magnetic field on the removal of copper from aqueous solution using activated carbon derived from rice husk	Environmental Science and Pollution Research	29 (4)	20017–20034	2022
3	Sucharita Chakraborty, Mouni Roy, & Rajnarayan Saha	Cost-effective synthesis method of facile environment friendly SnO ₂ nanoparticle for efficient photocatalytic degradation of water contaminating compound	Water Science and Technology.	81 (3)	508–517	2020
4	Sayanta Sikdar & Ananya Ghosh & Rajnarayan Saha	Synthesis of MgO micro-rods coated with charred dextrose and its application for the adsorption of selected heavy metals from synthetic and real groundwater	Environmental Science and Pollution Research	27(15)	17738–17753	2020
5	Ipsita Som, Mouni Roy, and Rajnarayan Saha	Advances in nanomaterial based water treatment approaches for photocatalytic degradation of water pollutants	Chem Cat Chem 10.1002/cctc.201902081	12 (13)	3409-3433	2020
6	Manash Gope a, b , Reginald Ebhin Masto c , Aman Basu a , Debopriya Bhattacharyya a , Rajnarayan Saha b , Raza Rafiqul Hoque d ,	Elucidating the distribution and sources of street dust bound PAHs in Durgapur, India: A probabilistic health risk assessment study by Monte-Carlo simulation*	Environmental Pollution	267	115669	2020

Sl. No	Author(s)	Title	Name of Journal	Volume	Page	Year
	P.S. Khillare e , Srinivasan Balachandran a, *					
7	Saswata Sahu, Jitamanyu Chakrabarty and Rajnarayan Saha*	Degradation of Nitro- aromatic Compounds using Fenton's Oxidation	J. Indian Chem. Soc.	Vol. 97, No. 10b	1-7	2020
8	Ananya Ghosh & Nilesh Kumar Meshram & Rajnarayan Saha	Glycerol-mediated synthesis of nanoscale zerovalent iron and its application for the simultaneous reduction of nitrate and alachlor	Environmental Science and Pollution Research	6	11951- 11961	2019
9	Pobi, K. K., Nayek, S., Gope, M., Rai, A. K., & Saha, R. N.	Sources evaluation, ecological and health risk assessment of potential toxic metals (PTMs) in surface soils of an industrial area, India	<i>Environmental Geochemistry and Health,</i>	42(12)	4159- 4180	2020
10	Ebenezer Olubunmi Ige, Ravi Kumar Arun, Preeti Singh, Manash Gope, Rajnarayan Saha , Nripen Chanda, Suman Chakraborty	Water desalination using graphene oxide-embedded paper microfluidics	Microfluidics and Nanofluidics	23(26)	1-8	2019
11	Ananya Ghosh, Sourav Biswas, Sayanta Sikdar, Rajnarayan Saha	Morphology Controlled Fabrication of Highly Permeable Carbon Coated Rod-Shaped Magnesium Oxide as a Sustainable Arsenite Adsorbent	Industrial & Engineering Chemistry Research	58(24)	10352- 10363	2019
12	Krishnendu Kumar Pobi, Biplab Mondal, Sumanta Nayek, Apurba K. Patra and Rajnarayan Saha	Efficient removal of Hg ²⁺ , Cd ²⁺ and Pb ²⁺ from aqueous solution and mixed industrial wastewater using a designed chelating ligand, 2- pyridyl-N-(20 - methylthiophenyl) methyleneimine (PMTPM)	Water Science & Technology	79 (6)	1092- 1101	2019
13	K. K. Pobi, S. Satpati, S.Dutta, S. Nayek. R. N. Saha , S Gupta	Sources evaluation and ecological risk assessment of heavy metals accumulated within a natural stream of Durgapur industrial zone, India, by using multivariate analysis and pollution indices	Applied Water Science	(2019) 9:58 https://doi.org/10.1007/s13201-019-0946-4	3-16	27 March 2019
14	Suvanka Dutta, Sourav Biswas, Ram Chandra Maji, Rajnarayan Saha	Environmentally Sustainable Fabrication of Cu _{1.94} S-rGO Composite for Dual Environmental Application: Visible Light Active Photocatalyst and Room Temperature Phenol Sensor	ACS Sustainable Chemistry & Engineering	6 (1)	835–845	2018
15	Sarkar Soma, Roy	Thiophene Appended Dual Fluorescent Sensor for	Journal of	28	427–437	2018

Sl. No	Author(s)	Title	Name of Journal	Volume	Page	Year
	Swapnadip Saha R. N. and Panja Sujit S	Detection of Hg ²⁺ and Cysteamine,	Fluorescence			
16	Humayun Kabir, Ananya Ghosh, Suvanka Dutta, Rajnarayan Saha	Effect of solvent viscosity on the properties of nanoscale zero valent iron: Insights into alachlor degradation	Journal of Water Process Engineering	25	164-172	2018
17	Soma Sarkar, Tapashree Mondal, Swapnadip Roy, Rajnarayan Saha , Ashish Kumar Ghosh and Sujit S. Panja	A multi-responsive thiosemicarbazone-based probe for detection and discrimination of group 12 metal ions and its application in logic gates,	New Journal of Chemistry	42,	15157-15169	2018
18	Dulal Das, Sanchita Baitalik, Barun Haldar, Rajnarayan Saha , Nijhuma Kayal.	Preparation and characterization of macroporous SiC ceramic membrane for treatment of waste water.	J Porous Mater.	25 (10)	1-11	2017
19	I Mukherjee, A Mishra, R Saha , S Chatterjee.	Efficient Degradation of Endocrine Disruptors Using 1D and 3D Copper (I) Oxide Nanostructures	Chemistry Select	2 (22)	6388-6398	2017,
20	A Ghosh, S Dutta, I Mukherjee, S Biswas, S Chatterjee, R Saha	Template-free synthesis of flower-shaped zero-valent iron nanoparticle: Role of hydroxyl group in controlling morphology and nitrate reduction	Advanced Powder Technology (ISN: 0921-8831)	28 (9),	2256-2264	2017
21	Suvanka Dutta, Sriparna Chatterjee, Indrani Mukherjee, Rajnarayan Saha , Bimal P. Singh	Fabrication of ZnS hollow spheres and RGO-ZnS nanocomposite using Cysteamine as novel sulphur source: Photocatalytic performance on industrial dyes and effluent	Industrial & Engineering Chemistry Research	56 (16),	4768-4778	2017
22	S Chakraborty, S Dutta, RN Saha , SC Moi, D Sukul, SS Panja	Efficacy of a Photo-catalyst towards the degradation of a pharmaceutical compound, 4-Aminopyridine by application of response surface methodology	Desalination and Water Treatment	76	389-397	2017
23	Sukanya Chandra, Rajnarayan Saha , Parimal Pal.	Assessment of arsenic toxicity and tolerance characteristics of bean plants (<i>Phaseolus vulgaris</i>) exposed to different species of arsenic	Journal of Plant Nutrition	10.1080/01904167.2017.1385801		2017

13. Detail of patents : NA

14. Books/Reports/Chapters/General articles etc. (Last Five years)

S. No.	Name of book/ monograph/ Book chapters	Name of Coauthor, if any	Publisher with address	Year of Publication
1	“Removal of heavy metals from industrial effluents by using Biochar”	Manash Gope and Rajnarayan Saha	Intelligent Environmental Data Monitoring for Pollution Management” ISBN: 9780128196717 Elsevier Science	2021 (Page No. 25-48)
2	Dyes and their removal technologies from wastewater: A Critical review	Mouni Roy and Rajnarayan Saha	Intelligent Environmental Data Monitoring for Pollution Management” ISBN: 9780128196717 Elsevier Science	2021 (Page No. 127-160)
3	Treatment of Whey Water from Food Processing Units Using Hybrid Methods	Britika Mazumdar , Gargi Biswas , Rajnarayan Saha , and Susmita Dutta,	Re-Use and Recycling of Materials Solid Waste Management and Water Treatment ISBN:978-87-7022-058-3(Hardback) 978-87-7022-057-6 (Ebook) River Publishers Alsbjergvej 10 9260 Gistrup Denmark	2019

15. Any other Information :

The PI has carried out extensive research works on wastewater treatment by using Physico-chemical (Advanced Oxidation Processes like Fenton’s, Photo and Photo-Fenton’s oxidation and Coagulation) and Biological (Activated Sludge Process) treatment methods under various capacities (M.Tech., Ph.D. programmes) at IIT Bombay. Presently, the applicant is actively engaged in under graduate and post-graduate teaching along with actively participated in Research in the area of Synthesis and application of nanomaterials for the reduction of environmental contaminants and development of a suitable treatment scheme using Photo-Fenton’s Oxidation, Lime & Biological processes for the treatment of industrial wastewater like Coke Oven, Petrochemical, Textile and Dye Wastewater. These combinations of interests and experiences led him to apply for the current research program. He therefore has relevant experiences which will enable him to the successful completion of the proposed project.

Some of the academic achievements by the applicant as follows

- No. of Ph.D Students awarded: **15**, No. of Ph.D students working: **02**,
- No. of N-PDF Completed: **02**
- Supervised good numbers of M.Sc., M.Phil and M.Tech Dissertations work in the area of Environmental Chemistry and wastewater treatment.

- Presently supervising two M.Tech Dissertation work in the area in wastewater treatment
- No. of Workshop/winter school/ summer school/Seminar/Inspire camp organised: 10.
- Several sponsored research project completed sponsored by UGC, DST, GOI.
- visited several countries like USA, Germany, Netharlands, Italy, Oman and Spain for his collaborative research and academic activities.

Detail of Projects under Implementation

Sl No.	Title	Cost of Lakh	Month of Submission	Role as PI/Co-PI	Agency
1	Design and Development of Two Stage Efficient Laboratory Wastewater Treatment (Advanced Oxidation and Activated Sludge Process) Plant for Producing Environmentally Safe and Clean Water for further uses	3.15	Ongoing	PI	Science & Technology and Biotechnology Department, Govt. of West Bengal (Project Memo No. 47(Sanc.)/ST/P/S&T/15G-17/2018 dt. 30.01.2019)

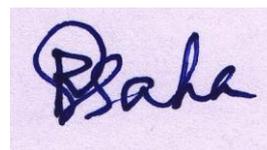
Detail of Projects Completed during the last 5 years

S No.	Title	Cost of Lakh	Month of Completion	Role as PI/Co-PI	Agency
1	Development of a Remedial Scheme for the Contaminated Ground Water Specially for Pesticides, Nitrate and Arsenic with Surface Modified Nanoscale Zero Valent Iron (nZVI) and Nano-Fenton's Oxidation.	28.80	31.07.2017	PI	DST, GOI
2	The Impact of Various Biochars on the Bioaccessibility and Bioaccumulation of Polycyclic Aromatic Hydrocarbons (PAHs) and Potentially Toxic Elements (PTEs) in Contaminated Soil. NPDF Fellow- Dr. Manash Gope	19.2	03/08/2019	Mentor	SERB, DST, GOI
3	Nano porous Transition Metal Based Semiconductors towards	19.2	29.0.2019	Mentor	SERB, DST, GOI

S No.	Title	Cost of Lakh	Month of Completion	Role as PI/Co-PI	Agency
	Catalysis and in Electrochemical Applications (NTC) NPDF Fellow- Dr. Mouni Roy				
4	Environmental Geochemistry & Water Quality Modelling of Saheb Bandh Lake, Purulia, West Bengal an approach towards Lake Restoration	5.98	2020	Co-PI	Department of Higher Education, Science & Technology and Biotechnology, Govt. of West Bengal
5	Spatial Distribution of Uranium in Three Districts (South 24 Pargana, Purba Mednipur and Pashim Medinipur) of West Bengal	27.52	2021	Co-PI	BRNS, DAE, GOI
6	Emerging Contaminants and their accumulation in ecosystem of lower stretch of Hooghly River	9.98	2022	Co-PI	Department of Higher Education, Science & Technology and Biotechnology, Govt. of West Bengal

DECLARATION

1. I hereby declare that all the statements made in my curriculum vitae are true to the best of my knowledge and belief.
2. I am aware that my application is liable to be rejected, if the information given above is incomplete or found to be incorrect.



Date: 27.01.2023

Place: Chemistry, NITD, W.B., INDIA

Dr. Rajnarayan Saha