

CURRICULUM VITAE

NAME: Dr. PARTHA KUMBHAKAR

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Career Objective:

My long-term goals involve growing with an organization where I can have excellent work culture, continue to learn, take on additional responsibilities, and contribute as much value as I can.

Personal Details:

FATHER'S NAME: -MR. GOPINATH KUMBHAKAR

MOTHER'S NAME: -MRS. KAJAL KUMBHAKAR

D.O.B: -22/06/1992

GENDER-MALE

NATIONALITY:-INDIAN.

BLOOD GROUP: -'B' (+).

HOME ADDRESS: -VILL: BIRBHANPUR, P.O.: DURGAPUR, P.S: COKE-OVEN DURGAPUR-713202,
DIST: PASCHIM BARDHAMAN, WEST BENGAL, INDIA

Academic Qualification:

Course/ Examination	Board/University	Percentage Obtained	Institute	Year of Passing
RESEARCH ASSOCIATE	INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR		INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR-(US Air force granted Project- 3DP)	2020- 2022
Ph.D. in PHYSICS	NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR	Awarded	NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR	2020
B. Ed. (PHYSICAL SCIENCE)	THE UNIVERSITY OF BURDWAN	72.4%	DURGAPUR B.Ed. COLLEGE.	2015
M.Sc. (PHYSICS)	VISVA-BHARATI	68.40%	VISVA-BHARATI	2014
B. Sc. (PHYSICS HONOURS)	THE UNIVERSITY OF BURDWAN	57.375%	DURGAPUR GOVERNMENT COLLEGE	2012
12 th	WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION	81.80%	DURGAPUR PROJECT BOYS' HIGH SCHOOL	2009
10 th	WEST BENGAL BOARD OF SECONDARY EDUCATION	82.875%	DURGAPUR PROJECT BOYS' HIGH SCHOOL.	2007

Research Work:

Thesis Title: “*Studies on Synthesis, Optical and Photocatalytic Properties of Some Nanostructures of ZnO and ZnS and their Nanocomposites*” under the guidance of **Prof. P. Kumbhakar**, Department of Physics, NIT Durgapur.

Research Interest:

- Advanced 2D Materials
- Energy harvesting and energy generation
- Linear and nonlinear optical properties
- Nanotechnology, nanostructured materials, and composites
- 3D printing technology and its applications
- Catalysis
- Optical bio-sensor

Publication: International and National Journal: <https://scholar.google.com/citations?user=8K77U9AAAAAJ&hl=en>

SL. NO	TITLE	JOURNAL	IMPACT FACTOR	AUTHORS	Volume And Page No.	YEAR
1.	Two-dimensional Cobalt Telluride as Piezo-tribogenerator	Nanoscale	7.79	S. Demiss, R. Tromer, C. C. Gowda, C. F. Woellner, O. E. Femi, A. K. Roy, P. Pandey, D. S. Galvao*, P. M. Ajayan*, P. Kumbhakar* , C. S. Tiwary*	Accepted	2022
2.	Photon and vibration synergism on planar defects induced 2D-graphitic carbon nitride for ultrafast remediation of dyes and antibiotic ampicillin	Journal of Materials Science	4.22	S. K. Kuila, P. Kumbhakar , C. S. Tiwary, T. K. Kundu	Accepted	2022
3.	Atomically thin gallium telluride nanosheets: A new 2D material for efficient broadband nonlinear optical devices	Applied Physics Letters	3.791	T. Singh, M. Karmakar, P. Kumbhakar* , C. S. Tiwary*, P. K. Datta*	120, 021101	2022
4.	Enhancement in magnetization of two-dimensional cobalt telluride and its magnetic field-assisted photocatalytic activity	Applied Physics A	2.584	S. Demiss, R. Tromer, S. Siddique, C. F. Woellner, O. E. Femi, M. Palit, A. K. Roy, P. Pandey, D. S. Galvao, P. Kumbhakar* , C. S. Tiwary*	Accepted	2022
5.	Conducting Graphene Synthesis from Electronic Waste	ACS Sustainable Chemistry & Engineering	8.198	A. Bajpai, P. Kumbhakar , C. S. Tiwary, K. Biswas	9, 14090-14100	2021

6.	Emerging Two-Dimensional Tellurides	Materials Today	31.05	S. Siddique, C. C. Gowda, S. Demiss, R. Tromer, S. Paul, K. K. Sadasivuni, O. E. Femi, A Chandra, V. Kochat, D S. Galvão, P. Kumbhakar* , R Mishra, P M. Ajayan, C. S Tiwary*	51, 402-426	2021
7.	Current advances in the bio-fabricated quantum dots emphasising the mechanism study to diversify the catalytic and biomedical applications	Dalton Transactions	4.052	R. Mahle, P. Kumbhakar , D. Nayar, T. N Narayanan, K. K. Sadasivuni, C. S. Tiwary, R. Banerjee	50, 14062-14080	2021
8.	Advance optical properties and emerging applications of 2D materials	Frontiers in Materials	3.515	P. Kumbhakar , C. C. Gowda, C. S. Tiwary	8, 1-16	2021
9.	Real-time quality monitoring and organic pollutants degradation of Water using atomically thin Magnesiochromite	Materials Research Bulletin	4.7	P. L. Mahapatra, P. Kumbhakar , B. Lahiri, S. K. Sinha, C. S. Tiwary	146, 111590	2022
10.	Review of strategies towards the development of alloy two-dimensional (2D) transitional metal di-chalcogenides	iScience	5.08	A. K. Singh, P. Kumbhakar , A. Krishnamoorthy, A. Nakano, K. K. Sadasivuni, P. Vashishta, A. K. Roy, V. Kochat, C. S. Tiwary	24, 103532	2021
11.	Quantifying Instant Water Cleaning Efficiency Using Zinc Oxide decorated complex 3D Printed Porous Architectures	Journal of Hazardous Materials	10.588	P. Kumbhakar , R. Ambekar, P. L. Mahapatra, C. S. Tiwary*	418, 126383	2021
12.	Development of schwarzite-based moving bed 3D printed water treatment system for nano plastics remediation	RSC Advances	3.361	B. Gupta, R. S. Ambekar, R. M. Tromer, P. S. Ghosal, R. Sinha, A. Majumder, P. Kumbhakar , P. M. Ajayane, D. S. Galvaoc, A. K. Gupta, C.S. Tiwary	11, 19788-19796	2021
13.	Scalable Synthesis of Atomically Thin Gallium Telluride Nanosheets for Supercapacitor Applications	ACS Applied Nano Materials	5.097	S. Siddique, C. C. Gowda, R. Tromer, S. Demiss, A. R. Singh G. A. R. S. Gautam, O. E. Femi, P. Kumbhakar* , D. S. Galvao*, A. Chandra*, C. S. Tiwary*	4, 4829-4838	2021
14.	Manoeuvring natural scatterer system in random lasing action and demonstration of speckle free imaging	OSA Continuum	1.864	A. Dey, A.Pramanik, P. Kumbhakar , S. Biswas, S. K. Pal, S. Ghosh, P. Kumbhakar	6, 1712-1722	2021

15.	Development of Environment Friendly Water-Based Self-Rechargeable Battery	Renewable Energy	8.001	S. Karmakar, A. Pramanik, P. Kumbhakar , R. Sarkar, P. Kumbhakar	172, 1184-1193	2021
16.	Revisiting Quasicrystals for the Synthesis of 2D Metals	Transactions of the Indian Institute of Metals	1.499	T. P. Yadav, P. Kumbhakar , N. K. Mukhopadhyay, D. S. Galvao, P. M. Ajayan, S. Ranganathan, K. Chattopadhyay, C. S. Tiwary	Accepted	2021
17.	Investigating morphology-dependent antibacterial property of ZnO nanoparticles and developing an insight into oxidative stress generation and cellular response	Biologia	1.35	R. D. Singh, P. Kumbhakar , S. Pal, S. K. Khannam, P. Kumbhakar	76, 1339-1348	2021
18.	Reversible temperature-dependent photoluminescence in semiconductor quantum dots for the development of a smartphone-based optical thermometer	Nanoscale	7.79	P. Kumbhakar , A. R. Karmakar, G. P. Das, J. Chakraborty, C. S. Tiwary, PK	13, 2946-2954	2021
19.	Convert Waste Petroleum-Coke to Multi-Heteroatom Self -Doped Graphene and Its application as Supercapacitors	Emergent Materials	NA	D. Mandal, P. L. Mahapatra, R. Kumari, P. Kumbhakar , A. Biswas, B. Lahiri, A. Chandra, C. S. Tiwary	4, 531-544	2021
20.	Emerging 2D metal oxides and their applications	Materials Today	31.05	P. Kumbhakar , C. C. Gowda, P. L. Mahapatra, M. Mukherjee, K. D. Malviya, M. Chaker, A. Chandra, B. Lahiri, P. M. Ajayan, D. Jariwala, A Singh, C. S. Tiwary	45, 142-168	2021
21.	Confinement Aided Simultaneous Water Cleaning and Energy Harvesting Using Atomically Thin Wurtzite (Wurtzene)	Advanced sustainable systems	4.869	P. Kumbhakar , M. Mukherjee, A. Pramanik, S. Karmakar, A. K. Singh, C. S. Tiwary, P. Kumbhakar	5, 2000189	2020
22.	Copper Nanoparticle–Graphene Composite-Based Transparent Surface Coating with Antiviral Activity against Influenza Virus	ACS Applied Nano Materials	5.097	P. Kumbhakar , I. D. Jana, S. Banerjee, C. C. Gowda, N. Kedia, S. K. Kuila, S. Banerjee, N. C. Das, A. K Das, I. Manna, C. S. Tiwary A. Mondal	4, 352-362	2020
23.	External feedback assisted reduction of the lasing threshold of a continuous wave random laser in a dye doped polymer film and demonstration of speckle free imaging.	Journal of Luminescence	3.599	A. Pramanik, S. Biswas, P. Kumbhakar , P. Kumbhakar	230, 117720	2020
24.	A study of microbially fabricated bio-conjugated quantum dots for pico-molar sensing of H ₂ O ₂ and glucose	Biomaterials Science	6.843	R. Mahle, D. Mandal, P. Kumbhakar , A. Chandra, C. S. Tiwary R. Banerjee	9, 157-166	2021

25.	2D Hexagonal Boron Nitride coated cotton fabric with Self-extinguishing property	ACS Applied Materials & Interfaces	9.229	R. Ambekar, A. Deshmukh, M. S. Villagrán, R. Das, V. Pal, S Dey, J. Miller, L. D Machado, P. Kumbhakar* , C. S. Tiwary	12, 45274–45280	2020
26.	Probing the bacterial detoxification of cadmium to form cadmium sulfide quantum dots and the underlying mechanism	Materials Advances	NA	R. Mahle, P. Kumbhakar , A. Pramanik, P. Kumbhakar, S. Sahoo, R. Mukherjee, C.S. Tiwary, R. Banerjee	1, 1168–1175	2020
27.	Pulsed laser ablation in liquid: effect of laser ablation time on the photoluminescence and photocatalytic properties of ZnO@Au nanocomposite	Indian Journal of Theoretical Physics	NA	P. Kumbhakar, D. Goswami, P. Kumbhakar , S. Biswas	634, 84–101	2015
28.	Nature inspired solid–liquid phase amphibious adhesive†	Soft Matter	3.399	A. C. Chipara, G. Brunetto, S. Ozden, H. Haspelad, P. Kumbhakar , C. S. Tiwary, ... P. M. Ajayan.	16, 5854–5860	2020
29.	Photocatalytic dye Degradation under Sunlight Irradiation using Cerium Ion Adsorbed Two-dimensional Graphitic Carbon Nitride	Journal of Environmental Chemical Engineering	5.909	T. K. Kundu S. K. Kuila, R. Sarkar, P. Kumbhakar , P. Kumbhakar, C. S. Tiwary	8, 103942	2020
30.	Forster resonance energy transfer assisted white light generation and luminescence tuning in a colloidal graphene quantum dot-dye system	Journal of Colloid and Interface Science	8.128	A. Pramanik, S. Biswas, C. S. Tiwary, P. Kumbhakar , R. Sarkar, P. Kumbhakar	565, 326–336	2020
31.	Synthesis of bilayer graphene nanosheets by pulsed laser ablation in liquid and observation of its tunable nonlinearity	Applied Surface Science	6.707	A. Pramanik, S. Karmakar, P. Kumbhakar , S. Biswas, R. Sarkar, P. Kumbhakar	499, 143902	2020
32.	Resonance energy transfer-assisted random lasing in light harvesting bio-antenna enhanced with plasmonic local field.	RSC Advances	3.361	P. Kumbhakar , S. Biswas, P. Kumbhakar	9, 37705–37713.	2019
33.	Development of flexible self-charging triboelectric power cell on paper for temperature and weight sensing	Nano Energy	17.881	S. Karmakar, P. Kumbhakar , K. Maity, D. Mandal, P. Kumbhakar	63, 103831	2019
34.	Tailoring of structural and photoluminescence emissions by Mn and Cu co-doping in 2D nanostructures of ZnS for the visualization of latent fingerprints and generation of white light	Nanoscale	7.790	P. Kumbhakar , S. Biswas, P. Pandey, C.S.Tiwary, P. Kumbhakar	11, 2017–2026	2019
35.	In-situ synthesis of rGO-ZnO 5anocomposites for demonstration of sunlight driven enhanced photocatalytic and self-cleaning of organic dyes and tea stains of cotton fabrics	Journal of Hazardous Materials	10.588	P. Kumbhakar , A. Pramanik, S. Biswas, A. K. Kole, R. Sarkar, P. Kumbhakar	360, 193–203	2018
36.	Tuning of Defects by Simple Thermal Annealing and Observation of High Photocatalytic Activity in	Optik International Journal for	2.443	P. Kumbhakar , S. Biswas, P. Kumbhakar	154, 303–314	2018

	Chemically Synthesized Ethylene Glycol Capped ZnO Nanorods	Light and Electron Optics				
37.	Near white light emission and enhanced photocatalytic activity by tweaking surface defects of coaxial ZnO@ZnS core-shell nanorods	Journal of Applied Physics	2.328	P. Kumbhakar S. Biswas, C. S. Tiwary, P. Kumbhakar	121, 144301- 144312	2017

Publication: International and National Conferences

SL. NO	TITLE	CONFERENCE	AUTHORS	VOLUME AND PAGE NO	YEAR
1	Surface defects assisted near white light emission from ZnO nanorods	ASTM-2018	P. Kumbhakar, S. Biswas, P. Kumbhakar	National Conference	2018
2	Synthesis of Au decorated ZnS microsphere with visible light driven high photocatalytic activity	EMCA-2017	P. Kumbhakar, S. Biswas, P. Kumbhakar	International Conference	2017
3	UV Visible Light Driven Purification of Industrial Dye Contaminated Water by ZnO Nanostructures	IISF, 2016,	P. Kumbhakar, S. Biswas, P. Kumbhakar	India International Science Festival	2016
4	Preparation of Highly Luminescent Mn-Cu Co-doped ZnS Nanomaterial for Smartphone Based Detection of Latent Fingerprint	TMAP-2019	P. Kumbhakar, S. Biswas, C. S. Tiwary, P. Kumbhakar	Topical Meeting on Advances in Photonics	2019

Patents:

Sl. No.	Patent Title and Authors Name	Status	Details
		Applied/Granted	No. & Date of application/grant
1.	Bio-Waste Ash Based Low Cost, Light Weight, and Eco- Friendly Self-Rechargeable Battery S. Karmakar, P. Kumbhakar, A. Pramanik. P. Kumbhakar	Filed	Application No. 201931002942A dt. 24.01.2019 And published on Feb., 8, 2019 In Patent Journal

Book Chapter

Sl. No.	Title and Authors Name	Publisher	Details
1.	Green and sustainable methods of syntheses of photocatalytic materials for efficient application in dye degradation. Partha Kumbhakar, A. Pramanik, S. Biswas, A. K. Kole, R. Sarkar, C. S. Tiwary, P. Kumbhakar.	Elsevier	Photocatalytic Degradation of Dyes: Current Trends and Future Perspectives. DOI: 10.1016/C2020-0-00551-7

Achievements

Sl. No.	Media/Newspaper Coverage on	Name of the Newspaper/Media	Date of Coverage	Remarks/Reference
1.	Glowing nanoparticles help image fingerprints	Nature India	14 January 2019	doi:10.1038/nindia.2019.3
2.	Reconstructing fingerprints: The new nanomaterial may help CID go high tech	The Hindu	16 January 2019	https://mail.google.com/mail/u/0/?tab=rm&ogbl#search/the+hindu/FMfcgxwBVqQBjnKXHsFZcgWtHSkbBKg?projector=1&messagePartId=0.1
3.	Researchers come up with technology for enhanced finger printing system	The Indian Express	21 January 2019	https://in.finance.yahoo.com/news/kolkata-researchers-come-technology-enhanced-002500927.html
4.	NIT stamps its mark on fingerprint technology	Times of India	20 February 2019	https://timesofindia.indiatimes.com/city/kolkata/nit-stamps-its-mark-on-fingerprint-tech/articleshowprint/68071583.cms
5	The research activities of the Nanoscience Laboratory will be telecasted in Science Monitor (RSTV) IMAK News and Entertainment, New Delhi under news programme	"Science Monitor" for Vigyan Prasar, under the Ministry of Science and Technology, Rajya Sabha TV	23 March, 2019	
6	Daya, not getting the fingerprint? This nanomaterial may help CID go high tech	Indian science in Indian media	January 2019	

Research Collaboration (International & National):

Prof. Douglas S. Galvão, State University of Campinas, Brazil

Prof. Pathik Kumbhakar, Dept. of Physics, National Institute of Technology Durgapur, India

Prof. Chandra Sekhar Tiwary, Indian Institute of Technology Kharagpur, India

Prof. Prasanta Kumar Datta, Head, Dept. of Physics, Indian Institute of Technology Kharagpur, India

Prof. Abhishek Singh, Associate Professor, Materials Research Centre, IISc Bangalore, India

Prof. Krishanu Biswas, Indian Institute of Technology Kanpur, India

Prof. Arindam Mondal, School of Bioscience, Indian Institute of Technology Kharagpur, India

Handling Instruments:

I have the experience to handle different sophisticated instruments and data analyses such as

1. UV-vis spectrophotometer
2. PL spectrofluorometer
3. Raman spectrometer
4. Particle size analyzer
5. Optical microscopy
6. Photocatalytic reactor
7. Cyclic voltammetry
8. FTIR spectrometer

9. Femtosecond and nanosecond Laser

Software Skill: C++, MATLAB, Origin, Latex, Java, Python

Visions:

1. To develop research aptitude with graduate, postgraduate, and Ph.D. students.
2. To render the knowledge and uplift rural students.
3. To develop scientific awareness among communities.
4. Take up the responsibility for the educational uplift of the students and professional growth as an Institutional commitment.

Name, Designation and Address (along with Mobile/phone no/ email) of the referees

S. N.	Name and Designation	Title/Occupation	Address	Contact Number	Email Id
1.	Prof. P. Kumbhakar	Professor	Dept. of Physics, NIT Durgapur	9434788090	pathik.kumbhakar@phy.nitdgp.ac.in
2.	Prof. C. S. Tiwary	Assistant Professor	MME, IIT Kharagpur	8078317531	chandra.tiwary@metal.iitkgp.ac.in
3.	Prof. P. K Dutta	Professor	Dept. of Physics, IIT Kharagpur	9474069825	pkdatta.iitkgp@gmail.com

Declaration:

I hereby declare that the statements given here are true and correct to the best of my knowledge & belief and if anything is found wrong here then my candidature and appointment might be considered terminated without any notice.

Date: 4/28/2022

Place: Kharagpur

Partha Kumbhakar

Signature