Curriculum Vitae

Name : **Dr. Pradip Thakur**

College Address:

Department of Physics
Netaji Nagar College for Women
Kolkata-700092

Residential Address:

Village & P.O.- Rajarmath
District- Nadia
Pin- 741223

Contact Number : **+919830366215 / +919681720690**

Email address : **pradipthakurju@gmail.com**

Date of Birth : **10/11/1989**

Nationality : **Indian**

Professional Experience:

Designation : **Head and Assistant Professor in Department of Physics**

Institution : **Netaji Nagar College for Women, Kolkata- 700092**

Period : **04/03/2015 to present**

Academic Qualifications:

Examination/Degree	Institution/Board	Year	Marks (%)	Division
M.P.	Nahata High School / WBBSE	2005	90.25	1st
H.S.	Nahata High School / WBCHSE	2007	86.8	1st
BSc (Physics)	Jadavpur University	2010	68.25	1st
MSc (Physics)	Jadavpur University	2012	69.37	1st
NET	UGC-CSIR, Govt. of India	June, 2012	-----	UGC-JRF
Ph.D	Jadavpur University	November, 2016	-----	--------

Scholarship or Fellowship:

1. DST-INSPIRE Scholarship holder from BSc up to MSc.

2. UGC-JRF Fellowship from 03/12/2012 to 02/12/2014.

3. UGC-SRF Fellowship from 03/12/2014 to 03/03/2015.

Teaching Areas:

Heat and Thermodynamics, Classical Mechanics, Quantum Mechanics, General Properties of Matter, Optics, Electricity and Magnetism, Pumps, Gauges and Engine, Energy sources.

Research Experience:

1. UGC-JRF at Department of Physics, Jadavpur University, Kolkata- 700032 from 03/12/2012 to 02/12/2014.

2. UGC-SRF at Department of Physics, Jadavpur University, Kolkata- 700032 from 03/12/2014 to 03/03/2015.

Research Area:

Material Sciences and Green Energy (Experimental): ***Electroactive Polymers, Polymer nanocompositesthin films, High dielectric materials, Polymer based nanogenerator, Polymer based energy storage devices, Photo-supercapacitor, Self-charging Power Bank, Nanoparticles, Ceramics***

Research Publications:

***Corresponding Author**

S.No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	S. Molla, F. Khatun, U. Rajak, B. Bagchi. S. Das, **P. Thakur.***	Electroactive CTAB/PVDF compositefilm based photo-rechargeable hybrid power cell for clean energy generation and storage	Nature Scientific Reports	12	22350	2022
2.	S. Molla, F. Khatun, **P. Thakur.***	Bio-polymer poly(lactic acid) thin film-based K-ionassociated photo-rechargeable power cell	J Mater Sci: Mater Electron	33,	1864–1870	2022
3.	Md. M. Saikh, N. A. Hoque1,*, P.Biswas, W. Rahman, N. Das, , S. Das*, **P. Thakur***	Self-polarized ZrO2/PVDF-HFP Nanocomposite based Piezoelectric Nanogenerator and Single Electrode Triboelectric Nanogenerator for Sustainable Energy Harvesting from Human Movement	**Physica Status Solidi A: Applications and Materials Science**	218	9	2021
4.	U. Rajak, F. Khatun, P. Biswas, **P. Thakur***	Sustainable and superior polymeric piezoelectric nanogenerator for sensing human body vibration, air flow, and water wave	Applied Physics Letters	118	053502	2021
5.	S. Banerjee, B. Bagchi, K.Pal, S. Bhandary, A. Koola, N. A. Hoque, P. Biswas, **P. Thakur**, K.	Essential oil impregnated luminescent hydroxyapatite: Antibacterial and	Materials Science & Engineering C		111190	2020,

	Das, P. Karmakar, S. Das*	cytotoxicity studies				
6.	P. Biswas, N. A. Hoque, **P. Thakur***, Md. M. Saikh, S. Roy, F. Khatun, B. Bagchi, and S. Das	Portable Self-Powered Piezoelectric Nanogenerator and Self-Charging Photo-Power Pack Using In Situ Formed Multifunctional Calcium Phosphate Nanorod-Doped PVDF, Films	Langmuir	35(52)	17016-26	2019
7.	F. Khatun, **P. Thakur***, B. Bagchi, S. Das	Photo-charging polymeric sodium-ion cell based on YSZ/PVDF film	Applied Physics Letters	115,	183904	2019
8.	S. Roy, **P. Thakur***, N. A. Hoque, A. Kool, F. Khatun, P. Biswas, B. Bagchi, S. Das	Self-Charging Photo-Power Cell Based on a Novel Polymer Nanocomposite Film with High Energy Density and Durability	Polymer Journal (NPG)	51,	1197–1209	2019
9.	F. Khatun, **P. Thakur***, A. Kool, S. Roy, N. A. Hoque, P. Biswas, B. Bagchi and S. Das	Photo-rechargeable Organic-Inorganic Dye Integrated Polymeric Power Cell with Superior Performances and Durability	Langmuir	35 (19)	6346–6355	2019
10.	P. Biswas, N. A. Hoque, **P. Thakur***, Md. M. Saikh, S. Roy, F. Khatun, B. Bagchi, and S. Das	Highly Efficient and Durable Piezoelectric Nanogenerator and Photo-Power Cell Based on CTAB-Modified-Montmorillonite Incorporated PVDF Film	ACS Sustainable Chemistry & Engineering	7 (5)	4801–4813	2019
11.	S. Banerjee, B. Bagchi, S. Bhandary, A. Kool, N. A. Hoque, P. Biswas, K. Pal, **P. Thakur,** K. Das, P. Karmakar and S. Das	Antimicrobial and biocompatible fluorescent hydroxyapatite-chitosan nanocomposite films for biomedical applications	Colloids and Surfaces B: Biointerfaces	171	300-307	2018
12.	N. A. Hoque, **P. Thakur***, P. Biswas, Md. M. Saikh, S. Roy, B. Bagchi, S. Das and P. P. Ray	Biowaste crab shell-extracted chitin nanofiber based superior piezoelectric nanogenerator	Journal of Material Chemistry A	6	13848-13858	2018
13.	F. Khatun, **P. Thakur*,** N. A. Hoque, A. Kool, S. Roy, P. Biswas, B. Bagchi and S. Das, ,	In situ synthesized electroactive and large dielectric BaF2/PVDF nanocomposite film for superior and highly durable self-charged hybrid photo-power cell	Energy Conversion and Management	171	1083-92	2018
14.	F. Khatun, **P. Thakur***, N. A. Hoque, A. Kool, S. Roy, P. Biswas, B. Bagchi and S. Das	In situ synthesized SrF2/polyvinylidene fluoride nanocomposite film based photo-power cell with imperious performance and stability	Electrochimica Acta	282	194-204	2018
15.	**P. Thakur***, A. Kool, N. A. Hoque, B. Bagchi, F. Khatun, P. Biswas, D. Brahma, S. Roy, S. Banerjee, S. Das	Superior Performances of In situ Synthesized ZnO/PVDF Thin Film based Self-poled Piezoelectric Nanogenerator and Self-Charged Photo-Power Bank with High Durability	Nano Energy	44	456–467	2018
16.	S. Banerjee, B. Bagchi, S. Bhandary, A. Kool,	A facile vacuum assisted synthesis of nanoparticle	Ceramic International	44	1066–1077	2018

	N. A. Hoque, **P. Thakur** and S. Das	impregnated hydroxyapatite composites having excellent antimicrobial properties and biocompatibility				
17.	A. Kool, **P. Thakur**, B. Bagchi, N. A. Hoque, S. Banerjee and S. Das	Salt-melt synthesis of B2O3, P2O5 and V2O5 modified high-alumina mullite nanocomposites with promising photoluminescence properties	Materials Research Express	4(10)		2017
18.	S. Roy, **P. Thakur***, N. A. Hoque, B. Bagchi, N. Sepay, F. Khatun, A. Kool, and S. Das	Electroactive and High Dielectric Folic Acid/PVDF Composite Film Rooted Simplistic Organic Photovoltaic Self-Charging Energy Storage Cell with Superior Energy Density and Storage Capability	ACS Applied Materials and Interfaces	9	24198-24209	2017
19.	N. A. Hoque, **P. Thakur***, S. Roy, A. Kool, B. Bagchi, P. Biswas, Md. M. Saikh, F. Khatun, S. Das and P. P. Ray	Er^{3+}/Fe^{3+} Stimulated Electroactive, Visible Light Emitting, and High Dielectric Flexible PVDF Film Based Piezoelectric Nanogenerators: A Simple and Superior Self-Powered Energy Harvester with Remarkable Power Density	ACS Applied Materials and Interfaces	9	23048-23059	2017
20.	F. Khatun, N. A. Hoque, **P. Thakur***, N. Sepay, S. Roy, B. Bagchi, A. Kool and S. Das	4´-Chlorochalcone assisted electroactive β polymorph rich and high dielectric PVDF film based simplex and talented energy storage system capable of self-charging under light	Energy Technology	5	2205-2215	2017
21.	A. Kool, **P. Thakur**, B. Bagchi, N. A. Hoque, S. Banerjee and S. Das	Synthesis of nanocrystalline photoluminescent mullite using sacrificial cotton wool and filter paper template	Journal of American Ceramic Society	100	1-12	2017
22.	N. A. Hoque, **P. Thakur**, A. Kool, S. Das and P. P. Ray	Optical and dielectric properties of hydrothermally synthesized Ni(OH)2 nanoparticles: a morphology and size dependent study	Journal of Materials Science: Materials in Electronics	28	5375–5383	2017
23.	A. Kool, **P. Thakur**, B. Bagchi, N. Sepay and S. Das	Physico-chemical property-driven dielectric behaviour and catalytic activity of nanocrystalline mullite synthesized from monophasic precursor gel	Journal of Sol-Gel Science and Technology	80	769–782	2016
24.	B. Bagchi, S. Banerjee, A. Kool, **P. Thakur**, S. Bhandary, N. A. Hoque and S. Das	Synthesis of eucalyptus/tea tree oil absorbed biphasic calcium phosphate–PVDF polymer nanocomposite films: a surface active antimicrobial system for biomedical application	Physical Chemistry Chemical Physics	18	16775-85	2016
25.	N. A. Hoque, **P. Thakur**, N. Bala, A.	Tunable photoluminescence emissions and large	RSC Advances	6	29931–29943	2016

	Kool, S. Das and P. P. Ray	dielectric constant of the electroactive poly(vinylidene fluoride-hexafluoropropylene) thin films modified with SnO2 nanoparticles				
26.	**P. Thakur***, A. Kool, N. A. Hoque, B. Bagchi, S. Roy, N. Sepay, S. Das and P. Nandy	Improving thermal stability, electroactive β phase crystallization and dielectric constant of NiO nanoparticle/C-NiO nanocomposite embedded flexible poly(vinylidene fluoride) thin films	RSC Advances	6	26288 - 26299.	2016
27.	S. Roy, **P. Thakur**, N. A. Hoque, B. Bagchi and S. Das	Enhanced electroactive β-phase nucleation and dielectric properties of PVdF-HFP thin films influenced by montmorillonite and $Ni(OH)_2$ nanoparticle modified montmorillonite	RSC Advances	6	21881-21894	2016
28.	A. Kool, **P. Thakur**, B. Bagchi, N. A. Hoque and S. Das	Sol-gel synthesis of transition metal ions conjugated alumina rich mullite nanocomposites with potential mechanical, dielectric and photoluminescence properties	RSC Advances	5	104299-104313	2015
29.	**P. Thakur**, A. Kool, B. Bagchi, N. A. Hoque, S. Das and P. Nandy	Improvement of electroactive β phase nucleation and dielectric properties of $WO_3.H_2O$ nanoparticle loaded poly(vinylidene fluoride) thin films	RSC Advances	5	62819-62827	2015
30.	A. Kool, **P. Thakur**, B. Bagchi, N. A. Hoque and S. Das	Mechanical, dielectric and photoluminescence properties of alumina-mullite composite derived from natural Ganges clay	Applied Clay Science	114	349-358	2015
31.	N. Bala, A. Kool, **P. Thakur**, S. Das, P. Nandy and R. Basu	MARSILEA MINUTA (L.) PLANT EXTRACT MEDIATED SYNTHESIS OF GOLD NANOPARTICLE FOR CATALYTIC AND ANTIMICROBIAL APPLICATIONS	International Journal of Pharmacy	5	600-609	2015
32.	**P. Thakur**, A. Kool, B. Bagchi, N. A. Hoque, S. Das and P. Nandy	*In situ* synthesis of $Ni(OH)_2$ nanobelts modified electroactive poly(vinylidene fluoride) thin films: Remarkable improvement in dielectric properties	Physical Chemistry Chemical Physics	17	13082-13091	2015
33.	**P. Thakur**, A. Kool, B. Bagchi, N. A. Hoque, S. Das and P. Nandy	The role of cerium(III)/yttrium(III) nitrate hexahydrate salts on electroactive β phase nucleation and dielectric properties of poly(vinylidene fluoride) thin films	RSC Advances	5	28487 – 28496	2015

34.	**P. Thakur**, A. Kool, B. Bagchi, S. Das and P. Nandy	Effect of in situ synthesized Fe_2O_3 and Co_3O_4 nanoparticles on electroactive β phase crystallization and dielectric properties of poly(vinylidene fluoride) thin films	Physical Chemistry Chemical Physics	17	1368-1378	2015
35.	B. Bagchi, **P. Thakur**, A. Kool, S. Das and P. Nandy	*In situ* synthesis of environmentally benign montmorillonite supported composites of Au/Ag nanoparticles and their catalytic activity in the reduction of p-nitrophenol	RSC Advances	4	61114-61123	2014
36.	A. Kool, **P. Thakur**, B. Bagchi, U. Rajak, T. Das, S. Kar, G. Chakraborty, T.K. Mukhopadhyay and S. Das	Effect of vanadic anhydride and copper oxide on the development of hard porcelain composite and its antibacterial activity	Journal of Asian Ceramic Societies	2	297–304	2014
37.	**P. Thakur**, A. Kool, B. Bagchi, S. Das and P. Nandy	Enhancement of β phase crystallization and dielectric behavior of kaolinite/halloysite modified poly(vinylidene fluoride) thin films	Applied Clay Science	99	149-159	2014

List of Conferences, Workshops or Seminars Attended:

1. Participate in the one day National Seminar “Intellectual Property Rights and Patent Laws, IPRPL-2012” at Jadavpur University, Kolkata.

2. Participate in “National Conference on Sustainable Development through Innovative Research in Science and Technology, on September 28 and 29 under DST PURSE Programme-2012” at Jadavpur University, Kolkata.

3. Participate in “1st International Workshop on Nanomaterials (IWoN): Engineering Photon and Phonon Transport, December 2012” at Jadavpur University, Kolkata.

4. Participate in the Invitational Workshop “Frontiers of Research on Speech & Music” held in March 2013 at Jadavpur University, Kolkata.

5. Presenting a paper entitled “Enhancement of β phase crystallization and dielectric behaviour of kaolinite/halloysite modified Poly(vinylidene fluoride) thin films” in the “First International Conference on Emerging Materials: Characterization & Application- December-2014” at CGCRI, Kolkata.

6. Presenting a paper entitled “Effect of in situ synthesized Fe2O3 and Co3O4 nanoparticles on electroactive β phase crystallization and dielectric properties of poly(vinylidene fluoride) thin films” in the “4th International Conference of World Science Congress” during 16-18 December 2014 at Jadavpur University, Kolkata.

7. Presenting a paper entitled “The role of Yttrium (III) nitrate hexahydrate salt on electroactive β phase nucleation of poly(vinylidene fluoride) thin films” in one day seminar “Basic Physics to Contemporary Research” on March 2015 at Department of Physics, Jadavpur University, Kolkata.
8. Presenting a paper entitled “Thermally stable, electroactive and high dielectric NiO

nanoparticle embedded flexible poly(vinylidene fluoride) thin films" in one day seminar "SOME RECENT TRENDS IN IN RESEARCH IN PHYSICS (SRTRP-2016)" on 21st March 2016 at Department of Physics, Jadavpur University, Kolkata.

9. Participate in "National Conference on Nanotechnology: Materials and Applications (NCoN:M&A)" on 16-17 June 2016, at Jadavpur University, Kolkata.

10. Participate in National workshop on "Revisiting Intellectual Property Rights in the Context of Recent Developments in Science & Technology" on October 20, 2016 at Jadavpur University, Kolkata, India.

11. Participate in a workshop on "Awareness in Fire Safety and Recent Technologies" on October 21, 2016 at Jadavpur University, Kolkata, India.

12. Participate in two days seminar on "Twists and Turns in Physics Research: Special Emphasis on Condensed Matter and Biophysics (TTRR-2017)" on 21-22 February, 2017 at Department of Physics, Jadavpur University, Kolkata, India.

13. Presenting a paper entitled "In situ synthesis of ZnO nanorod modified visible light emitting and high dielectric PVDF thin film" in "Fourth International Symposium on Semiconductor Materials and Devices (ISSMD-2017)" on 8-10 March, 2017, at the School of Materials Science and Nanotechnology, Jadavpur University, Kolkata, India.

14. Best poster award in one day National Symposium on "Nanotechnology: From Materials to Medicine and their Social Impact" on 25th March, 2017 at Birla Industrial and Technological Museum, Kolkata,

15. Presenting a paper entitled "Chlorochalcone modified PVDF based photovoltaically self-charging energy storage system" in the "International Conference on Energy Options for Tomorrow: Technology to Sustainability (ICEOT 2017)" on 17-19th April, 2017, organised by The Neotia University at Eco Vista, Kolkata, India.

Achievements / Awards:

1. Second in Poster presentation at in the "4th International Conference of World Science Congress" during 16-18 December 2014 at Jadavpur University, Kolkata.

2. Best poster award in one day National Symposium on "Nanotechnology: From Materials to Medicine and their Social Impact" on 25th March, 2017 at Birla Industrial and Technological Museum, Kolkata.

Research Projects:

PROJECT-I

Project Title: "Development of electroactive polymer nanocomposites based self-charged photo-power cells: A novel and simple approach towards clean energy generation and storage".

Principal Investigator: Dr. Pradip Thakur, Department of Physics

Funding Agency: Science & Engineering Research Board (SERB), DST, Govt. of India.

Scheme: Empowerment and Equity Opportunities for Excellence in Science

Sanctioned Amount: Rs. 30,28,436 /-

Project Start date: 18/01/2020

Duration: 3 years (Completed)

PROJECT-II

Project Title: "Fabrication of Polymeric Piezoelectric/Triboelectric Nanogenerators Based Self-charged Energy Storage Systems for Clean Energy Harvesting".

Principal Investigator: Dr. Pradip Thakur, Department of Physics

Funding Agency: Science & Engineering Research Board (SERB), DST, Govt. of India.

Scheme: Empowerment and Equity Opportunities for Excellence in Science

Sanctioned Amount: Rs. 52,94,696 /-

Project Start date: 26/02/2024

Duration: 3 years (Ongoing)

Supervision of Ph.D. Scholar (Academic):

Serial No	Name	Nature of Project	Calcutta University Registered year	Duration	Project title
1.	**Sanoar Molla**	Experimental	09403/Ph.D .(Sc.) Proceed/2022 Date: 29/11/2022	On going	Development of Bio-polymer Thin Film Based Photo- rechargeable Secondary Metal Ion Power Cells.
2	**Ujjwal Rajak**	Experimental	09405/Ph.D .(Sc.) Proceed/2022 Date: 29/11/2022	On going	"Development of Electroactive Polymer Composite Films Based Self-powered Piezoelectric Nanogenerators."
3	**Nirmal Baugh**	Experimental	**2022**	On going	Fabrication of Perovskite Materials based Photo-rechargeable Polymeric Power Cells

Supervision of M.Sc. Projects (Academic):

Serial No	Name of the Student & Institution	Nature of Project	Year	Duration	Project title
1.	**Somasree Sarkar** Dept. of Physics Jadavpur University	Experimental	2017	6 months	"SYNTHESIS AND CHARACTERISATION OF HIGHLY STABLE BISMUTH (Bi) NANOPARTICLE"
2	**Shuvankar Sinha** Dept. of Physics Jadavpur University	Experimental	2017	6 months	"One Step Room Temperature Synthesis of Cuprous Oxide (Cu2O) Encapsulated Copper(Cu) Nanoparticles"

Reviewer experiences:

Regular reviewer of:

(1) **Elsevier Journals** (European Polymer Journal, Carbohydrate Polymers, Composite Science and Technology, Composites Part B, Ceramics International, Engineering Science and Technology, an International Journal etc.),

(2) **American Chemical Society (ACS) journals** (ACS Applied Materials and Interfaces etc),

(3) **American Institute of Physics (AIP) journal**s (like Applied Physics Letters, AIP Renewable and Sustainable Energy),

(4) **Wiley VCH journal** (like Advanced Electronic Materials etc) etc.

Membership of Bodies:

1. Life Member of "**The Indian Physical Society (Life Membership No. LM/1097)**" effective from 02/08/2016.
2. Life Member of "**The Indian Science Congress Association (Life Membership No. L32053**)" effective from 27/02/2017.

Thanks for reading my resume.

Pradip Thakur

Dr. Pradip Thakur