BIO-DATA

1. Name and full correspondence address: **Pritam Mukhopadhyay**
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3. Institution: Jawaharlal Nehru University
New Delhi 11067

4. Date of Birth: 06/06/1974

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

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

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

8. Academic Qualification:

	Degree	**Year**	**Subject**	**University/Institution**
1.	B.Sc. (Hons)	1995	Chemistry (Main), Physics, Maths, English	Calcutta
2.	M.Sc.	1997	Chemistry	Calcutta
3.	Ph.D.	2002	Supramolecular Chemistry	IIT Kanpur

9. Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Title: *Symmetrical and Unsymmetrical π-A Functionalized Cryptands: Nonlinear Optical Effects, Langmuir-Blodgett Films and Guest Included Supramolecular Network Formation Studies*

Name of the guide: Prof. P. K. Bharadwaj

Institute: IIT Kanpur

Year: 2002

10. Work experience (in chronological order).

S. No.	Positions Held	Name of University/Institute	From	To	Pay Scale
1.	Faculty Research Assistant	University of Maryland, College Park, USA	Nov. 2002	Dec. 2004	N/A
2.	JSPS Post-Doctoral Research Associate	Kyushu University, Japan	2005	Dec. 2006	N/A
3.	Assistant Professor	Jawaharlal Nehru University, New Delhi	26th Dec. 2006	29th July 2014	Rs. 15,600-39,100 AGP Rs. 6000
4.	Associate Professor	Jawaharlal Nehru University, New Delhi	30th July 2014-	Present	Rs. 1,43,600

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

S. No.	Name of Award	Awarding Agency	Year
1.	SwarnaJayanti Fellowship	DST, Govt. of India	2014-15
2.	Associate member	Indian Academy of Sciences, Bangalore	2010
3.	JSPS-Postdoctoral Fellowship	JSPS, Japan	2006
4.	DST-DAAD Exchange Research Fellow	DST-DAAD	2000
5.	ISCA Young Scientist	Indian Science Congress	2000

12. Publications (List of papers published in SCI Journals, in year wise descending order).

S. No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	J. Shukla, S. Kumar, Rustam, **P. Mukhopadhyay***	Synthesis of Stable, High-SOMO Zwitterionic Radicals: Enabling Electron Transfer Between Naphthalenediimides	*Org. Lett.* *(Cover article)*	22	ASAP doi.org/10.1021/acs.orglett.0c01263	2020
2.	K. Mandal, D. Bansal, Y. Kumar, Rustam, J. Shukla, **P. Mukhopadhyay***	Halogen Bonded Assemblies of Arylene-imides and -diimides: Insight from Electronic, Structural and Computational studies	*Chem. Eur. J.*		Accepted	2020
3.	J. Shukla, V. P. Singh, **P. Mukhopadhyay***	Molecular and Supramolecular Multiredox Systems	*Chemistry Open* **2020**, *9*, 304-324 (*Invited Article*)	9	304-324	2020
4.	S. Kumar, J. Shukla, K. Mandal, Y. Kumar, R. Prakash, P. Ram, **P. Mukhopadhyay***	Doubly zwitterionic, di-reduced, highly electron-rich, air-stable naphthalenediimides: redox-switchable islands of aromatic–antiaromatic states	*Chem. Sci.*	10	6482-6493	2019
5.	Y. Kumar, S. Kumar, D. Bansal, **P. Mukhopadhyay***	Synthesis and Isolation of a Stable Perylenediimide Radical Anion and Its Exceptionally Electron-Deficient Precursor	*Org. Lett.*	21	2185-2188	2019
6.	S. Kumar, V. Malik, J. Shukla, Y. Kumar, D. Bansal, R. Chatterjee, **P**. **Mukhopadhyay***	Ionic Assembly, Anion-π, Magnetic and Electronic Attributes of Ambient Stable Naphthalenediimide Radical Ions	*Chem. Eur. J.*	25	4740-4750	2019
7.	D. Bansal, Y. Kumar, S. Kumar, K. Mandal, G. Hundal, **P. Mukhopadhyay***	Core-insertion of palladium in naphthalenediimides: Opto-electronic properties, structural	*Inorg. Chim. Acta.* (*Invited Article*)	486	185-192	2019

		insights and coupling studies				
8.	J. Shukla, **P. Mukhopadhyay**[*]	Synthesis of Functionalized Naphthalene Diimides and their Redox Properties	*Eur. J. Org. Chem*. (Invited article and Cover article)		7770-7786	**2019**
9.	S. Gurung, S. Dana, K. Mandal, **P. Mukhopadhyay**, **N. Mondal**[*]	Downregulation of c-Myc and p21 expression and induction of S phase arrest by naphthalene diimide derivative in gastric adenocarcinoma cells	*Chemico-biological interactions*	*304*	106-123	2019
10.	Y. Kumar, S. Kumar, K. Mandal, **P**. **Mukhopadhyay**[*]	Isolation of Tetracyano-Naphthalenediimide and Its Stable Planar Radical Anion	*Angew. Chem. Int. Ed*. (*Hot Paper and Cover Article*)	*57*	16318-16322	2018
11.	J. Shukla, M. R. Ajayakumar, **P**. **Mukhopadhyay**[*]	Buchwald-Hartwig Coupling at the Naphthalenediimide Core: Access to Dendritic, Panchromatic NIR Absorbers with Exceptionally Low Band Gap	*Org. Lett*.	*20*	7864-7868	2018
12.	S. Kumar, **P. Mukhopadhyay**[*]	Ambient stable naphthalenediimide radical ions: synthesis by solvent-free, sonication, mechanical grinding or milling protocols	*Green Chem*., (*Cover Article*)	*20*	4620-4628	2018
13.	J. Shukla, M. R. Ajayakumar, Y. Kumar, **P. Mukhopadhyay**[*]	Electron sponge from naphthalenediimide–viologen conjugates: water-stable, highly electron-deficient polyions with 1 V potential window	*Chem. Commun*.	54	900-903	2018
14.	S. Kumar, J. Shukla, Y. Kumar, **P. Mukhopadhyay**[*]	Electron-poor arylenediimides	*Org. Chem. Front*.	5	2254-2276	2018
15.	S. K. Keshri, D. Asthana, S. Chorol, Y.	Appending Diverse π-Extended Acceptors with Tetrathiafulvalene/	*Chem. Eur. J*. (*Frontispiece Article*)	24	1821-1832	2018

	Kumar, **P. Mukhopadhyay**[*]	Dithiafulvalene Donors: Multistate Redox Properties, Radical Ion Generation, and Mid-IR-Absorbing Mixed Valence States				
16.	A. K. Jassal, B. S. Sran, K. Mandal, **P. Mukhopadhyay**, **G. Hundal**[*]	Role Reversal of the Carboxylate Group from Coordination to Hydrogen Bonding Only, in Structurally Diverse Metal-2-amino, 5-Nitro-benzoates: A First Report	*Crystal Growth & Design*.	18	4737-4748	2018
17.	S. K. Keshri, S. Kumar, K. Mandal, **P. Mukhopadhyay**[*]	Ambient Water-Stable Dianionic Electron Donors: Intramolecular Noncovalent Conduits Assist Charge Delocalization	*Chem. Eur. J.* (*Frontispiece Article*)	23	11802-11809	2017
18.	Y. Kumar, S. Kumar, S. K. Keshri, J. Shukla, S. S. Singh, T. S. Thakur, M. Denti, **A. Fachetti**,[*] **P. Mukhopadhyay**[*]	Synthesis of octabromoperylene dianhydride and diimides: evidence of halogen bonding and semiconducting properties	*Org. lett*.	18	472-475	2016
19.	S. Kumar, Y. Kumar, S. K. Keshri, **P. Mukhopadhyay**[*]	Recent Advances in Organic Radicals and Their Magnetism	*Magnetochemistry* (*Invited Review*)	2	42	2016
20.	S. Dana, S. K. Keshri, J. Shukla, K. S. Vikramdeo, N. Mondal, **P. Mukhopadhyay**[*], **S. K. Dhar**[*]	Design, Synthesis and Evaluation of Bifunctional Acridinine–Naphthalenediimide Redox-Active Conjugates as Antimalarials	*ACS Omega*	1	318-333	2016
21.	D. Asthana, J. Shukla, S. Dana, V. Rani, M.R. Ajayakumar, K. Rawat, K. Mandal, P. Yadav, S. Ghosh, **P. Mukhopadhyay**[*]	Assorted morphosynthesis: access to multi-faceted nano-architectures from a super-responsive dual π functional amphiphilic construct	*Chem. Comm*. (*Cover Article*)	51	15237-15240	2015
22.	S. Kumar, M. R. Ajayakumar, G. Hundal, **P. Mukhopadhyay**[*]	Extraordinary stability of naphthalenediimide radical ion and its ultra-electron-deficient	*J. Am. Chem. Soc*.	136	12004-12010	2014

		precursor: strategic role of the phosphonium group				
23.	D. Asthana, G. Hundal, **P. Mukhopadhyay**[*]	Self-assembly characteristics of a multipolar donor-acceptor–based bis-pyrene integrated molecular tweezer	*J. Chem. Sci*. (*Invited Article).*	126	1331-1336	2014
24.	S. Dana, D. Prusty, D. Dhayal, M. K. Gupta, A. Dar, S. Sen, **P**. **Mukhopadhyay**, T. Adak, S. K. Dhar[*]	Potent Antimalarial Activity of Acriflavine *In Vitro* and *In Vivo*	*ACS chem. Biol*.	9	2366-2373	2014
25.	D. Asthana, S. K. Keshri, G. Hundal, G. Sharma, **P. Mukhopadhyay**[*]	Self-assembly patterns of steroid-based all-organic ferroelectrics: valuable insights from the single-crystals derived from an organogel and solution	*Cryst. Eng. Comm*. (*Invited Article)*	16	4861-4866	2014
26.	M. R. Ajayakumar, K. Mandal, K. Rawat, D. Asthana, R. Pandey, A. Sharma, S. Yadav, S. Ghosh, **P. Mukhopadhyay**[*]	Single electron transfer-driven multi-dimensional signal read-out function of TCNQ as an "Off-the-Shelf" detector for cyanide	*ACS applied materials & interfaces* (*Cover Article*)	5	6996-7000	2013
27.	D. Asthana, R. Pandey, **P. Mukhopadhyay**[*]	Urea-based constructs readily amplify and attenuate nonlinear optical activity in response to H-bonding and anion recognition	*Chem. Commun*. (*Cover Article*)	49	451-453	2013
28.	M. R. Ajayakumar, G. Hundal, **P. Mukhopadhyay**[*]	Tetrastable naphthalenediimide: anion induced charge transfer, single and double electron transfer for combinational logic gates	*Chem. Commun*. (*Cover Article*)	49	7684-7686	2013
29.	D. Asthana, M. R. Ajayakumar, R. P. Pant, **P. Mukhopadhyay**[*]	NTCDA–TTF first axial fusion: emergent panchromatic, NIR optical, multi-state redox and high optical contrast photooxidation	*Chem. Commun*. (*Cover Article*)	48	6475-6477	2012
30.	M. R. Ajayakumar, D. Asthana, **P. Mukhopadhyay**[*]	Core-modified naphthalenediimides generate persistent radical anion and cation: New panchromatic NIR probes	*Org. lett*.	14	4822-4825	2012

31.	P. K. Sukul, D. Asthana, **P**. **Mukhopadhyay**, D. Summa, L. Muccioli, C. Zannoni, **D. Beljonne**,* **A. E. Rowan,* S. Malik***	Assemblies of perylene diimide derivatives with melamine into luminescent hydrogels	*Chem. Commun*.	47	11858-11860	2011
32.	D. Asthana, A. Kumar, A. Pathak, P. K. Sukul, S. Malik, R. Chatterjee, S. Patnaik, K. Risannen, **P. Mukhopadhyay***	An all-organic steroid–D–π-A modular design drives ferroelectricity in supramolecular solids and nano-architectures at RT	*Chem. Commun*.	47	8928-8930	2011
33.	M. R. Ajayakumar, S. Yadav, S. Ghosh, **P. Mukhopadhyay***	Single-electron transfer driven cyanide sensing: a new multimodal approach	*Org. lett*.	12	2646-2649	2010
34.	**P**. **Mukhopadhyay***, **N**. **Fujita***, A. Takada, T. Kishida, M. Shirakawa, **S**. **Shinkai***	Regulation of a Real Time Self-Healing Process in Organogel Tissues by Molecular Adhesives	*Angew. Chem. Int. Ed*.	49	6338-6342	2010
35.	S. Ghosh, **P. Mukhopadhyay**, L. Isaacs	Deconvolution of a multi-component interaction network using systems chemistry	*Journal of Systems Chem*.	1	6	2010
36.	M. R. Ajayakumar, **P**. **Mukhopadhyay***	Naphthalene-bis hydrazimide: radical anions and ICT as new bimodal probes for differential sensing of a library of amines	*Chem. Commun*. (*Cover Article*)		3702-3704	2009
37.	S. Chakrabarti, **P**. **Mukhopadhyay**, S. Lin, **L**. **Isaacs***	Reconfigurable four-component molecular switch based on pH-controlled guest swapping	*Org. lett*.	9	2349-2352	2007
38.	S. Malik, N. Fujita, **P. Mukhopadhyay**, Y. Goto, K. Kaneko, T. Ikeda, S. Shinkai	Creation of 1D [60] fullerene superstructures and its polymerization by γ-ray irradiation	*J. Mater. Chem*.	17	2454-2458	2007
39.	**P. Mukhopadhyay**, P. Y. Zavalij, **L. Isaacs***	High fidelity kinetic self-sorting in multi-component systems based on guests with multiple binding epitopes	*J. Am. Chem. Soc*.	128	14093-14102	2006
40.	**P**. **Mukhopadhyay**, Y. Iwashita, M. Shirakawa, S. Kawano, N. Fujita, **S**. **Shinkai***	Spontaneous colorimetric sensing of the positional isomers of dihydroxynaphtha-lene in a 1D organogel matrix	*Angew. Chem*. **2006**, *118*,	118	1622-1625	2006

41.	B. Bag, **P. Mukhopadhyay**, **P. K. Bharadwaj***	Fluorescence signaling systems with a cryptand receptor incorporating electron-withdrawing groups: Metal ion specificity and solvent dependence	*J. Photochem. Photobiol. A: Chemistry*.	181	215-225	2006
42.	N. Fujita, **P. Mukhopadhyay**, **S. Shinkai***	Recent development of organogels towards smart and soft materials	*Annual Review of Nano Research*.		385-428	2006
43.	B. Bag, **P. Mukhopadhyay**, **P. K. Bharadwaj***	Exocyclic coordination and translocation of metal ions in laterally non-symmetric aza cryptands	*Current Science*.		1166-1175	2006
44.	N. Fujita, **P**. **Mukhopadhyay***, M. Shirakawa, Y. Iwashita, S. –i. Kawano, **S. Shinkai***	Recognition properties of naphthalenediimide organogel	55th Society of Polymer Science Japan Symposium on Macromolecules.		2689-2690	2006
45.	S. M Liu, C. Ruspic, J. Lagona, **P**. **Mukhopadhyay**, P.Y. Zavalij, L. Isaacs	On the binding selectivity of the cucurbit [n] uril family	*Abstracts of papers of the American Chemical Society*	230	U3303-U3303	2005
46.	J. Lagona, **P**. **Mukhopadhyay**, S. Chakrabarti, **L. Isaacs***	The Cucurbit[*n*]uril Family	*Angew. Chem. Int. Ed*.	44	4844-4870	2005
47.	S. Liu, C. Ruspic, **P**. **Mukhopadhyay***, S. Chakrabarti, P. Y. Zavalij, **L. Isaacs***	The cucurbit [n] uril family: prime components for self-sorting systems	*J. Am. Chem. Soc*.	127	15959-15967	2005
48.	**P. Mukhopadhyay**, A. Wu, **L. Isaacs***	Social self-sorting in aqueous solution	*J. Org. Chem*.	69	6157-6164	2004
49.	A. Wu, **P. Mukhopadhyay**, A. Chakraborty, J. C. Fettinger, **L. Isaacs***	Molecular clips form isostructural dimeric aggregates from benzene to water	*J. Am. Chem. Soc*.	126	10035-10043	2004
50.	**P. Mukhopadhyay**, **P. K. Bharadwaj**, A. Krishnan, P. K. Das	Modulation of SHG responses via supramolecular	*J. Organometallic Chem*.	689	4877-4881	2004

		association/dissociation between two complementary cryptands				
51.	B. Sarkar, **P. Mukhopadhyay**, **P. K. Bharadwaj**	Laterally non-symmetric aza-cryptands: synthesis, catalysis and derivatization to new receptors	*Coord. Chem. Rev*.	236	1-13	2003
52.	**P. Mukhopadhyay**, B. Sarkar, **P. K. Bharadwaj**, K. Nättinen, K. Rissanen	Metal binding characteristics of a laterally nonsymmetric aza cryptand upon functionalization with a π-acceptor group	*Inorg. Chem*.	42	4955-4960	2003
53.	**P. Mukhopadhyay**, R. J. Butcher, P. K. Bharadwaj	Binding of nitrate anion in a supramolecularly constructed macrocycle	*Indian J. Chem*. A.	42A	2316-2319	2003
54.	**P. Mukhopadhyay**, **P. K. Bharadwaj**, G. Savitha, A. Krishnan, P. K. Das	A new class of three dimensional D–π–A trigonal cryptand derivatives for second-order nonlinear optics	*J. Mater. Chem*.	12	2237-2244	2002
55.	**P. Mukhopadhyay**, **P. K. Bharadwaj**, A. Krishnan, P. K. Das	Synthesis and characterization of mono- and bis-D–π–A cryptand derivatives for second-order NLO and its Modulation with different metal ions	*J. Mater. Chem*.	12	2786-2791	2002
56.	**P. Mukhopadhyay**, **P. K. Bharadwaj**, G. Savitha, A. Krishnan, P. K. Das	The first D–π–A octupolar cryptand molecule to exhibit bulk non-linearity	*Chem. Commun*.		1815-1816	2000

13. Detail of patents.

S. No.	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1.	Method of screening anti-plasmodial activity of acriflavin and acriflavin as an anti-malarial agent	**S. K. Dhar**, S. Dana, A. Dar, D. Prusty, **P. Mukhopadhyay**	9,375,426	28/06/2016	US Patent	Granted
2.	Fibrous fullerene, fibrous fullerene polymer, and their manufacture by using sublimable solvent	N. Fujita, S. Malik, **P. Mukhopadhyay, S. Shinkai**	JP 2008150249 A 20080703	2008	Jpn. Kokai Tokyo Koho	Granted

14. Books/Reports/Chapters/General articles etc.

S. No.	Title	Author(s)	Name of Publisher	Year of Publication
1.	Functional Molecular and Supramolecular Materials for Electron Transfer Reactions and their Applications	S. K. Keshri, S. Dana, M. R. Ajayakumar, D. Asthana, **P. Mukhopadhyay***	RSC *Chapter 4, Monographs in Supramolecular Chemistry No. 22.*	2017
2.	A developmental journey from first through second generations of organogels in *Bottom-Up Nanofabrication*	**P.Mukhopadhyay, S. -I.** Kawano, N. Fujita, S. Shinkai	*American Scientific Publishers* Chapter 55, Edited by Katsuhiko Ariga, K.; Nalwa, H. S.	2009
3.	Recent developments of organogels towards smart and soft materials	N. Fujita, **P. Mukhopadhyay,** S. Shinkai	*World Scientific* Chapter 9, Edited by: Guozhong Cao and C. Jeffrey Brinker	2006

15. No. of Ph.D. students awarded: 08

No. of Post-Doc trained: 05

No. of M.Sc/Summer Intern Fellow trained- 35

16. Any other Information (maximum 500 words):

Organic radical ion chemistry is a fascinating area of chemistry which has significant implications in the fundamental aspects of chemistry, physics and biology. Its immense applications in material science due to its conductive and magnetic properties and as recently as spin-based computers has opened up new horizons in this important area of science. Further, electro-active organic molecules can be new types of hybrid drugs. In addition, organic polar materials like organic ferroelectrics have immense potential toward new generation of dipole switchable materials in presence of electric field. We have made considerable contributions in these areas:

- We have been able to significantly contribute toward the generation and ambient stabilization of new organic radical ions. The studied radical ions had remained non-isolable for several decades. We are the very first group in the world to systematically isolate and stabilize diverse arylenediimide radical ions under ambient conditions.

- We have developed solvent-free green methods to synthesize and isolate radical ions, which is the very first instance of such eco-friendly methods in synthetic spin chemistry.

- Our strategy to utilize intramolecular non-covalent interactions to stabilize radical ions has been unique and had never been utilized for stabilization of organic unpaired systems. In few cases, we have taken lessons from biology to stabilize multi-reduced anionic systems in ambient water.

- Utilizing our molecular and non-covalent design strategies we also have been able to isolate and stabilize the strongest electron acceptors known till date and a rare example of a planar radical anion.

- Our group has been able to systematically prepare multi-electron acceptors, which act as electron sponges and accumulate six electrons at a potential much lower than the seminal fullerene molecule.

- We have been able to generalize design concepts towards new generation of organic panchromatic systems and organic molecular materials that are known as black absorbers, which are potentially attractive as new solar-cell materials.

- We have been able to develop new generation of all-organic, room temperature ferroelectric materials. A complex combination of halogen bonding interaction has also been applied to develop new organic semiconductors.

- Our group along with collaboration from Prof. S. Dhar's group in JNU, New Delhi have developed and studied new generation of redox-active antimalarial drugs. This has recently been accepted as a US patent.