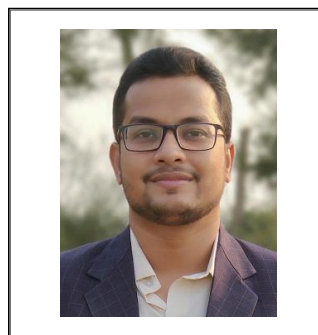


RESUME [SANDIP PAL]

NAME: Dr. Sandip Pal



Contact Number: 7384207084, 7908493084, +1 (347) 216-9935

Email Id: sandipchemistry222@gmail.com

sandippal91@ucla.edu

DATE OF BIRTH

DD/MM/YYYY: 17/01/1991

Age in Years: 31

EDUCATIONAL QUALIFICATION

S. No.	Name of Degree	Institution/Board /University	Percentage (%)	Duration (in years)	From (DD/MM/YYYY)	To (DD/MM/YYYY)
1.	Postdoctoral Scholar	University of California, Los Angeles (UCLA), USA	-	-	01/05/2022	Present
2.	Ph.D. (Science)	CSIR-CSMCRI, India	9.42 (CGPA)	05	22/08/2016	21/10/2021
3.	M.Sc. (Chemistry)	Vidyasagar University	77.5 (1 st Class)	02	01/08/2014	24/06/2016
4.	B.Sc. (Chemistry Hons.)	Vidyasagar University	60.625 (1 st Class)	04	01/07/2010	14/07/2014
5.	Intermediate (10+2)	West Bengal Council of Higher Secondary Education	77.2	01	01/04/2009	23/05/2010
6.	Metric (10 th)	West Bengal Board of Secondary Education	79.5	01	01/04/2007	29/05/2008

PROFESSIONAL R&D EXPERIENCE SUMMARY

S.No	Organization	Position	Duration	From (DD/MM/YYYY)	TO (DD/MM/YYYY)
1.	University of Calcutta	Project work experience	2 Months	01/07/2015	31/08/2015
2.	CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar	Project Assistant II	7 months 10 days	22/08/2016	31/03/2017
3.	CSIR-Central Salt & Marine Chemicals Research Institute,	Project Assistant II	1 year 10 months 19 days	17/05/2017	04/03/2019

	Bhavnagar				
4.	CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar	Project Assistant III	5 months 26 days	05/03/2019	29/08/2019
5.	CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar	Project Assistant III	7 months 2 days	30/08/2019	31/03/2020
6.	CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar	Project Assistant II	4 months 11 days	02/06/2020	13/10/2020
7.	CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar	Project Associate II	5 months 17 days	14/10/2020	31/03/2021
8.	Tatva Chintan Pharma Chem Ltd. (Gujarat, India)	Sr. Officer at R&D	10 month s 10 days	05/04/2021	14/02/2022

PROFESSIONAL R&D EXPERIENCE SUMMARY (ROLES & RESPONSIBILITY)

Organization Name 1: University of Calcutta **Position:** Project work experience **Duration:** 01 July 2015 to 31 Aug 2015

Roles & Responsibilities:

- **Role:** I have project work experience in the “area of polyelectrolytes in the removal of heavy metal ions from water and synthesis of light-emitting polymers” under the supervision of Dr. Abhijit Bandyopadhyay.

Organization Name 2: CSIR-CSMCRI, India
Duration: 22 Aug 2016 to 21 Oct 2021

Position: (Ph.D.) Project Assistant/Associate fellowship

Roles & Responsibilities:

- **Role 1:** I have completed Ph.D. in Science entitled "**Preparation of ion exchange membranes with high electrochemical properties for various electro membrane applications**" at MS&ST division, CSIR-CSMCRI, Bhavnagar, Gujarat.
- **Role 2:** I have synthesized various polymers, co-polymers, graft co-polymers via Conventional polymerization and ATRP techniques for the preparation of membranes.
- **Role 3:** I have mostly worked on the preparation of ion exchange membranes (IEMs) by **simple solution casting method** through quaternization and crosslinking reaction for various electro membrane process applications like water desalination, wastewater treatment, acid recovery from wastewater etc.
- **Role 4:** I have done characterization of polymers and membranes by interpreting different analytical data (NMR, FTIR-ATR IR, SEM & TEM images, AFM, GPC, UV-Vis, DMA, DSC, TGA, contact angle, and tensile stress-strain determination).
- **Role 5:** I have also worked on the preparation of supported cation and anion exchange membrane by **phase inversion process** for large-scale electrodialysis applications.
- **Role 6:** I have also prepared highly acid stable membranes for recovering acids from waste acid solution via Diffusion Dialysis.
- **Role 7:** I have also prepared stable membranes as a separator for energy storage devices like fuel cells and vanadium redox flow batteries (VRFBs).

- **Role 8:** I have also synthesized graphene oxide (GO) using a modified Hummers method and prepared composite membranes for fuel cell applications.
- **Role 9:** I have synthesized silver nanoparticles (AgNPs) and incorporated them into the polymer matrix to prepare antifouling IEMs for water applications.
- **Role 10:** Guided two M.Sc. students by mentoring them in performing their dissertation projects at CSIR-CSMCRI.

Organization Name 3: Tatva Chintan Pharma Chem Ltd. **Position:** Sr. Officer (R&D) **Duration:** 05 April 2021 to 14 February 2022

Roles & Responsibilities:

- **Role 1:** Set up of membrane science and separation technology-based R&D laboratory.
- **Role 2:** Manpower management
- **Role 3:** Planning of experiments for the development of stable anion exchange membrane for quaternary ammonium hydroxide production and evaluation of results.
- **Role 4:** I have experienced on SAP Business One software handling.

Organization Name 4: University of California, Los Angeles (UCLA), USA. **Position:** Postdoctoral Scholar **Duration:** 01 May 2022 to Present.

Roles & Responsibilities:

- **Role 1:** To study the effect of highly-selective ion exchange membranes for selectively extracting various ions of high value.
- **Role 2:** Development of novel, cost-effective & highly selective ion exchange membrane preparation by using different techniques, e.g. polymer composites membranes, surface modification, interfacial polymerization on the top layer of a membrane, surface coating, layer-by-layer (LbL) assembly, electrodeposition, etc.
- **Role 3:** Detailed focus on the physical, structural, and chemical characterization and durability of the prepared membranes in their respective application field.

Achievements:

- I have worked in the QC department at Sai Sulfonate Pvt. Ltd. (Kharagpur, West Bengal, India) for 4 months during my M.Sc.
- I have worked on many projects during my Ph.D. tenure. I have above **4.5 years** of work experience (CSIR-CSMCRI, Gujarat, India).
- Successfully fabricated electrochemical cells for different electro membrane applications.
- Developed efficient membranes for different electrochemical applications.
- I have filed an **Indian patent** on “Crosslinked Polyacrylonitrile based Anion Exchange Membranes and Process for the Preparation Thereof” **IN Patent App. 201911043025**.
- A water desalination unit (capacity 100 L/h) using our prepared membranes has been developed and is presently in trial mode. This unit will be installed in a primary school in Bhavnagar to provide drinking water to school children.
- I have seven research publications in reputed SCI indexed international/ national Journals and some research papers are under communication.
 1. **S. Pal**, A. Choudhury, P. Patnaik, S. Sarkar, U. Chatterjee, *Int. J. Hydrogen Energy*, (2022), Accepted. (doi.org/10.1016/j.ijhydene.2022.03.025) **IF: 5.816**
 2. **S. Pal**, R. Mondal, A. K. Singh Chandel, U. Chatterjee, Composite anion exchange membranes with antibacterial properties for desalination and fluoride ion removal, *ACS ES&T Water*, (2021), 1 (10), 2206-2216. (doi.org/10.1021/acsestwater.1c00147).
 3. **S. Pal**, R. Mondal, U. Chatterjee, Sulfonated polyvinylidene fluoride and functional copolymer-based blend proton exchange membrane for fuel cell application and studies on

- methanol crossover, *Renewable Energy*, (2021), 170, 974-984. (DOI: 10.1016/j.renene.2021.02.046). **IF: 8.001**
4. **S. Pal**, R. Mondal, S. Guha, U. Chatterjee, S.K. Jewrajka, Crosslinked terpolymer anion exchange membranes for selective ion separation and acid recovery, *Journal of Membrane Science*, (2020), 118459. (DOI:10.1016/j.memsci.2020.118459). **IF: 8.742**
 5. **S. Pal**, R. Mondal, S. Guha, U. Chatterjee, S.K. Jewrajka, Homogeneous phase crosslinked poly(acrylonitrile-co-2-acrylamido-2-methyl-1-propanesulfonic acid) conetwork cation exchange membranes showing high electrochemical properties and electro dialysis performance, *Polymer*, (2019), 121680. (DOI: 10.1016/j.polymer.2019.121680). **IF: 4.43**
 6. V. Bhadja, S. Chakraborty, **S. Pal**, R. Mondal, U. Chatterjee, A sustainable and efficient process for the preparation of polyethylene–polystyrene interpolymer based anion exchange membranes by in situ chloromethylation for electro dialytic applications, *RSC Sustainable Energy & Fuels*, 1, (2017), 583-592. (DOI:10.1039/C7SE00048K). **IF: 6.367**
 7. R. Mondal, **S. Pal**, D.V. Bhalani, V. Bhadja, U. Chatterjee, S.K. Jewrajka, *Desalination*, 445, (2018) 85-94. (DOI: 10.1016/j.desal.2018.07.032). **IF: 9.501**
 8. R. Mondal, **S. Pal**, U. Chatterjee, *ACS Applied Polymer Materials*, (2021), 3(3), 1544-1554 (DOI: 10.1021/acsapm.0c01383). **IF: 4.089**
 9. R. Mondal, **S. Pal**, P. Patnaik, D. V. Bhalani, S. K. Gupta, U. Chatterjee, S. K. Jewrajka, *Desalination*, (2022), 531, 115682. (doi.org/10.1016/j.desal.2022.115682). **IF: 9.501**
- I have presented my work in several national and international symposiums and conferences.

Extracurricular Activities/ Hobbies etc.

1. Hard and devoted worker
2. Cricket
3. Travelling
4. Dancing
5. Cooking

List of Additional Professional Certifications

1. Certificate in Information Technology Application, Dept. Of Sports & Youth Service (Youth Services Branch), Govt. of West Bengal and Computer World. Marks obtained 80%.
2. I have got **Merit cum means** scholarship during my M.Sc.
3. Research Excellence Award 2020 (**InSc**)
4. Life-Member in Indian Society for ElectroAnalytical Chemistry (ISEAC).
5. Member of American Chemical Society (ACS).
6. Augmenting Writing Skills for Articulating Research (**AWSAR Award 2021, DST India**).
7. Peer reviewer of *American Journal of Polymer Science and Technology*.
8. Peer reviewer of *Journal of Modern Polymer Chemistry and Materials (JMPCM, ISSN 2788-8193)*, *Journal of Modern Green Energy (JMGE, ISSN 2790-3206)*.

PERSONAL AND OTHER DETAILS:

Address	
Permanent Address: Vill- Chaulia, Saray Bazar P.O. + P.S. = Dantan Dist.- Paschim Medinipur West Bengal, 721426	Correspondence Address: 2227, Benecia Ave Los Angeles CA, USA 90064

IT /Soft Skills (level of proficiency basic / advance): Microsoft Office, Excel 2016, Origin 2018 64bit, PowerPoint 2016, ChemDraw professional 16.0, and little bit knowledge of other instruments for characterization techniques.

Languages Known: Bengali, Hindi, and English

Marital Status (Married/Unmarried): Married

LinkedIn Profile: <https://www.linkedin.com/in/sandip-pal-64287115a/>

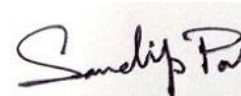
Google Scholar Profile: <https://scholar.google.com/citations?user=LcWeaMQAAAAJ&hl=en>

Web of Science Researcher ID: ABG-1710-2021

References		
Dr. V K Shahi Senior Principal Scientist Membrane Science and Separation Technology division, CSIR-Central Salt & Marine Chemical Research Institute, Bhavnagar, Gujarat, India E-mail: vkshahi@csmcri.res.in	Prof. David Jassby, Ph.D. Associate Professor Department of Civil and Environmental Engineering University of California, Los Angeles +1 (310) 825-1346 E-mail: jassby@ucla.edu , davidjassby@gmail.com	Dr. Uma Chatterjee Principal Scientist Membrane Science and Separation Technology division, CSIR-Central Salt & Marine Chemical Research Institute, Bhavnagar, Gujarat, India Phone: 0278- 2567760 (Ext. 7370) E-mail: umac@csmcri.res.in , umac@csmcri.org

Declaration: *I do hereby declare that all the information is true and correct to the best of my knowledge and in case of any discrepancy in information/certificates, my candidature shall stand canceled.*

Date: 15th May 2022



Signature