

Faculty Profile



1. Personal Details:

- a. **Name of the Faculty:** Dr.Pujarini Banerjee
- b. **Academic Degrees:** MSc., PhD
- c. **Department:** Chemistry
- d. **Designation:** Assistant Professor
- e. **Email id:** pujarini.banerjee87@gmail.com
- f. **Courses Taught:** Atomic structure, Kinetics, Polymers, Surface Chemistry, Rotational, Vibrational and Electronic Spectroscopy, Theoretical spectroscopy, Group theory and applications, Thermodynamics, Chemical dynamics, Laser fundamentals
- g. **Area of Research Interests:**My research interests involve the IR spectroscopic elucidation of structures and conformations of atmospherically and biologically important molecules, and various non-covalent interactions involving such molecules. Also, understanding of the physical origin of infrared spectral shifts in binary hydrogen bonded complexes is an aim of the research. Molecular complexes are synthesized in solution at ambient conditions, or in cryogenic environments. Additionally, molecular structures are investigated in gas phase at high resolution. The results are supported and interpreted by state-of-art quantum chemical calculations.
- h. **Teaching Experience [substantive post only]:** Assistant Professor at DHWU w.e.f March, 2019
- i. **Administrative Experience:** Participation in DC meetings, member of BOS and BORS, Department of Chemistry

2. Research Publications [Last 5 Years]:

Serial No.	Title of the Research Paper	Level [international/national/state]	ISBN/ISSN	Name of the Publishing Agency	Year of Publication
1.	Weak hydrogen bonds: insights from vibrational spectroscopic studies, <u>Pujarini Banerjee</u> and Tapas Chakraborty, <i>Int. Rev. Phys. Chem</i> 2018 , 37, 83–123	International	0144-235X	Taylor and Francis	2018
2.	Stereo-preference of camphor for H-bonding with phenol, methanol and chloroform: A combined matrix isolation IR spectroscopic and quantum chemical investigation, <u>Pujarini Banerjee</u> , Prasenjit Pandey and Biman Bandyopadhyay, <i>Spectrochim. Acta Mol. Biomol. Spectrosc.</i> 2019 , 209, 186-195	International	13861425	Elsevier	2019
3.	Modulations of ν_{O-H} and $\nu_{C=O}$ Stretching Frequencies of Difluoroacetic Acid with Internal Rotation of CHF_2 Rotor: A Combined Vapor Phase and Matrix Isolation Infrared Spectroscopy Study, Indrani Bhattacharya, <u>Pujarini Banerjee</u> , Jayshree Sadhukhan, and Tapas Chakraborty, <i>J Phys. Chem A</i> 2019 , 123 , 2771	International	1089-5639	American Chemical Society	2019
4.	$CH\cdots O$ H-bond mediated tautomerization of 2-methyl-1,3-cyclohexanedione: A combined IR spectroscopic and theoretical study, <u>Pujarini Banerjee</u> ^a , Prasenjit Pandey ^b , Biman	International	13861425	Elsevier	2021

	Bandyopadhyay Spectrochim Acta Mol. Biomol. Spectrosc, 2021 , <u>253</u> , 119550 (2021).				
5.	Direct matrix isolation IR spectroscopic evidence of halogen bonding from a comparative study of complexes of CBr ₄ and CCl ₄ with acetone and formic acid, <u>Pujarini Banerjee, Indrani Bhattacharya</u> , Spectrochim. Acta Mol. Biomol. Spectrosc, 2021 , 250, 119355	International	13861425	Elsevier	2021
6.	Confinement effects on C–H and C–F stretching vibrational frequencies of difluoromethane in cold inert gas matrixes: a combined infrared spectroscopy and electronic structure theory study, <u>Pujarini Banerjee, Tapas Chakraborty</u> <i>European Physical Journal D</i> 2021 , 75, 131	International	1434-6060	Springer	2021

3. Research papers presented in conferences/seminars [Last 5 years]:

Serial No	Title of the Paper Presented	Title of the seminar/conference	Level [international/national/state]	Name of the organiser	Date
1.	Confinement effects on Molecular Vibrational frequencies	Spectroscopy and Dynamics of Molecules and Clusters	International	NISER Bhubaneswar	26/02/2022
2.	Conformations of linalool investigated through FTIR	Chemistry in Daily Life	International	Diamond Harbour Women's University	24/11/2022

	spectroscopy and electronic structure calculations			y	
3.	Prediction of nature resourced chemicals-metal conjugates by theoretical computational study	Applications of Radiotracers and Energetic Beams in Sciences	International	SidhoKanho Birsa University and International Atomic Energy Agency	31/1/23 to 5/2/23

4. Research Projects:

Serial No.	Title of the Research Project(s)	Funding Agency	Date of Award	Duration of the Project	Research Grants Amount	Status of the Project
1.	Infrared spectroscopic determination of structures and conformations of selected biogenic VOCs, and their interactions with small, biologically relevant molecules	SERB	21/12/21	2 years	32 lakhs	Ongoing

5. E-learning material, if any:

Course Details	Name of the Institution	Date/year of uploading	Quadrant I, II, III, IV	Link
Nil	NA	NA	NA	NA

6. Research Supervision (Ph.D./M.Phil.)

Serial No.	Name of the student	Research Topic	Name of the institution	Date of Registration	Year of Award of the Degree
1.					

7. Programmes Conducted / Organised as Convenor / Organising Secretary at DHWU [Last Five Years]

Serial No.	Date	Name of the Programme	Sponsored By
1.	10/1/19	International Symposium on Current trends in Chemistry	DHWU and Self-sponsoring by Department of Chemistry, DHWU
2.	14/9/21, 21/9/21, 24/9/21	International Virtual Symposium on Advances in Chemical Sciences	Royal Society of Chemistry
3.	24/11/22	Chemistry in Daily Life	DHWU and Self-sponsoring by Department of Chemistry, DHWU

8. Other Relevant Information, if any:

Serial No.	Achievements / Awards	Assignment Details [Membership of Professional Bodies/Editorial Board/BOS/BORS etc.]
1.		Member of BOS, Department of Chemistry, DHWU
2.		Member of BORS, Department of Chemistry, DHWU

Date: