Personal Details

Name	Dr. Saptarshi Ghosh
Current Position:	Research Assistant Professor at Frontier Institute of Biomolecular Engineering Research (FIBER), Konan University, Japan
Present Address	B203, 1-2-15 Wakinohamacho Hyogo International House, Chuo-ku, Kobe Japan, 651-0072
Permanent Address	AC-227, Mandakini Housing Co-operative Street No. 39, Newtown, Action Area I Kolkata – 700156, West Bengal India
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Phone No.	+91 9836787783 (India) +81 8088064453 (Japan)
Date of birth	July 02, 1989
Gender	Male
Marital Status	Married
Nationality	Indian

Education

Secondary (10^{th})	2005	WBBSE	First Division, 88.6%
Higher Secondary (12^{th})	2007	WBCHSE	First Division, 85.2%
B. Sc. (Chemistry)	2010	Jadavpur University	First Class, 63.6%
M. Sc. (Chemistry) (Physical Chemistry Special)	2012	Jadavpur University	First Class, 74.7%
NET	2011	CSIR-UGC	Rank: 84

Ph. D: Department of Chemistry, Jadavpur University, India (November, 2012- November, 2017).

Thesis Title: Effect of surfactants, cyclodextrins and salts on biological systems: Probing through internal or external fluorescence.

Supervisor: Prof. Nitin Chattopadhyay, Department of Chemistry, Jadavpur University, India.

Postdoctoral Research: Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, Japan (April, 2018 – September, 2021).

Supervisor: Prof. Naoki Sugimoto, Director, FIBER, Konan University, Japan.

Experience

October 2021 – till now: Research Assistant Professor at FIBER, Konan University, Japan

October 2019 - September 2021: JSPS Postdoctoral Researcher at FIBER, Konan University, Japan

April 2018 - September 2019: Postdoctoral Fellow at FIBER, Konan University, Japan

December 2017 – February 2018: Guest Lecturer at Vijaygarh Jyotish Ray College, Kolkata, India

November 2012 – November 2017: Research Fellow at Jadavpur University, Kolkata, India

Awards and Achievements

- **JSPS postdoctoral fellowship** from Govt. of Japan (October 2019- September 2021).
- '**Ohtsuka Award**' for Outstanding Oral Presentation for Young Scientist 2019 in International Symposium on Nucleic Acids Chemistry (ISNAC) held on October 29-31, 2019 at Tokyo University of Agriculture and Technology, Tokyo, Japan.
- **Outstanding Poster Presentation Award** from Japan Society of Nucleic Acids Chemistry (JSNAC) in International Symposium held on July 22-24, 2019 at Konan University, Kobe, Japan.
- **Editorial Board Member** of General Chemistry Journal (2019- till now).
- **Invited International Collaborator** at Osaka University, Japan of the project entitled "Application of Cooperative-Excitation into Innovative Molecular Systems with High-Order Photofunctions (PhotoSynergetics)" supported by the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT) during May-July, 2016.
- **Invited Lecturer in Science Dialogue Program 2020** at Tokushima Prefectural Jonan High School, Japan supported by JSPS held on November 18, 2020.
- Research Fellowship from University Grants Commission, Govt. of India (2012-2017).
- Inspire Fellowship (2007-2012), Department of Science and Technology, Govt. of India.
- Awarded Certificate of Recognition from American Chemical Society for reviewing ACS journals.

Conferences Attended

19. International Symposium on Nucleic Acids Chemistry (ISNAC) on November 10-12, 2021 by Tokyo Osaka University, Osaka, Japan. (Poster presentation)

18. 101st Annual meeting of Chemical Society of Japan on March 19-22, 2021 by University of Tokyo, Japan. (Oral presentation)

17. 14th Bio-related Chemistry Symposium on September 7-8, 2020, organized by Kyushu University, Japan. (Poster Presentation)

16. International webinar on Current Trends in Chemical and Material Sciences on June 3-4, 2020, organized by Department of Chemistry, Kazi Nazrul University, India. (Attended)

15. International Symposium on Nucleic Acids Chemistry (ISNAC) on October 29-31, 2019 at Tokyo University of Agriculture and Technology, Tokyo, Japan. (Oral presentation)

14. Commemorative International Symposium of the Japan Society of Nucleic Acids Chemistry on July 22-24, 2019 at Konan University, Kobe, Japan. (Poster presentation)

13. 99th Annual meeting of Chemical Society of Japan on March 16-19, 2019 at Konan University, Kobe, Japan. (Oral presentation)

12. Konan Research Summit (International conference) on December 04-06, 2018 at Konan University, Kobe, Japan. (Poster presentation)

11. International Symposium on Nucleic Acids Chemistry on November 07-09, 2018 at Kyoto University, Kyoto, Japan. (Poster presentation)

10. FIBER International Summit for Nucleic Acid on July 04-06, 2018 at Konan University, Kobe, Japan. (Poster presentation)

9. National conference on Electronic Structure, Spectroscopy and Dynamics on February 22-25, 2018 at Indian Association for the Cultivation of Science, Kolkata. (Oral presentation)

8. International symposium on Photosynergetics on June 02-04, 2016 at Osaka University, Osaka, Japan. (Attended)

7. National Seminar on Chemistry and Functional Materials of Current Interest on March 16, 2016 at Jadavpur University, Kolkata. (Attended).

6. International conference on Recent Advances in Molecular Spectroscopy on March 02-04, 2016 at University of Hyderabad, Hyderabad. (Poster presentation).

5. International conference on Advances in Spectroscopy and Ultrafast Dynamics on December 12-14, 2014 at Indian Association for the Cultivation of Science, Kolkata. (Poster presentation).

4. National Conference on Photosciences: Contemporary Challenges and Future Perspectives on December 12-14, 2013 at Jadavpur University, Kolkata. (Oral presentation).

3. National Fluorescence Workshop on November 24-28, 2013 at IISc. and JNCASR, Bangalore (Poster presentation).

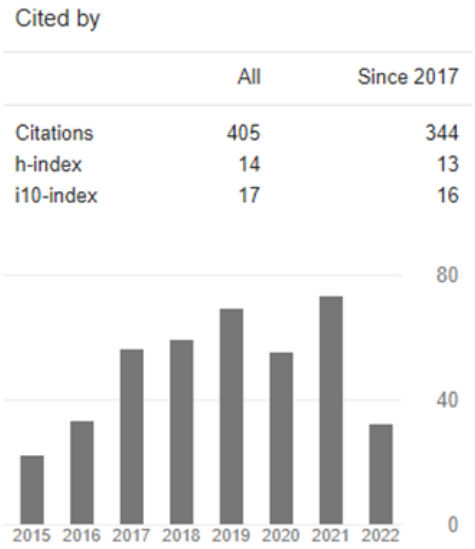
2. Seminar on Physical Chemistry Research: Teaching and Industrial Perspectives on September 28, 2013 at Jadavpur University, Kolkata. (Attended).

1. National Conference on Trends in Surface Science and Related Areas on May 03, 2013 at Department of Pharmaceutical Technology, Jadavpur University, Kolkata. (Attended).

Fields of Interest

- Predicting stability and thermodynamics of nucleic acids in cell-mimicking environments.
- Elucidating the role of non-canonical nucleic acid structures in biological processes like replication, transcription and translation for diagnosis and therapy of genetic diseases.
- Self-assembled media assisted delivery of bioactive molecular probes to the DNA by endogenous activation or by responses from external stimulant.
- Study of protein unfolding by surfactants and thermodynamic characterization of unfolding.
- Understanding the interaction of small molecular systems with biomimetic microheterogeneous environments like micelles, lipids and cyclodextrins for biomedical applications.
- Photophysical investigations of molecular systems in solutions phase and glassy matrices.

Publications



26. Dielectricity of a molecularly crowded solution accelerates NTP misincorporation during RNA-dependent RNA polymerization by T7 RNA polymerase

S. Takahashi, S. Matsumoto, P. Chilka, **S. Ghosh**, H. Okura, N. Sugimoto*

Sci. Rep., 2022, *12*, 1149 (**IF**: 4.379; **Citation**:0)

25. Prediction parameters for DNA duplex stability under crowding conditions

S. Ghosh*

Journal of the Japan Society of Nucleic Acids Chemistry (invited short-review), 2021, *5*, 8-14.

24. Improved nearest-neighbor parameters for the stability of RNA/DNA hybrids under a physiological condition

D. Banerjee, H. Tateishi-Karimata, T. Ohyama, **S. Ghosh**, T. Endoh, S. Takahashi, N. Sugimoto*

Nucleic Acids Res., 2020, *48*, 12042-12054. (Selected for **Cover Article**) (**IF**: 16.97; **Citation**: 11)

Correction: ***Nucleic Acids Res.***, 2021, *49*, 10796-10799.

23. Molecular crowding induces primer extension by RNA polymerase through base stacking beyond Watson-Crick rules

S. Takahashi, H. Okura, P. Chilka, **S. Ghosh**, N. Sugimoto*

RSC Adv., 2020, *10*, 33052-33058. (Selected as **HOT Article**) (**IF**: 3.361; **Citation**:6)

22. Nearest-neighbor parameters for predicting DNA duplex stability in diverse molecular crowding conditions

S. Ghosh, S. Takahashi, T. Ohyama, T. Endoh, H. Tateishi-Karimata, N. Sugimoto*

Proc. Natl. Acad. Sci. U. S. A., 2020, *117*, 14194-14201. (**IF**: 11.205; **Citation**: 21)

21. Preferential targeting cancer-related i-motif DNAs by the plant flavonol fisetin for theranostics applications

S. Takahashi, S. Bhattacharjee, **S. Ghosh**, N. Sugimoto*, S. Bhowmik*

Sci. Rep., 2020, *10*, 2504. (**IF**: 4.379; **Citation**:11)

20. Validation of the nearest-neighbor model for Watson-Crick self-complementary DNA duplexes in molecular crowding condition

S. Ghosh, S. Takahashi, T. Endoh, H. Tateishi-Karimata, S. Hazra, N. Sugimoto*

Nucleic Acids Res., 2019, *47*, 3284-3294. (Selected for **Cover Article**) (**IF**: 16.97; **Citation**: 21)

19. Photophysics of a coumarin based Schiff base in solvents of varying polarities

S. Ghosh, N. Roy, T. S. Singh, N. Chattopadhyay*

Spectrochim Acta A, 2018, *188*, 252-257. (**IF**: 4.098; **Citation**:18)

18. A promising strategy for improved solubilization of ionic drugs simply by electrostatic pushing

M. Afzal, P. Kundu, S. Das, **S. Ghosh**, N. Chattopadhyay*

RSC Adv., 2017, *7*, 43551-43559. (**IF**: 3.361; **Citation**:5)

17. Exploration of photophysics of 2,2´-pyridil at room temperature and 77 K: A combined spectroscopic and quantum chemical approach

P. Kundu, **S. Ghosh**, N. Chattopadhyay*

Photochem. Photobiol. Sci., 2017, *16*, 159-169. (**IF**: 3.98; **Citation**:5)

16. Endogenous activation-induced delivery of a biological photosensitizer from a micellar nanocarrier to natural DNA

M. Afzal, **S. Ghosh**, S. Das, N. Chattopadhyay*

J. Phys. Chem. B, 2016, *120*, 11492-11501. (**IF**: 2.991; **Citation**:16)

15. Fabrication of mixed phased TiO_2 heterojunction nanorods and their enhanced photoactivities

A. Tiwari, I. Mondal, **S. Ghosh**, N. Chattopadhyay, U. Pal*

Phys. Chem. Chem. Phys., 2016, *18*, 15260-15268. (**IF**: 3.676; **Citation**:36)

14. Relocation of a biological photosensitizer from non-ionic micellar carrier to DNA: A multispectroscopic investigation

M. Afzal, **S. Ghosh**, N. Chattopadhyay*

Biophys. Chem., 2016, *219*, 75-81. (**IF**: 2.352; **Citation**:3)

13. Impact of structural modification on the photophysical response of benzoquinoline fluorophores

P. Kundu, **S. Ghosh**, R. Karmakar, G. Maiti, N. Chattopadhyay*

J. Fluoresc., 2016, *26*, 845-854. (**IF**: 2.217; **Citation**:4)

12. Cyclodextrin induced controlled delivery of a biological photosensitizer from a nanocarrier to DNA

P. Kundu, **S. Ghosh***, S. Das, N. Chattopadhyay*

Phys. Chem. Chem. Phys., 2016, *18*, 3685-3693. (**IF**: 3.676; **Citation**:18)

11. Unprecedented high fluorescence anisotropy in protic solvents: Hydrogen bond induced solvent caging?

S. Das, **S. Ghosh**, N. Chattopadhyay*

Chem. Phys. Lett., 2016, *644*, 284-287. (**IF**: 2.328; **Citation**:14)

10. DNA induced sequestration of a bioactive cationic fluorophore from the lipid environment: A spectroscopic investigation

S. Ghosh, P. Kundu, N. Chattopadhyay*

J. Photochem. Photobiol. B, 2016, *154*, 118-125. (**IF**: 6.252; **Citation**:19)

9. Exploration of the binding interaction of a potential nervous system stimulant with calf-thymus DNA and dissociation of the drug-DNA complex by detergent sequestration

P. Kundu, **S. Ghosh***, N. Chattopadhyay*

Phys. Chem. Chem. Phys., 2015, *17*, 17699-17709. (**IF**: 3.676; **Citation**:38)

8. Modification of photophysics of 3-hydroxyflavone in aqueous solutions of imidazolium-based room temperature ionic liquids: A comparison between micelle-forming and non micelle-forming ionic liquids

S. Ghosh, N. Chattopadhyay*

RSC Adv., 2015, *5*, 49054-49061. (**IF**: 3.361; **Citation**:11)

7. Stepwise unfolding of bovine and human serum albumin by an anionic surfactant: An investigation using the proton transfer probe norharmane

S. Ghosh, S. Chakrabarty, D. Bhowmik, G. Suresh Kumar, N. Chattopadhyay*

J. Phys. Chem. B, 2015, *119*, 2090-2102. (**IF**: 2.991; **Citation**:29)

6. Binding interaction of differently charged fluorescent probes with egg yolk phosphatidylcholine and the effect of β-cyclodextrin on the lipid–probe complexes: A fluorometric investigation

P. Kundu, **S. Ghosh**, B. Jana, N. Chattopadhyay*

Spectrochim. Acta A, 2015, *142*, 15-24. (**IF**: 4.098; **Citation**:7)

5. Binding of an anionic fluorescent probe with calf thymus DNA and effect of salt on the probe-DNA binding: A spectroscopic and molecular docking investigation

S. Ghosh, P. Kundu, B. K. Paul, N. Chattopadhyay*

RSC Adv., 2014, *4*, 63549-63558. (**IF**: 3.361; **Citation**:38)

4. Interaction of β-cyclodextrin with nile red in a single live CHO Cell: An initiative towards developing a prospective strategy for excretion of adsorbed drugs from the cell membrane

S. Ghosh, S. Chattoraj, N. Chattopadhyay*

Analyst, 2014, *139*, 5664-5668. (**IF**: 4.616; **Citation**:15)

3. Interaction of cyclodextrins with human and bovine serum albumin: A combined spectroscopic and computational investigation

S. Ghosh, B. K. Paul, N. Chattopadhyay*

J. Chem. Sci., 2014, *126*, 931-944. (**IF**: 1.573; **Citation**:32)

2. Competitive binding of nile red between lipids and β-cyclodextrin

B. Jana, **S. Ghosh**, N. Chattopadhyay*

J. Photochem. Photobiol. B, 2013, *126*, 1-10. (**IF**: 6.252; **Citation**:29)

1. Determination of dissociation constants of weak acids and bases using indicators

S. Ghosh, N. Chattopadhyay*

Chem. Educator, 2013, *18*, 80-84. (**Citation**:1)

* Corresponding author

Society Membership

- 2018- ongoing Chemical Society of Japan (CSJ), Japan
- 2018- ongoing Japan Society of Nucleic Acids Chemistry (JSNAC), Japan

Served as reviewer for journals including ACS Chemical Biology (ACS), RSC Advances (RSC), Colloids and Surfaces B (Elsevier), Luminescence (Wiley) etc.

Courses Taken

Physical Chemistry Courses in Undergraduate level (Kinetic Theory of Gases, Quantum Chemistry)

REFERENCES:

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- *Prof. Sujoy Baitalik – Jadavpur University, India.*

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