

Faculty Profile



- 1. Name of the Faculty :** Dr. Ujjal Kumar Sur
- 2. Name of the Department :** Department of Chemistry, Behala College, Kolkata
- 3. Educational Qualifications (Graduation onwards) :**
Ph.D (JNU), M.Sc (JU), B.Sc (JU)
- 4. Current Designation :** Assistant Professor
- 5. Address of correspondence :** Greenfield City, Block-7, Flat-1F, 1st floor,
Jothshibrampur, Maheshtala, Kolkata-700141, Kolkata, West Bengal, India.
- 6. Date of Birth :** 21st September, 1974
- 7. Nationality :** Indian
- 8. Telephone Number :** 9831445492
- 9. Sex :** Male
- 10. E-Mail :** uksur99@yahoo.co.in
- 11. Specialization :** Physical chemistry, Electrochemistry, Nanotechnology, Surface Science
- 12. Languages known :** English, Hindi, Bengali
- 13. Total Teaching Experience :** 10 years of experience in teaching at both undergraduate and post graduate levels. Taught several courses in the post graduate levels at APC College, New Barrackpore, West Bengal State University, R K Mission residential College, Narendrapur, Sikkim University, Gangtok and Behala College, India.

14. Courses taught : Different areas of physical chemistry like surface and interfacial chemistry, electrochemistry, chemical kinetics, quantum chemistry, colloid chemistry, statistical thermodynamics, thermodynamics, spectroscopy, photochemistry, Polymer chemistry, Catalysis, Biophysical chemistry and Advanced Physics (Physics of Liquid Crystals), Nanoscience & Nanotechnology, Soft Matter.

15. Research Experience : I have 15 years of experience in research. I have completed five research projects funded by UGC, DST, BRNS-DAE, Government of India. I have the post-doctoral research experience of five years in UK, Taiwan and China.

16. Sponsored Research Projects :

- Principal Investigator of UGC, New Delhi sponsored Minor Research project titled “*Synthesis and Characterization of some functionalized gold nanoparticles for the detection of biomolecules*” (**Amount** : Rs.1,56,000). (**completed**) (2010-2012)
- Co-Investigator of BRNS-DAE sponsored Major Research Project titled “*Fluorescence spectroscopic investigations of organic molecules adsorbed on isotropic and anisotropic gold and silver nanoclusters for advanced understanding of SERS effect*”. (**Amount** : Rs 33, 74, 259) (**completed**) (2013-2016)
- Co-Investigator of DST, New Delhi, sponsored Major Research Project titled “*Fabrication of Highly ordered SERS active Nanostructured substrates using Langmuir-Blodgett Technique to understand the enhancement mechanism in SERS*”. (**Amount** : Rs 28,20, 000). (**completed**) (2013-2016)
- Principle Investigator of UGC-DAE CSR, Kolkata centre sponsored Collaborative Research Project titled “*Synthesis of metal nanoparticles and chemically modified graphene by radiation based methods and their use as effective surface-enhanced Raman scattering (SERS) active substrates*”. (**Amount** : Rs 1,20,000). (**completed**) (2014-2017)
- Principal Investigator of UGC, New Delhi sponsored Minor Research project titled “*Synthesis of metal nanoparticles and chemically modified*

graphene by chemical, electrochemical and radiation based methods and their use as effective surface-enhanced Raman scattering (SERS) active substrates”.

(Amount : Rs 2,90,000). (completed) (2014-2016)

- Principle Investigator of WBDST, Kolkata (W.B. State DHESTBT) sponsored Research Project titled “*Rapid identification of pathogens employing biosynthesized metal nanoparticles as SERS active substrate*”. (Amount : Rs 12,10,800.00). (ongoing) (2018-2021)

17. Number of Research students : Guiding two Ph.D students at present. Amar

Ghosh and Pulak Das, registered for Ph.D degree at Jadavpur University, Kolkata.

1. Pulak Das, Registered on 18. 6. 2018, Department of Physics, Jadavpur University, Kolkata. (Registration no : JU/PHYS/1891/2018)
2. Amar Ghosh, Department of Chemistry, Jadavpur University, Kolkata.

18. Orientation/Refresher Course attended :

Name of the course/Summer School	Place	Duration	Sponsoring Agency
1.Orientation programme (OP-99)	Academic staff college, University of Calcutta (UGC-ASC, CU)	February 2, 2013 to March 2, 2013	UGC, New Delhi
2.Science Academies’ Refresher course on Thin Films and Nanoscience	Department of Physics, Tripura University, Suryamaninagar-799022, Tripura	May 4, 2015 to May 18, 2015	Indian Academy of Sciences, Bangalore, Indian National Science Academy, New Delhi and The National Academy of Sciences India, Allahabad

19. Participation in conferences, symposia and workshops :

Paper presentation :

- Ujjal Kumar Sur*, Balprasad Ankamwar, Prachi P Kour, Diptika Paul, Kushal Chakraborty and Kaustav Roy “The Wonder of Swarna Bhasma : A traditional Indian Medicine or Nanomedicine?”. **One day National Symposium**

- on Science Behind Homeopathy, February 20, 2016, Birla Industrial and Technological Museum, Kolkata. (Poster presentation)
- **Ujjal Kumar Sur*, Balaprasad Ankamwar, Prachi P Kour, Somyajit Khan, Abhijit Saha and Aparna Dutta** “Green Synthesis of Silver nanoparticles using high energy gamma radiation and their use as potential SERS active substrate.” **National Thematic Workshop on Recent Advances in Materials Sciences, March 8-9, 2016, Department of Physics, University of Burdwan.** (Poster presentation)
 - **Ujjal Kumar Sur* & Balaprasad Ankamwar**, “Green Synthesis of Metal Nanoparticles with Environmental issues”, **UGC-sponsored State level Seminar on Environmental Pollution: Causes, Impacts & Control, April 25, 2015, organized by The Bhawanipur Education Society College, Kolkata.** (Poster presentation).
 - **Ujjal Kumar Sur*, Abhijit Saha and Aparna Dutta** “Green Synthesis of nanomaterials using high energy gamma radiation”. **National Conference on Study of Matter Using Intense Radiation Sources and Under Extreme Conditions**, November 3-6, 2016, UGC-DAE, Consortium for Scientific Research University Campus, Khandwa Road, Indore-452001, Indore, MP. (Poster presentation).
 - **Ujjal Kumar Sur*** “Graphene and graphene based polymer nanocomposites, the new wonder materials of the nanoworld,” 4th International Conference on Polymer Processing and Characterization (ICPPC 2016), Mahatma Gandhi University, Priyadarshini Hills, Kottayam, Kerala, 9-11 December, 2016. (Invited oral presentation)
 - **Ujjal Kumar Sur* and Balaprasad Ankamwar*** “Green synthesis of Silver nanoparticles using the plant extract of Shikakai and Reetha,” Second International Conference on Material Science (ICMS-2017) to be held at Department of Physics, Tripura University, Agartala, Tripura, 16 – 18 February, 2017. (oral presentation)
 - Surface-enhanced Raman Scattering : A new Diagnostic tool for Rapid Culture free detection of Pathogens. Two days of Seminar on Twists and Turns in Physics

- Research (TTPR 2017), **February 21-22, 2017, Department of Physics, Jadavpur University.** (Invited oral presentation)
- Surface-enhanced Raman scattering (SERS) spectroscopy : An overview of SERS active substrates and applications. **7th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2018), Bhabha Atomic Research Centre (BARC), Mumbai, November 25 to November 29, 2018.** (Invited oral presentation)
 - Green synthesis of Nanomaterials. **International Conference on Innovation in Materials Science & Technology (IMST 2018), Amity University, Kolkata, December 14 to December 16, 2018.** (Invited oral presentation)

20. List of Publications : (In journals):

1. **Ujjal Kumar Sur*** “A near-infrared light photosynthetic pigment” *CURRENT SCIENCE*, 100, 10 February 2011, p 286-287.
2. **Ujjal Kumar Sur*** “Lunar Water” *CURRENT SCIENCE*, 100, 10 March 2011, p 616-617.
3. **Ujjal Kumar Sur*** “Application of nanoparticles in electroanalysis” *Nano Science & Nano Technology : An Indian Journal*, 5, 2011, p 51-58 (Review Article).
4. **Ujjal Kumar Sur*** “Homeopathic Treatments based on Nanotechnology?” *CURRENT SCIENCE*, 100, 10 April 2011, p 977-978.
5. **Ujjal Kumar Sur*** “Electrochemistry with boron-doped diamond electrodes”. *Research and Reviews in Electrochemistry*, 3, 2012, p 20-25 (Review article).
6. **Ujjal Kumar Sur*** “Capillary force induced Tuning of Suspension Rheology” *CURRENT SCIENCE*, VOL. 100, NO. 9, 10 MAY 2011, p 1283-1284.
7. **Ujjal Kumar Sur*** “Supercapacitors or Electrochemical Capacitors : New energy storage device and alternative to battery”. *Materials Science: An Indian Journal*, 8, 2012, p 44-52.
8. **Ujjal Kumar Sur*, A. Dhasan, V. Lakshminarayanan**, “A simple and low-cost ultramicroelectrodes fabrication and characterization method for undergraduate students.” *Journal of Chemical Education (ACS publication)*, 2012, Vol. 89, p

168-172.

9. **Ujjal Kumar Sur*** “Bismuth Electrode : An extremely promising alternative to Electrochemical Stripping Analysis”. **Research and Reviews in Electrochemistry**, **3**, 2012, p 90-93 (Review article).
10. **Ujjal Kumar Sur*** “A lithium superionic conductor as a new solid-state battery electrolyte” *CURRENT SCIENCE*, VOL. 101, NO. 9, 10 November 2011, p 1129-1130.
11. **Ujjal Kumar Sur*** “Effect of pH on the barrier properties of 11-mercaptop undecanoic acid and 4-amino thiophenol SAMs on gold”. **Research and Reviews in Electrochemistry**, **3**, 2012, p 144-149.
12. **Ujjal Kumar Sur*** “Efficient storage of hydrogen fuel in formic acid using an active iron-based catalytic system” *CURRENT SCIENCE*, VOL. 102, NO. 3, 10 February 2012, p 384.
13. **Balaprasad Ankamwar, Gopa Mandal, Ujjal Kumar Sur and Tapan Ganguly**, “An Effective Biogenic Protocol for room temperature one step synthesis of defective nanocrystalline silver nanobuns using leaf extract”. **Digest Journal of Nanomaterials and Biostructures**, **7**, April-June 2012, p 599-605.
14. **Ujjal Kumar Sur***, **Gopa Mandal and Tapan Ganguly**, “Physicochemical characterization of *Swarna Bhasma*: A micro/nanoparticle used in traditional *Indian* medicine”. **Nanoscience & Nanotechnology : An Indian Journal**, **6**, 2012, p 104-107.
15. **Gopa Mandal, Amrita Chakraborty, Ujjal Kumar Sur, Balaprasad Ankamwar, Asish De and Tapan Ganguly**, “Synthesis, characterization, photophysical properties of a novel organic photoswitchable dyad in its pristine and hybrid nanocomposite forms”. **Journal of Nanoscience & Nanotechnology**, **V 12**, P 4591-4600, June 2012.
16. **Ujjal Kumar Sur*** “Graphene : A rising star on the horizon of Materials Science”. **International journal of Electrochemistry**, **Hindawi Publications**, special issue on **Impact of Nanomaterials and Surface Enhanced Raman Spectroscopy (SERS) in Electrochemical Research**, 2012, doi:10.1155/2012/237689.

17. **Ujjal Kumar Sur***, “Graphene: The two-dimensional carbon nanomaterial,” **Nanoscience & Nanotechnology : An Indian Journal**, **7**, 2013, p 156-161.
18. **Ujjal Kumar Sur***, “Surface-enhanced Raman scattering (SERS) spectroscopy: a versatile tool in electrochemistry,” **Research and Reviews in Electrochemistry**, **3**, 2013, p 109-116.
19. **Ujjal Kumar Sur*** and **Joydeep Chowdhury**, “Surface-enhanced Raman scattering (SERS) : Overview of a versatile technique used in Electrochemistry and Nanoscience” **Current Science (Review article)** **Vol. 105**, 10 th October 2013, p 923-939.
20. **Ujjal Kumar Sur*** “Surface-enhanced Raman scattering (SERS) Spectroscopy : A versatile spectroscopic and analytical technique used in Nanoscience and Nanotechnology,” **Advances in Nano Research**, **Vol. 1, No. 2**, 2013, p 111-124.
21. **Ujjal Kumar Sur*** “Imaging of organic and biological materials by in-focus transmission electron microscopy” **CURRENT SCIENCE**, **Vol. 106, No. 1**, 10 January 2014, p 17-19.
22. **Ujjal Kumar Sur*** “Bio-inspired hemispherical digital cameras of wide-angle field of view,” **CURRENT SCIENCE**, **Vol. 107, No. 1**, 10 July 2014, p 18-19.
23. **Ujjal Kumar Sur*** “Biological green synthesis of gold and silver nanoparticles” **Advances in Nano Research**, **Vol. 2, No. 3**, 2014, p 135-145.
24. **Ujjal Kumar Sur***, **Abhijit Saha**, **Aparna Datta**, **Balaprasad Ankamwar**, **Farah Surti**, **Sannak Dutta Roy** and **Debasish Roy**, “Synthesis and Characterization of stable aqueous dispersions of Graphene”. **Bulletin of Materials Science (Springer)** **Vol. 39, No. 1**, February 2016, p 159-165.
25. **Ujjal Kumar Sur*** “Self-Assembled Monolayers (SAMs) of Organic Thiols : An Overview. **Journal of Advanced Studies**, **Volume 1**, January 2015, p 14-20.
26. **Balaprasad Ankamwar**, **Mrunali Gharge** and **Ujjal Kumar Sur**, “Photocatalytic Activity of Biologically synthesized Silver nanoparticles using Flower extract”. **Advanced Science, Engineering and Medicine**, June 2015, **Vol. 7**, p 480-484.

27. **Balaprasad Ankamwar, Mrunali Gharge and Ujjal Kumar Sur**, “Photocatalytic and Surface-Enhanced Raman Scattering (SERS) activity of Biosynthesized Anisotropic Gold Nanoparticles”. **Advanced Science, Engineering and Medicine**, August 2015, Vol. 7, p 717-721
28. **Balaprasad Ankamwar, Pulak Das and Ujjal Kumar Sur***, “Graphene–gold nanoparticle-based nanocomposites as an electrode material in supercapacitors” **Indian Journal of Physics**, 2016, Vol. 90, p. 391-397, DOI 10.1007/s12648-015-0765-x.
29. **Ujjal Kumar Sur*** “Raman spectroscopic findings of new molecular phase in hot dense hydrogen,” **CURRENT SCIENCE**, Vol. 109, No. 7, 10 October 2015, p 1226-1227.
30. **Balaprasad Ankamwar, Sachin Pansare and Ujjal Kumar Sur** “Centrifuge controlled shape tuning of biosynthesized gold nanoparticles obtained from *Plumbago zeylanica* plant extract,” **Journal of Nanoscience and Nanotechnology**, 2017, Vol. 17, p 1041-1045.
31. **Balaprasad Ankamwar, Prachi Kour, Ujjal Kumar Sur and Tapan Ganguly** “Spontaneous Shape Transformation of Capsular Silver Microcrystals into Defective *Nanocrystals in Aqueous Solution*,” **Journal of Nanoscience and Nanotechnology** , 2017, Vol. 17, p 3122-3129.
32. **Ujjal Kumar Sur*** “Onions can bend, contract and elongate just like muscles”
CURRENT SCIENCE, Vol. 110, No. 6, 25 March 2016, p 967-968.
33. **Balaprasad Ankamwar, Ujjal Kumar Sur, Manjunath Salgaonkar, and Loka Subramanyam Sarma** “Room Temperature Biosynthesis of Highly Stable Triangular and Hexagonal Shaped Silver Nanoparticles Using *Cordia myxa* Fruit Extract,” **Adv. Sci. Eng. Med.**, 2016, Vol. 8, p 868–874.
34. **Ujjal Kumar Sur***, **Abhijit Saha, Aparna Datta, Animesh Halder and Sanat Karmakar** “Green synthesis of Highly stable Zinc sulphide nanostructures using high energy gamma radiation,” **Bulletin of Materials Science (Springer)** (Accepted).

35. **Balaprasad Ankamwar, Manjunath Salgaonkar, and Ujjal Kumar Sur** “Room Temperature Green Synthesis of Anisotropic Gold Nanoparticles Using Novel Biological Fruit Extract,” **Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry (Taylor and Francis), 2017, Vol. 47, p 1359–1363.**
36. **Renuka Bhor, Rohit Kumar Gupta, Ujjal Kumar Sur, Kalpana Pai, and Balaprasad Ankamwar** “Synthesis of Hydroxyapatite and Study on Their Anti-Proliferative and Cytotoxic Effect Against Human Lung, Cervical Cancer and Normal Human Cells,” **Adv. Sci. Eng. Med., 2017, Vol. 9, p 445-452.**
37. **Soumav Nath, Ashik Biswas, Prachi P. Kour, Loka S. Sarma, Ujjal Kumar Sur*, and Balaprasad G. Ankamwar** “Synthesis of Mesoporous Nanocrystalline Zirconia by Surfactant-Assisted Hydrothermal Approach,” **Journal of Nanoscience and Nanotechnology, 2018.**
38. **A. Esakkiammal, A. Malathi, Ujjal Kumar Sur*, Balaprasad Ankamwar,** “Honey mediated Green synthesis of Photoluminescent Zinc Sulphide nano/micro particles,” **Res. Med. Eng. Sci., 2018.**
39. **Ujjal Kumar Sur*, Amar Ghosh,** “Rapid culture free Pathogen detection using SERS technique,” **Asian Journal of Physics, Vol. 27, Nos 7 & 8 (2018) 423-433.**

*** corresponding author**

(In conference proceedings) :

1. **Ujjal Kumar Sur*** “Recent Advancement in Surface Enhanced Raman Scattering (SERS) Spectroscopy” **Proceedings of UGC sponsored National Seminar on Modern Trends in Spectroscopy :It’s Application in Chemistry & Biology, organized by Maulana Azad College, 3-4 Febraury, 2011, p 61-67.**
2. **Ujjal Kumar Sur*** “The Wondrous World of Nanoscience and Nanotechnology” **Proceedings of National Symposium on Trends in Nanoscience and Related Areas, December 9-10, 2010, organized by Department of Chemistry, Behala College, Kolkata-60.**
3. **Ujjal Kumar Sur*** “Behaviour of Water at the Nanoscale” **Proceedings of National Symposium on Trends in Nanoscience and Related Areas, December 9-10, 2010, organized by Department of Chemistry, Behala College, Kolkata-60.**

4. **Ujjal Kumar Sur*** “The journey of Molecular Electronics to Nano Electronics”
**Proceedings of National Seminar (UGC, New Delhi sponsored) on the
 Physics behind the Electronics/Optoelectronics and their Applications
 (PEAA-2011), Department of Physics, Sammilani Mahavidyalaya, Kolkata,
 India, Editors : Dr. Joydeep Chowdhury and Bipan Dutta, ISBN : 978-81-
 922836-0-9, p 44-51.**
5. **A.Paul, M. Das, Ujjal Kumar Sur, D.Mukherjee and H. Saha.** “Low cost
 supercapacitors based on activated carbon coated lead as electrode material”
**Proceedings of International Conference on Advances in Energy Research
 (ICAER-2011), December 9-11, 2011, IIT Bombay, Mumbai.**
6. **Ujjal Kumar Sur ***, Joydeep Chowdhury, Tapan Ganguly, “Recent
 Advancement in Surface Enhanced Raman Scattering (SERS) Spectroscopy”,
**Proceedings of the National conference on Advances in Lasers and
 Spectroscopy (ALS-2012) 01-03 November, 2012, Indian School of Mines
 (ISM) Dhanbad, India, Editors : V. K. Rai, P. Mishra and K. Kumar, Allied
 Publishers, ISBN : 978-81-8424-806-7, p 65-71.**
7. **Ujjal Kumar Sur* & Balaprasad Ankamwar**, “Green Synthesis of Metal
 Nanoparticles with Environmental issues”, **Proceedings of the UGC-sponsored
 State level Seminar on Environmental Pollution: Causes, Impacts & Control,
 organized by The Bhawanipur Education Society College, Kolkata, April 25,
 2015. Coherence, December 2015, ISBN No. 978-81-930092-6-0, Vol. 1, Issue 2, p
 57-64.**

Citation Reports

Google Scholar

Total Publications : 64

Total Citations : 733

h-index : 16

i10-index : 20

Scopus

Total Publications : 64

Total Citations : 461

h-index : 11

21. Books Published :

1. Book : (Edited) “Modern Aspect in Chemistry”, by Ujjal Kumar Sur, Chittaranjan Santra and Joydeep Chowdhury, ISBN : 978-3-8454-0202-4, Lambert Academic Publisher (LAP), Germany, 2012.
2. Book : (Edited) “Emerging Frontiers in Chemistry”, by Ujjal Kumar Sur and Srabasti Chakraborty, ISBN : 978-3-659-32996-8, Lambert Academic Publisher (LAP), Germany, 2013.
3. Book : (Edited) “Emerging Frontiers in Materials Science”, by Ujjal Kumar Sur and Amitabha Bhattacharyya, ISBN : 978-3-659-49805-3, Lambert Academic Publisher (LAP), Germany, 2013.
4. Book : (Edited) “Modern Aspect in Materials Physics & Chemistry”, by Ujjal Kumar Sur and Amitabha Bhattacharyya, ISBN : 978-3-659-60640-3, Lambert Academic Publisher (LAP), Germany, 2015.

22. Conferences, seminars, symposia and workshops organized as

Convenor :

- Convenor of the Symposium (*National Symposium on Trends in Nanoscience and Related Areas, December 9-10, 2010, organized by Department of Chemistry, Behala College, Kolkata-60*).
- Convenor of UGC-sponsored state level seminar titled “***Emerging Frontiers in Chemistry***”, December 10, 2012, organized by the Department of Chemistry, Behala College.

23. Awards/Recognitions received :

Awards

Junior Research Fellowship award, CSIR, India., 1998. University Gold medalist, Jadavpur University, India., 1996 & 1998. INSA Visiting Scientist award, INSA, India., 2014.

Memberships

Life Mem. : American Nanosociety, USA. DNA Society of India, India. Mem. : American Chemical Society, USA.

24. Other activities and achievements:

- Reviewer of the journals “*Journal of Colloid and Interface Science*”, “*Current Science*”, “*J. Chem. Edu. (ACS)*”, “*Physics and Materials Chemistry*”, “*Spectrochim. Acta A*”, “*Advances in Nano Research*”, “*J. Raman. Spectroscopy*”, “*Ind. J.Phys*”, “*Analytical Methods (RSC)*”, *Sensors and Actuators : B, Materials Chemistry & Physics (Elsevier)*, *Materials Science & Technology*, *Electroanalysis*, *Omega (ACS)*, *Heliyon (Elsevier)*, *Asian Journal of Physics*.
- In Editorial Board of the journal “*Journal of Applied Sciences Research*”, “*Nanomaterials and Nanotechnology*”, “*International journal of Electrochemistry*”, “*Advances in Nano Research: An International journal*”, “*Physics and Materials Chemistry*”.
- Joint Editor of the journal “*Journal of Advanced Studies*” published by Behala College, Kolkata, India [ISSN : 2394-7241]
- Guided five M.Sc students for their M.Sc projects.
- Guiding two Ph.D students at present.
- Acted as Chairman for one session in the conference “4th International Conference on Polymer Processing and Characterization (ICPPC 2016),” Mahatma Gandhi University, Priyadarshini Hills, Kottayam, Kerala, December 9-11, 2016.

