



UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE/ CV

Full name of the faculty member: DR. SUKHENDU MANDAL

Designation: Assistant Professor

Specialisation : Bacteriology

Contact information :

Dept of Microbiology, #5, Ballygunge Circular Road, Kolkata -19 ; e-mail:
sukhendu1@hotmail.com

Academic qualifications:

College/ university from which the degree was obtained	Abbreviation of the degree
SuriVidyasagar College	B.Sc
Visva- Bharati University	M.Sc
Bose Institute	Ph.D
Waksman Institute	Postdoc

Positions held/ holding:

Assistant Professor Dept. of Microbiology, Tripura university; June'12 to Dec'12.

Assistant Professor Dept. of Microbiology, Tripura university; Dec'12 to present

Research interests:

- Role of alternate sigma factors in Mycobacterial gene expression. Studies on the alternate RNAP holoenzymes and transcription factors involved during stress.
- Identification and characterization of novel inhibitors of *M. tuberculosis* and *S. aureus* RNA Polymerase.
- Isolation and characterization of novel bacterial species based on their hydrocarbon or rubber degradation properties.
- Identification of novel Actinomycetes for their unique antimicrobial components.....

Research guidance :

Number of researchers awarded M.Phil/ Ph.Ddegrees :none.....

Number of researchers pursuing M.Phil/ Ph.D :04

Current projects :

NAME OF THE PROJECT	NAME OF PI /CO-PI	DURATION	AMOUNT	AGENCY
Selective exploration of diverse soil, symbiotic and marine actinomycetes on the basis of their unique bioactive compound production	Dr. Sukhendu Mandal	3 yrs	23.4 lakhs	DST
Characterization of the alternate gene locus that regulates chemolithotrophic sulfur oxidation in a novel bacterium <i>Pseudaminobacter salicylatoxidans</i> KCT 001	Dr. Sukhendu Mandal	2 yrs	6 lakhs	UGC
Structural and biochemical analysis of Mycobacterial ECF sigma and evaluation of its role on gene expression	Dr. Sukhendu Mandal	3yrs	15 lakhs	WB-DST

1. Select list of publications:

a) **Journals:**

- Sohini Guha, Monolina Sarkar, Pritha Ganguly, Md Raihan Uddin, **Sukhendu Mandal**, and Maitrayee Das Gupta (2016) Segregation of nod-containing and nod-deficient bradyrhizobia as endosymbionts of *Arachis hypogaea* and as endophytes of *Oryza sativa* in intercropped fields of Bengal Basin, India **Environmental Microbiology**; DOI: [10.1111/1462-2920.13348](https://doi.org/10.1111/1462-2920.13348). (IF: 6.20)

- Ajit Kumar Mahapatra Srimanta Manna Parthasarathi Karmakar Kalipada Maiti Rajkishor Maji Debasish Mandal Raihan Uddin **Sukhendu Mandal (2016)**. Installation of efficient quenching groups of a fluorescent probe for the specific detection of cysteine and homocysteine over glutathione in solution and imaging of living cells. **Supramolecular Chemistry**. DOI: [10.1080/10610278.2016.1170127](https://doi.org/10.1080/10610278.2016.1170127). (IF: 2.39)
- Ajit Kumar Mahapatra, Sanchita Mondal, Saikat Kumar Manna, Kalipada Maiti, Rajkishor Maji, Syed Samim Ali, **Sukhendu Mandal**, Md. Raihan Uddin and Dilip Kumar Maiti. (2016). Highly selective ratiometric fluorescent probes for detection of perborate based on excited-state intramolecular proton transfer (ESIPT) in environmental samples and living cells. **Chemistry Select**. DOI: [10.1002/slct.201500032](https://doi.org/10.1002/slct.201500032). (IF: 3.2)
- Manab Mandal, Saikat Paul, Raihan Uddin, Mohabul Alam Mondal, **Sukhendu Mandal**, Vivekananda Mandal. (2016) In vitro antibacterial potential of *Hydrocotyle javanica* Thunb. **Asian Pacific Journal of Tropical Disease**. 6(1): 54-62.
- Ajit Kumar Mahapatra, Sanchita Mondal, Saikat Kumar Manna, Kalipada Maiti, Rajkishor Maji, Syed Samim Ali, Debasish Mandal, Md. Raihan Uddin and **Sukhendu Mandal (2016)** Reaction-based sensing of fluoride ions using desilylation method for triggering excited-state intramolecular proton transfer, **Supramolecular Chemistry**, DOI: [10.1080/10610278.2015.1122195](https://doi.org/10.1080/10610278.2015.1122195). (IF: 2.39)
- Ajit Kumar Mahapatra, Syed Samim Ali, Kalipada Maiti, Saikat Kumar Manna, Rajkishor Maji, Sanchita Mondal, Md. Raihan Uddin, **Sukhendu Mandal** and Prithidipa Sahoo (2015) Aminomethylpyrene-based Imino-Phenol as Primary Fluorescence Switch-on Sensors for Al³⁺ in Solution and in Vero Cells and their Complexes as Secondary Recognition Ensemble toward Pyrophosphate. **RSC Adv.**, DOI: [10.1039/C5RA16641A](https://doi.org/10.1039/C5RA16641A) (IF: 3.84)
- Ajit Kumar Mahapatra, Rajkishor Maji, Kalipada Maiti, Saikat Kumar Manna, Sanchita Mondal, Syed Samim Ali, Srimanta Manna, Prithidipa Sahoo, **Sukhendu Mandal**, Md. Raihan Uddin and Debasish Mandal (2015) A BODIPY/pyrene-based chemodosimetric fluorescent chemosensor for selective sensing of hydrazine in the gas and aqueous solution state and its imaging in living cells. **RSC Adv.**, DOI: [10.1039/C5RA10198K](https://doi.org/10.1039/C5RA10198K) (IF: 3.71)
- Aayatti Mullick Gupta, Purab Pal and **Sukhendu Mandal*** (2015) Structural analysis of sigma E interactions with core RNA polymerase and its cognate P-

hsp20 promoter of *Mycobacterium tuberculosis*. **Journal of Biomolecular Structure and Dynamics**. 34(4):792-9; DOI:10.1080/07391102.2015.1054432. (IF: 2.98)

- Gupta AM, Bhattacharya S, Bagchi A and **Mandal S*** (2015) Implication from the predicted docked interaction of sigma H and exploration of its interaction with RNA polymerase in *Mycobacterium tuberculosis*. **Bioinformatics**. 11(6): 296-301. DOI: 10.6026/97320630011296 (IF: 0.62)
- Jhuma Biswas, **Sukhendu Mandal** and Amal Paul (2015) Production, purification and some bio-physicochemical properties of EPS produced by *Halomonas xianhensis* SUR308 isolated from a saltern environment. **Journal of Biologically Active Products from Nature**. DOI: 10.1080/22311866.2015.1038852. (IF: NA)
- Rituparna Das, Arundhati Pal, **Sukhendu Mandal** and Amal Paul (2015) Screening and Production of Biodegradable Polyester Poly(3-hydroxybutyrate) by Bacteria Endophytic to *Brassica nigra* L. **British Biotechnology Journal**. 7, 134-146, Article no.BBJ.2015.054. (IF: NA)
- Mahapatra AK, Mondal S, Manna SK, Maiti K, Maji R, Uddin R Md, **Mandal S**, Deblina Sarkar, Tapan K. Mondal and Dilip K. Maiti. (2015) A New Selective Chromogenic and Turn-On Fluorogenic Probe for Copper (II) in Solution and Vero Cells: Recognition of Sulphide by [CuL]. **Dalton Trans.**, 44(14):6490-501, DOI: 10.1039/C4DT03969F. (IF: 4.1)
- Mahapatra AK, Mondal S, Maiti K, Manna SK, Maji R, Mandal D, **Mandal S**, Goswami S, Quah SK and Fun HK. (2014) A pyrenethiazole conjugate as a ratiometric chemosensor with high selectivity and sensitivity for tin (Sn⁴⁺) and its application in imaging live cells. **RSC Adv.**, 4, 56605-56614. (IF: 3.71)
- Mahapatra AK, Manna SK, Maiti K, Mondal S, Maji R, Mandal D, **Mandal S**, Uddin MR, Goswami S, Quah CK, and Fun HK. (2014) An azodye-rhodamine-based fluorescent and colorimetric probe specific for the detection of Pd(2+) in aqueous ethanolic solution: synthesis, XRD characterization, computational studies and imaging in live cells. **Analyst**. 140, 1229-1236. DOI: 10.1039/c4an01575d. (IF: 3.91)
- Degen D, Feng Y, Zhang Y, Ebricht KY, Ebricht YW, Gigliotti M, Vahedian-Movahed H, **Mandal S**, Talaue M, Connell N, Arnold E, Fenical W, Ebricht RH. (2014). Transcription inhibition by the depsipeptide antibiotic salinamide A. **Elife**. e02451. DOI: 10.7554/eLife.02451. (IF: 8.52)

- **Mandal S*** and Das Gupta S. K. (2012) Interactions of SoxR with its promoters involve different binding geometries. **Archives of Microbiology** **194**, 737-747. (IF: 1.86)
- **Mandal S*** and Ghosh W (2012). The mechanism of regulation of chemolithotrophic sulfur oxidation in *Pseudaminobacter salicylatoxidans* KCT001. **Research & Reviews: A Journal of Microbiology & Virology**. **2**, 24-29. (IF: NA)
- **Mandal S*** (2012) The sulfur oxidation operon repressor-function is influenced by the product of its adjacent upstream ORF in *Pseudaminobacter salicylatoxidans* KCT001. **Current Microbiology**. **64**, 259-264. (IF: 1.4)
- **Mandal S**, Chatterjee S, Dam B, Roy P, and Das Gupta S. K. (2007) The dimeric repressor SoxR binds cooperatively to the promoter(s) regulating expression of the sulfur oxidation (*sox*) operon of *Pseudaminobacter salicylatoxidans* KCT001. **Microbiology**, **153**, 80-91. (IF: 3.23)
- Dam B, **Mandal S**, Ghosh W, Das Gupta S. K, and Roy P. (2007). Mutation in a molybdopterin cofactor biosynthetic locus impairs chemolithotrophic oxidation of thiosulfate as well as tetrathionate in the betaproteobacterium *Tetrathio bacter kashmirensis*: Evidence for sulfite inhibition of the tetrathionate intermediate (S₄l) pathway of sulfur oxidation. **Research in Microbiology**, **158**, 330-338. (IF: 2.99)
- Lahiri, C., **Mandal S***, Ghosh, W., Dam, B. and Roy, P. (2006) Sulfur oxidation gene cluster, *soxSRT-soxVWXYZABCD*, essential for chemolithotrophic oxidation of thiosulfate and tetrathionate by *Pseudaminobacter salicylatoxidans* KCT001. **Current Microbiology**, **52**, 267-273. (IF: 1.4)
- Ghosh W, **Mandal S**, and Roy P. (2005) *Paracoccus bengalensis* sp. Nov., a novel sulfur-oxidizing chemolithoautotroph from the rhizospheric soil of an Indian tropical leguminous plant. **Systematic and applied Microbiology**. **29**, 396-403. (IF: 3.5)
- Ghosh W, Bagchi A, **Mandal S**, Dam B and Roy P. (2005) *Tetrathio bacter kashmirensis* gen. nov., sp. nov., a novel mesophilic, neutrophilic, tetrathionate-oxidizing, facultatively chemolithotrophic betaproteobacterium isolated from soil from a temperate orchard in Jammu and Kashmir, India. **Int J Syst Evol Microbiol**. **55**, 1779-1787. (IF: 2.8)

b) **Books/ book chapters :**

- Genomics of Bacterial Chemolithotrophy, October 2014; Publisher: Scholar's Press, ISBN: 978-3-639-66607-6.....

c) *Conference/ seminar volumes:*

- **Abstract and Poster presentation** “Recombinant Mycobacterium tuberculosis RNA polymerase: structural studies, identification and characterization of inhibitors.” Mandal S, Yi J, Srivastava A, Zhang Y and Ebright R. H. Howard Hughes Medical Institute, Waksman Institute, and Department of Chemistry, Rutgers University, Piscataway NJ 08854, USA: in **FASEB** summer research conference on title “Mechanisms and Regulation of Prokaryotic Transcription” at Saxtons River, Vermont, USA from 19th June to 23th June, 2011.
- **Abstract and Poster presentation** “Class-I lariat peptides siamycin I and siamycin III: inhibition of bacterial RNA polymerase, and cloning, sequencing, and surrogate-host expression of biosynthetic gene clusters.” Mandal S, Niedfeld RR, Semenova E, Kravets A, Ebright YW, Mukhopadhyay J, Mandal S, Severinov K and Ebright R. H. Howard Hughes Medical Institute, Waksman Institute, and Department of Chemistry, Rutgers University, Piscataway NJ 08854, USA: in **FASEB** summer research conference on title “Mechanisms and Regulation of Prokaryotic Transcription” at Saxtons River, Vermont, USA from 19th June to 23th June, 2011.
- **Abstract and Poster presentation** “Structural biology of bacterial RNA polymerase: RNA polymerase from pathogenic bacteria and closely related thermophilic bacteria.” Feng Y, Liu S, Zhang Y, Jiang Y, Mandal S, and Ebright R. H. Howard Hughes Medical Institute, Waksman Institute, and Department of Chemistry, Rutgers University, Piscataway NJ 08854, USA: in **FASEB** summer research conference on title “Mechanisms and Regulation of Prokaryotic Transcription” at Saxtons River, Vermont, USA from 19th June to 23th June, 2011.
- **Abstract and Poster presentation** “Recombinant Mycobacterium tuberculosis RNA polymerase: structural studies, identification and characterization of inhibitors.” Yi J, Mandal S, and Ebright R. H. Howard Hughes Medical Institute, Waksman Institute, and Department of Chemistry, Rutgers University, Piscataway NJ 08854, USA: in **FASEB** summer research conference on title “Mechanisms and Regulation of Prokaryotic Transcription” at Saxtons River, Vermont, USA from 21st June to 26th June, 2009.
- **Abstract** “SoxR, regulates activity of Sulfur oxidation (Sox) operon promoters through a concentration dependent mechanism involving repression and activation; Mandal S, Chaterjee S, Dam B, Roy P, and Das Gupta S. K.” of the oral presentation in the symposium on “Recent Developments in Modern Biology”, May 19-21, 2006, held at Digha, India, organized by **Society of Biological Chemists**, Kolkata, India. **Gave oral presentation.**
- **Abstract and Poster presentation** “Mapping of a sulfur oxidation mutation leads to the identification of novel regulatory gene cluster *soxSRT* in the upstream of the structural gene cluster *soxVWXYZABC* in a sulfur chemolithotrophic bacterium

Pseudaminobacter salicylatoxidans KCT001; Lahiri, C., Ghosh, W., **Mandal, S.** and Roy, P". In **FAOBMB** Satellite Symposium on Regulation of Gene Expression, December 5-6, 2003, IICB, Kolkata, India.

Membership of Learned Societies:

Member of "**Society of Biological Chemistry**", India.

Member of "**British Science Association**", UK.

Invited lectures delivered :

Raiganj University, March 2016.....

VJR College September 2015

Bose Institute, July 2015

Awards :

"**HIMI Fellowship**" for postdoctoral research in Waksman Institute, Rutgers University, NJ, USA: **(2011-2012)**

"**NIH Fellowship**" for postdoctoral research in Rutgers University, NJ, USA: **(2007-2011)**

"**Prof B Biswas outstanding scholar of the year**" award for the research work done during PhD tenure. By Bose Institute, India.:**(2007)**

Other notable activities :

Editor of "**American Journal of Biochemistry**" by Scientific and Academic Publishing;

"**American Journal of Microbiology**" by Science Publications; "**Asiatic journal of Biotechnology Resources**" by Pacific Publishers; **International Journal of Plant, Animal and Environmental Sciences (IJP AES)**; **World Research Journal of Biochemistry** ;**Universal Journal of Biomedical Engineering**

Reviewer of "**African Journal of Microbiology Research**" by Academic Journals;

"**Research & Reviews: A Journal of Life Sciences**" by STM Journals.; "**Research & Reviews: A Journal of Microbiology & Virology**" by STM Journals, **Scientific Reports**; **Frontiers of Microbiology**; **Gene**; **Symbiosis**;