

Alok Kumar Panda, Ph.D.

Department of Chemistry, School of Applied Sciences

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EDUCATIONAL BACKGROUND

- Jan 2013-Feb 2018** **Ph.D. in Biophysical and Biochemistry**
Indian Institute of Technology Bhubaneswar, India
- Doctoral Dissertation Title:** *Role of C-terminal Region of Mycobacterium tuberculosis Hsp16.3 on its Structure, Stability and Chaperone Function - A Biophysical and Site Directed Mutagenesis Study*
- 2007-2009** **M.Sc (specialization in Organic Chemistry)**
66.6%, First Division
Ravenshaw University, India
- 2003-2006** **B.Sc (Chemistry Honours)**
81.0%, First Division
University First Rank Holder
College of Basic Sciences and Humanities,
Orissa University of Agriculture and Technology, India
- 2001-2003** **Intermediate**
73.0%, First Division
BJB Junior College, Bhubaneswar
Council of Higher Secondary Education (CHSE), Odisha
- 2001** **Matriculation**
88.8%, First Division
Certificate of Merit from CBSE Board
St. Xaviers High School, Bhubaneswar
Central Board of Secondary Education (CBSE), India

RESEARCH EXPERIENCE

- Aug 2018-Present** **Assistant Professor (Chemistry)**
Department of Chemistry
School of Applied Sciences
KIIT Deemed University, Bhubaneswar
Odisha, India
- Nov 2017-Aug 2018** **Postdoctoral Associate**
Department of Chemistry, University at Albany
State University of New York, Albany, USA
- Jan 2013-Apr 2017** **Graduate Student**
Senior Research Fellow (CSIR/ICMR)
Indian Institute of Technology Bhubaneswar

Doctoral Dissertation: *Role of C-terminal Region of Mycobacterium tuberculosis Hsp16.3 for its Structure, Stability and Chaperone Function-A Biophysical and Site Directed Truncation Study*

Thesis Advisor: Dr. Ashis Biswas

Aug 2012-May 2013

**Senior Research Fellow (CSIR Project)
Indian Institute of Technology Bhubaneswar**

Project Title: *Role of C-terminal region of Mycobacterium tuberculosis Hsp16.3 for its structure, stability and chaperone function-A biophysical and site directed truncation study*

Project Investigator: Dr. Ashis Biswas

Jul 2010-Aug 2012

**Project Assistant (DST Project)
Indian Institute of Technology Bhubaneswar**

Project Title: *Catalytic activity of endothelial nitric oxide synthase – a probe into the molecular basis of its electron transfer limitation*

Project Investigator: Dr. Ashis Biswas

Mar 2009-Mar 2010

**Project Assistant (TRIFED Project)
Institute of Minerals & Materials Technology Bhubaneswar**

Project Title: *Development of integrated post-harvest technology for production of quality minor forest produces*

Project Investigator: Dr. Ashok K Sahu

Summer 2008

**Summer Research Fellow
Indian Institute of Science Bangalore**

Project Title: *Synthesis of thermoresponsive co-polymers*

Supervisor: Prof. S. Ramakrishnan

TEACHING EXPERIENCE

Aug 2018-Present

Assistant Professor (Chemistry)

Department of Chemistry
School of Applied Sciences
KIIT Deemed University, Bhubaneswar
Odisha, India

Courses Taught:

Master Degree Level

Analytical Chemistry -1 [CH-6431], Organic Chemistry [CHE-502], Physical Chemistry -2 [CH-6322], **Elective:** Biophysical Chemistry [CH-6501], Physical Chemistry 1 Laboratory [CH-6391], Physical Chemistry 2 Laboratory [CH-6392]

Undergraduate B.Tech Level

Chemistry [CH-1007], Environmental Science [CH-1009], **Elective:** Renewable Energy Resources [CH-3043], Chemistry Laboratory [CH-1097]

Jun 2017-Aug 2017

Assistant Professor (Chemistry)

School of Science
Sandip University, Nashik, India

Courses Taught:

Master Degree Level

Spectroscopic Methods in Structure Determination of Organic Compounds [SCI0203P301], Organic Reaction Mechanism, Stereochemistry and Natural Products [SCI0203P302], Analytical Spectroscopy [SCI0204P303], Organic Chemistry Laboratory VI [SCI0203P306]

Aug 2016-Feb 2017

Guest Faculty, Department of Chemistry

College of Basic Sciences and Humanities,
Orissa University of Agriculture and Technology, India

Courses Taught:

Undergraduate Degree Level

Physical Chemistry [CHC(T) 1101], Organic Chemistry-II [CHC(T) 2307], Analytical Chemistry [CHH 310]

Master Degree Level

Heterocyclic Chemistry [CHE(E) 5317]

Jan 2013-Dec2013

Teaching Assistant

Indian Institute of Technology Bhubaneswar

Courses Taught:

Master Degree Level:

Physical Chemistry Laboratory [CY5P003]

AWARDS AND HONORS

Sept 2013-Sept 2016

Direct ICMR Senior Research Fellowship, Indian Council of Medical Research, India

Jun 2013-Sept 2013

Direct CSIR Senior Research Fellowship, Council of Scientific and Industrial Research, India

Feb 2011

Third Prize in poster presentation held at Indian Institute of Technology Bhubaneswar on National Science Day.

Summer 2008

JNCASR Summer Research Fellow at Indian Institute of Science, Bangalore.

Aug 2006

University First Rank Holder in Chemistry Honours in Bachelor of Science (B.Sc).

Mar 2001

Certificate of Merit from CBSE Board

RESEARCH PUBLICATIONS

1. Ayon Chakraborty[‡], **Alok Kumar Panda**[‡], Rajesh Ghosh and Ashis Biswas, - "DNA minor groove binding of a well known anti-mycobacterial drug dapson: A spectroscopic, viscometric and molecular docking study", *Archives of Biochemistry and Biophysics*, 655, 107-113 (2019). [[‡]equal contribution] [IF - 3.11]
2. Ayon Chakraborty, **Alok Kumar Panda**, Rajesh Ghosh, Ipsita Roy and Ashis Biswas - "Depicting the DNA binding and photo-nuclease ability of anti-mycobacterial drug rifampicin: A biophysical and molecular docking perspective", *International Journal of Biological Macromolecules*, 127, 187-196 (2019). [IF - 3.90]

3. Sandip Kumar Nandi, Ayon Chakraborty, **Alok Kumar Panda**, Rajiv Kumar Kar, Anirban Bhunia and Ashis Biswas - "Evidences for zinc (II) and copper (II) ion interactions with *Mycobacterium leprae* HSP18: Effect on its structure and chaperone function", ***Journal of Inorganic Biochemistry***, 188, 62-75 (2018). **[IF - 3.26]**
4. Ayon Chakraborty, Sandip Kumar Nandi, **Alok Kumar Panda**, Pinaki Prasad Mahapatra; Sourav Giri and Ashis Biswas - "Probing the structure-function relationship of *Mycobacterium leprae* HSP18 under different UV radiations", ***International Journal of Biological Macromolecules***, 119, 604-616 (2018). **[IF - 3.90]**
5. Sudarshana Majumder, Sagarika Pasayat, **Alok Kumar Panda**, Subhashree P. Dash, Satabdi Roy, Ashis Biswas, Mokshada E. Varma, Bimba N. Joshi, Eugenio Garribba, Chahat Kausar, Samir Kumar Patra, Werner Kaminsky, Aurélien Crochet, and Rupam Dinda - "Monomeric and Dimeric Oxidomolybdenum(V and VI) Complexes, Cytotoxicity, and DNA Interaction Studies: Molybdenum Assisted C=N Bond Cleavage of Salophen Ligands", ***Inorganic Chemistry***, 56(18), 11190-11210 (2017). **[IF - 4.85]**
6. Priyabrata Mukhi, Swapna Sarita Mohapatra, M Bhattacharjee, Kalyan Kumar Ray, T.S. Muraleedharan, A Arun, R. Sathyavathi, R. R. Juluri, P.V. Satyam, **Alok Kumar Panda**, Ashis Biswas, S Nayak, Sreedhar Bojja, S. Pratihar, Sujit Roy - "Mercury based drug in ancient India: The case of red sulfide of mercury in nanoscale", ***Journal of Ayurveda and Integrative Medicine***, 8(2), 93-98 (2017). **[IF - 0.69]**
7. **Alok Kumar Panda**, Ayon Chakraborty, Sandip Kumar Nandi, Abhishek Kaushik and Ashis Biswas – The C-terminal extension of *Mycobacterium tuberculosis* Hsp16.3 regulates its oligomerization, subunit exchange dynamics and chaperone function" ***FEBS Journal***, 284, 277-300. (2017). **[IF - 4.20]**
8. Subhashree P. Dash[‡], **Alok Kumar Panda**[‡], Sarita Dhaka[‡], Sagarika Pasayat, Ashis Biswas, Mannar R. Maurya, Paresh Kumar Majhi, Aurélien Crochet and Rupam Dinda - "A study of DNA/BSA interaction and catalytic potential of oxidovanadium(v) complexes with ONO donor ligands" ***Dalton Transactions***, 45, 18292-18307 (2016). **[IF - 4.02]**
[[‡]equal contribution]
9. Sandip Kumar Nandi, Ayon Chakraborty, **Alok Kumar Panda** and Ashis Biswas - "Conformational perturbation, hydrophobic interactions and oligomeric association are responsible for the enhanced chaperone function of *Mycobacterium leprae* HSP18 under pre-thermal condition" ***RSC Advances***, 6, 62146-62156 (2016). **[IF - 3.10]**
10. **Alok Kumar Panda**[‡], Sandip Kumar Nandi[‡], Ayon Chakraborty, Ram H. Nagaraj and Ashis Biswas - "Differential role of arginine mutations on the structure and functions of alpha-crystallin", ***Biochimica et Biophysica Acta-General Subjects***, 1860, 199-210 (2016) [[‡]equal contribution]. **[IF - 4.80]**
11. Subhashree P. Dash, **Alok Kumar Panda**, Sagarika Pasayat, Rupam Dinda, Ashis Biswas, Edward R. T. Tiekink, Subhadip Mukhopadhyay, Sujit K. Bhutia, Werner Kaminsky and Ekkehard Sinn - "Oxidovanadium(V) complexes of aroylhydrazones incorporating heterocycles: Synthesis, characterization and study of DNA binding, photo-induced DNA cleavage and cytotoxic activities", ***RSC Advances***, 5, 51852 – 51867 (2015). **[IF - 3.10]**
12. Sandip Kumar Nandi, **Alok Kumar Panda**, Ayon Chakraborty, Sougata Sinha Ray and Ashis Biswas - "Role of subunit exchange and electrostatic interactions on the chaperone activity of *Mycobacterium leprae* HSP18", ***PLoS One***, 10(6), e0129734 (2015). **[IF - 2.80]**

13. Saswati, Ayon Chakraborty, Subhashree P. Dash, **Alok Kumar Panda**, Rama Acharyya, Ashis Biswas, Subhadip Mukhopadhyay, Sujit K Bhutia, Aurelien Crochet, Yogesh P. Patil, Munirathinam Nethaji and Rupam Dinda - "Synthesis, X-ray structure and in vitro cytotoxicity studies of Cu(I/II) complexes of thiosemicarbazone: special emphasis on their interactions with DNA", *Dalton Transactions*, 44(13), 6140-6157 (2015). **[IF - 4.02]**
14. Subhashree P. Dash, **Alok Kumar Panda**, Sagarika Pasayat, Sudarshana Majumder, Ashis Biswas, Werner Kaminsky, Subhadip Mukhopadhyay, Sujit K. Bhutia, Rupam Dinda - "Evaluation of the cell cytotoxicity and DNA/BSA binding and cleavage activity of some dioxidovanadium(V) complexes containing aroylhydrazones", *Journal of Inorganic Biochemistry*, 144, 1-12 (2015). **[IF - 3.26]**
15. Sandip Kumar Nandi, Ayon Chakraborty, **Alok Kumar Panda**, Sougata Sinha Ray, Rajiv Kumar Kar, Anirban Bhunia and Ashis Biswas - "Interaction of ATP with a small heat shock protein from *Mycobacterium leprae*: effect on its structure and function", *PLoS Neglected Tropical Diseases*, 9(3), e0003661 (2015). **[IF - 3.94]**
16. Subhashree. P. Dash, **Alok Kumar Panda**, Sagarika Pasayat, Rupam Dinda, Ashis Biswas, E. R. Tiekink, Yogesh P. Patil, M. Nethaji, Werner Kaminsky, Subhadip Mukhopadhyay and Sujit K. Bhutia - "Syntheses and structural investigation of some alkali metal ion-mediated LV(V)O₂(-) (L(2-) = tridentate ONO ligands) species: DNA binding, photo-induced DNA cleavage and cytotoxic activities", *Dalton Transactions*, 43(26), 10139-10156 (2014). **[IF - 4.02]**
17. Sandip Kumar Nandi, Elengikal A. A. Rehna, **Alok Kumar Panda**, Sugathan Shiburaj, Kuppamuthu Dharmalingam and Ashis Biswas – "A S52P mutation in the 'α-crystallin domain' of *Mycobacterium leprae* HSP18 reduces its oligomeric size and chaperone function", *FEBS Journal*, 280(23), 5994-6009 (2013). **[IF - 4.20]**
18. Ram H. Nagaraj, **Alok Kumar Panda**, Shilpa Shanthakumar, Puttur Santhoshkumar, NagaRekha Pasupuleti, Benlian Wang and Ashis Biswas - "Hydroimidazolone modification of the conserved Arg12 in small heat shock proteins: studies on the structure and chaperone function using mutant mimics", *PLoS One*, 7, e30257 (2012). **[IF - 2.80]**
19. Ram H. Nagaraj, Rooban B. Nahomi, Shilpa Shanthakumar, Mikhail Linetsky, Smitha Padmanabha, Nagarekha Pasupuleti, Benlian Wang, Puttur Santhoshkumar, **Alok Kumar Panda** and Ashis Biswas - "Acetylation of alphaA-crystallin in the human lens: effects on structure and chaperone function", *Biochimica et Biophysica Acta-Molecular Basis of Disease*, 1822, 120-129 (2012). **[IF - 5.70]**
20. Sasmita Baliarsingh, **Alok Kumar Panda**, Jyostna Jena., Trupti Das and Nalini Bihari Das – "Exploring sustainable technique on natural dye extraction from native plants for textile: Identification of colourants, colourimetric analysis of dyed yarns and their antimicrobial evaluation", *Journal of Cleaner Production* 37, 257-264 (2012). **[IF - 6.27]**

RESEARCH GRANTS

1. Role of C-Terminal Domain of M. Tuberculosis Small Heat Shock Protein Hsp16.3 for Its Structure, Stability and Chaperone Function Under Thermal Stress (**Funding Agency: UGC, Approved**).

INVITED TALKS/LECTURES

1. Science Popularization Lecture organized by Indian Science Congress Association, Bhubaneswar Chapter, Bhubaneswar, Odisha held on November 2018.
2. Popular Nobel Lecture Series organized by KIIT Deemed to be University, Bhubaneswar, Odisha held on November 2018.

CONFERENCES/SYMPOSIA

POSTER PRESENTATIONS

1. **Alok Kumar Panda** and Ashis Biswas – “Dissecting the Structure-Function Relationship of the C-terminal Region of *Mycobacterium tuberculosis* Hsp16.3: Importance of the C-terminal Extension”, **The Third International Symposium on Protein Folding and Dynamics** (held at **NCBS, Bengaluru** during November 8-11, 2016).
2. **Alok Kumar Panda**, Ayon Chakraborty and Ashis Biswas – “Role of the surface mutants on the electron transfer and catalytic activity of endothelial nitric oxide synthase: A new horizon for gene therapy”, **National Science Day** (held at **Indian Institute of Technology Bhubaneswar** during February 28, 2016).
3. **Alok Kumar Panda**, Ram. H. Nagaraj and Ashis Biswas – “Role of *in vitro* Acetylation on the Structure and Chaperone Function of alphaA-Crystallin”, **National Science Day** (held at **Indian Institute of Technology Bhubaneswar** during February 28, 2014).
4. **Alok Kumar Panda**, Shilpa Shanthakumar, Puttur Santhoshkumar, NagaRekha Pasupuleti, Benlian Wang, Ram H. Nagaraj and Ashis Biswas – “Hydroimidazolone Modification of the Conserved Arg12 on the Structure and Chaperone Function of Small Heat Shock Proteins – A Site-directed Mutagenesis and Biophysical Study”, **Asia-ARVO 2013 Conference** (held at **Ashok International Convention & Exhibition Centre New Delhi, India** during October 28-31, 2013).
5. **Alok Kumar Panda**, Sandip Kumar Nandi, Ram H. Nagaraj and Ashis Biswas – “Implications of the Byproducts Derived from Maillard Reaction on the Structure and Chaperone Function of α A-crystallin”, **National Science Day** (held at **Indian Institute of Technology Bhubaneswar** during February 28, 2013).
6. **Alok Kumar Panda**, Sandip Kumar Nandi, Ram H. Nagaraj and Ashis Biswas – “Role of Hydroimidazolone Modifiable Conserved Arginine12 on Structure and Chaperone Function of Human alphaA Crystallin—A Site Directed Mutagenesis Study”, **National Science Day** (held at **Indian Institute of Technology Bhubaneswar** during February 28, 2012).
7. **Alok Kumar Panda**, Sandip Kumar Nandi and Ashis Biswas – “Effect of Surface Mutants on the Electron Transfer and Catalytic Activity of Endothelial Nitric Oxide Synthase”, **National Science Day** (held at **Indian Institute of Technology Bhubaneswar** during February 28, 2010).

TALKS/LECTURES

1. **Alok Kumar Panda** – “Socializing the Concept of Carbon Footprint”, *Human Future in Digital Era, XLII Indian Social Science Congress, Session: Global warming and climate change* (held at **KIIT Deemed to Be University, Bhubaneswar, Odisha** during December 27-31, 2018). [**Chairman Talk**]

WORKSHOPS

1. “5-days Workshop on Molecular Biotechnology & Bioinformatics” (held at **International Institute of Information Technology, Pune** during January 17-21, 2011).
2. “15-days Workshop on Basic Tools and Techniques in Cell Biology and Immunology” (held at **KIIT School of Biotechnology, Bhubaneswar** during August 26-September 14, 2019).