FACULTY PROFILE

1. Name of the Faculty Member: Dr Anangamohan Panja

2. Designation with Category (Substantive/SACT): Associate Professor

3. Department: Chemistry

4. Educational and Professional Qualifications:

Name of the Institution	Name of the Affiliating Body	Degree/Diploma/Certificate Obtained	Specialization (if any)
Indian Association for the Cultivation of Science	Jadavpur University	Ph.D. in Science	
University of Calcutta	University of Calcutta	M.Sc. (Master of Science)	Inorganic Chemistry
Ramakrishna Mission Residential College, Narendrapur	University of Calcutta	B.Sc. (Honours) in Chemistry	

5. Teaching Experience (If applicable):

Name of the Institution	Position Held	From	To
Gokhale Memorial Girls' College	Associate Professor	01.04.2019	Till date
Panskura Banamali College	Associate Professor Assistant Professor	14.09.2018 14.09.2006	01.04.2019 13.09.2018
R. K. M. Residential College, Narendrapur,	Guest Professor	2017-18	Till date
Jadavpur University	Guest Professor	2012-13	Till date

6. Research Experience (If applicable):

Name of the Institution	Nature of Work	Designation	From	To
Gokhale Memorial Girls' College	Principal Investigator	Associate Professor	2019	Till date
Panskura Banamali College	Principal Investigator	Assistant and Associate Professor	2006	2019

Nara Institute of Science and Technology, Japan	Research	JSPS Invited Researcher	2010	2011
University of Bordeaux, France	Research	Erasmus Mundus Postdoctoral Fellow	2009	2010
Department of Chemistry, Wichita State University, Wichita, USA	Research	Postdoctoral Fellow	2004	2006

7. Areas of Interest (Intra-disciplinary and/or Inter-disciplinary):

- Research group of Dr. Panja is interested in the magneto-structural and chemical properties of multiple and single transition metal-based co-ordination complexes using both redox-innocent (Schiff base ligands) and non-innocent ligands (dioxolene and tetraoxolene ligands). The obtained complexes are explored for the molecular materials with desired electronic and magnetic properties. Research of this field covers extensive synthesis, molecular (X-ray structure) and electronic structural (magnetic and spectroscopic) characterizations, investigation of reactivity (chemical and redox), and understanding of metal-ligand bonding characteristics in which the main focus is the correct description of the electronic of compounds containing open-shell organic ligands and paramagnetic metal ion. Furthermore, the present applicant is actively engaged in the development of single-molecule magnetic behaviours of transition and lanthanide compounds with aim to the potential application in high density optical and/ or magnetic data storage devices
- Apart from the materials perspective, the research group has also been involved to develop metalloenzyme model complexes and protein active-site mimics. Study of these bio-inspired systems could provide a lot of understanding of role of the metal ions in the biochemical reactions. Ultimately, the knowledge of which could be helpful to develop synthetic catalysts for industrial and synthetic processes.

8. Research Projects (if any):

Sl. No.	**Title**	**Agency**	**Period**	**Grant (Rs. lakh)**
1	Structural and Functional models for Catechol oxidase and phenoxazinone synthase	UGC	Completed Feb., 2012 to Feb., 2014	1,99,000.00
2	Development of Thermal and Photo Functional Molecular Materials using Di- and Tetra-Oxolene Chelated Valence Tautomeric Transition Metal Complexes	DST-SERB	Feb., 2014 to Feb., 2017	26,00,000.00
3	Development of coordination chemistry of paramagnetic metal ions for the queue of molecular magnetism	CSIR	Completed Oct., 2015 to Sept., 2018	9,00,000.00 (excluding overhead)

4	Development of coordination chemistry of first-row transition metal with *N*,*N*-Dimethyldipropylenetriamine for molecular magnetism and bio-inspired catalysis	UGC	On-going Sept, 2017 to Sept, 2019	5,00,000.00
5	Development of small molecule catalysts for bio-inspired oxidation reactions and for degradation of organic pollutants	WB-DST	On-going June, 2019 to June, 2021	6,15,000.00

9. Research Publications (if any):

a) Books/Book Chapters:

b) Journal Articles:

85 Influence of bridging and chelating co-ligands on the distinct single-molecule magnetic behaviours in ZnDy complexes
A. Panja*, Z. Jagličić, R. Herchel, P. Brandão and N. C. Jana, *New J. Chem*., **2022**,46, 18751-18763, https://doi.org/10.1039/D2NJ03793A

84 Two rhodamine-azo based fluorescent probes for recognition of trivalent metal ions: crystal structure elucidation and biological applications
J. Mandal, K. Pal, S. Ghosh Chowdhury, P. Karmakar, **A. Panja**, S. Banerjee and A. Saha, *Dalton Trans*., **2022**, 51, 15555–15570. https://doi.org/10.1039/D2DT00399F

83. Three angular Zn2Dy complexes showing the effect of remote coordination at Zn and counter ions on slow magnetic relaxation at Dy centres
A. Panja*, Z. Jagličić, R. Herchel, P. Brandão, K. Pramanik and N. C. Jana, *New J. Chem*., **2022**, 46, 13546–13557. https://doi.org/10.1039/D2NJ01759H

82. The first exploration of coordination chemistry using a methyl substituted o-vanillin based ligand: an example starting with Dy4/Zn2Dy2 systems displaying slow relaxation of magnetization
A. Panja*, Z. Jagličić, R.Herchel, P. Brandão, K. Pramanik and N. C. Jana, New J. Chem., **2022**, 46, 5627–5637. https://doi.org/10.1039/D1NJ05717K

81. Macrocycle supported dinuclear lanthanide complexes with different b-diketonate co-ligands displaying zero field single-molecule magnetic behaviour
K. Pramanik, Y.-C. Sun, P. Brandão, N. C. Jana, X.-Y. Wang and **A. Panja***, *New J. Chem*., **2022**, 46, 11722–11733. https://doi.org/10.1039/D2NJ01017H

80. Impact of Positional Isomers on the Selective Isolation of cis-trans Isomers in Cobalt-Dioxolene Chemistry and Solvation Effects on the Valence Tautomerism in the Solid State
N. C. Jana, X.-H. Qi, P. Brandão, C. Mathonière and **A. Panja***, *Cryst. Growth Des*., **2022**, 22, 993−1004. https://doi.org/10.1021/acs.cgd.1c00417

79. A comparative study of noncovalent interactions in various Ni-compounds containing nitrogen heteroaromatic ligands and pseudohalides: A combined experimental and theoretical studies
N. C. Jana, P. Ghorai, P. Brandão, P. Bandyopadhyay, A. Saha, A. Frontera and **A. Panja***, *Inorg. Chim. Acta*, **2022,** 531, 120702. https://doi.org/10.1016/j.ica.2021.120702

78. Proton controlled synthesis of two dicopper(II) complexes and their magnetic and biomimetic catalytic studies together with probing the binding mode of the substrate to the metal center
N. C. Jana, P. Ghorai, P. Brandão, Z. Jagličić and **A. Panja***, *Dalton Trans*., **2021**, 50, 15233–15247. https://doi.org/10.1039/D1DT02369A

77. A novel triple aqua-, phenoxo- and carboxylatobridged dinickel(II) complex, its magnetic properties, and comparative biomimetic catalytic studies with analogous dinickel(II) complexes
N. C. Jana, Z. Jagličić, P. Brandão, S. Adak, A. Saha and **A. Panja***, *New J. Chem*., **2021**, 45, 7602–7613. https://doi.org/10.1039/D1NJ00708D

76. Tuneable structures and magnetic properties of pseudohalo-bridged dinuclear Ni(II) complexes derived from {N4} and {N3O} donor ligands
S. Adak, Y.-C. Sun, N. C. Jana, P. Brandão, X.-Y. Wang and **A. Panja***, *CrystEngComm*, **2021**, 23, 3371–3382. https://doi.org/10.1039/D1CE00202C
75. A facile biomimetic catalytic activity through hydrogen atom abstraction by the secondary coordination sphere in manganese(III) complexes
N. C. Jana, P. Brandão, A. Frontera and **A. Panja***, *Dalton Trans*., **2020**, 49, 14216–14230. https://doi.org/10.1039/D0DT02431G
74. Macrocycle supported dimetallic lanthanide complexes with slow magnetic relaxation in Dy2 analogues F.-X. Shen, K. Pramanik, P. Brandão, Y.-Q. Zhang, N. C. Jana, X.-Y. Wang and **A. Panja***, *Dalton Trans*., **2020**, 49, 14169–14179. https://doi.org/10.1039/D0DT02778B
73. Magneto-structural Studies in Double Chloro- and Pseudohalo-bridged Isomorphic Dinickel(II) Complexes M. Patra, P. Brandão, A. P. Pikul, S. Adak, and **A. Panja***, *ChemistrySelect***, 2020**, 5, 12924–12931. https://doi.org/10.1002/slct.202003300
72. The first report of a tetra-azide bound mononuclear cobalt(III) complex and its comparative biomimetic catalytic activity with tri-azide bound cobalt(III) compounds
A. Panja,* N. C. Jana, and P. Brandão, *New J. Chem*., **2020**, 44, 11527-11536. https://doi.org/10.1039/D0NJ02339F
71. Syntheses, structures and magnetic properties of ferromagnetically / antiferromagnetically coupled penta- and hexa-nuclear azido-bridged nickel(II) coordination clusters.
A. Panja,* S. Adak, P. Brandão, Ľ. Dlháňd and R. Boča, *Eur. J. Inorg. Chem.*, **2020**, 2362–2371, **Invited article.** https://doi.org/10.1002/ejic.202000045
70. Iron(III) and cyano-bridged dinuclear copper(II) complexes: Synthesis, structures and magnetic property of the copper(II) complex
G. Mahata and **A. Panja**,* *J. Chem*. Sci., **2020,** 132, 102. https://doi.org/10.1007/s12039-020-01807-z
69. Synthesis, crystal structure and supramolecular interactions in a bis(tetrachlorocatecholate) chelated manganese(iii) complex.
G. Mahata and **A. Panja**,* *J. Struct. Chem*., **2020,** 61, 1551. https://doi.org/10.1134/S0022476620090164
68. A rare flattened tetrahedral Mn (II) salen type complex: Synthesis, crystal structure, biomimetic catalysis and DFT study
S Banerjee, P Ghorai, P Sarkar, A **Panja**, A Saha, *Inorg. Chim. Acta* **2020**, 499, 119176. https://doi.org/10.1016/j.ica.2019.119176
67. Biomimetic catalytic activity and structural diversity of cobalt complexes with N3O-donor Schiff base ligand
N. C. Jana, M. Patra, P. Brandão, A. **Panja**, *Inorg. Chim. Acta*, **2019**, 490, 163–172.
66. Synthesis, structure and diverse coordination chemistry of cobalt(III)complexes derived from a Schiff base ligand and their biomimetic catalytic oxidation of o-aminophenols
N. C. Jana, M. Patra, P. Brandão, A. **Panja**, *Polyhedron*, **2019**, 164, 23–34.
65. Influence of anions and solvents on distinct coordination chemistry of cobalt and effect of coordination spheres on the diverse phenoxazinone synthase activity
A. Panja,* N. C. Jana, and P. Brandão, *Molecular Catalysis*, **2018**, 449, 49–61.
64. Synthesis, structure and magnetic properties of dinuclear cobalt-tetraoxolene complexes with bidentate terminal ligands
N. C. Jana, P. Brandão, C. Mathoniere and **A. Panja**,* *Polyhedron*, **2018**, 144, 152–157.
63. Valence tautomerism driven aromatic nucleophilic substitution in cobalt-bound tetrabromocatecholate ligands: Influence of positive charge at ligand backbone on phenoxazinone synthase activity
A. Panja* and A. Frontera, *Eur. J. Inorg. Chem.*, **2018**, 924–931.
62. Synthesis, crystal structure and electronic property of tetraoxolene bridged dinuclear cobalt(II) complexes with bipyridyl blocking ligands
N. C. Jana, P. Brandão, A. Saha and **A. Panja**,* *Polyhedron*, **2017**, 138, 31–36.
61. Influence of the first and second coordination spheres on the diverse phenoxazinone synthase activity of cobalt complexes derived from a tetradentate Schiff base ligand
A, Panja,* N. C. Jana, and P. Brandão, *New J. Chem*., **2017**, 41, 9784.
60. Nuclearity versus oxidation state in catalytic efficiency of MnII/III azo Schiff base complexes: Computational study on supramolecular interactions and phenoxazinone synthase like activity
S. Banerjee, P. Brandão, A. Bauzá, A. Frontera, M. Barceló- Oliverc, **A. Panja** and A. Saha, *New J. Chem.*, 2017, **41**, 11607.

59. Synthesis, in vitro evaluation of antibacterial, antifungal and larvicidal activities of pyrazole/pyridine based compounds and their nanocrystalline MS (M=Cu and Cd) derivatives
G. Mondal, H. Jana, M. Acharjya, A. Santra, P. Bera, A. Jana, **A. Panja** and P. Bera, *Medicinal Chemistry Research*, **2017**, 26, 3046–3056.
58. Influence of ancillary ligands on preferential geometry and biomimetic catalytic activity in manganese(III)-catecholate systems: A combined experimental and theoretical study
N. C. Jana, P. Brandão, A. Bauzá, A. Frontera, and **A. Panja,*** *J. Inorg. Biochem*., 2017, **176**, 77–89.
57. The structure and magnetism of mono- and di-nuclear Ni(II) complexes derived from $\{N_3O\}$-donor Schiff base ligand
A. Panja,* N. C. Jana, S. Adak, P. Brandão, L. Dlháň, J. Titiš and R. Boča, *New. J. Chem*., **2017**, 41, 3143-3153.
56. Introducing supramolecular interactions into robust bis(tetrabromocatecholate) chelated manganese(III) systems and biomimetic catalytic activity
A. Panja,* N. Ch. Jana, A. Bauzá, S. Adak, D. M. Eichhorn, and A. Frontera, *ChemistrySelect* **2017**, 2, 2094 – 2105.
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A. Panja*, N.C. Jana and S. Adak, *Inorg. Chim. Acta*, **2017**, *459*, 113-123.
54. Pseudohalides regulated diverse helicity in copper(II) coordination polymers derived from a bis(aminoethoxy) ligand: A combined theoretical and experimental study"
N. Jana, K. Pramanik, A. Bauza, P. Brandão, M. Patra, A. Frontera and **A. Panja***, *Polyhedron*, **2017**, 124, 262–274.
53. Solvent Triggered cis/trans Isomerism in Cobalt-Dioxolene Chemistry: Distinguishing Effect of Packing on Valence Tautomerism
A. Panja*, N.C. Jana, A. Bauza, A. Frontera and C. Mathoniere, *Inorg. Chem*., **2016**, 55, 8331−8340.
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L. Paul, M. Dolai, **A. Panja** and M. Ali, *New. J. Chem.*, **2016**, 40, 6931-6938.
51. Mono- and di-nuclear nickel(II) complexes derived from NNO donor ligands: syntheses, crystal structures and magnetic studies of dinuclear analogues
P. Ghorai, A. Chakraborty, **A. Panja**, T. K. Mondal and A. Saha, *RSC Advances*, **2016**, 6, 36020.
50. Catechol oxidase mimetic activity of copper(I) complexes of 3,5-dimethyl pyrazole derivatives: Coordination behavior, X-ray crystallography and electrochemical study
A.Santra, G. Mondal, M. Acharjya, P. Bera, **A. Panja**, T. K. Mandal, P. Mitra and P. Bera, *Polyhedron*, **2016**, 113, 5–15.
49. Tuning the geometry and biomimetic catalytic activity of manganese(III)-tetrabromocatecholate based robust platforms by introducing substitution at pyridine
N. C. Jana, P. Brandão and **A. Panja***, *J. Inorg. Biochem.*, **2016**, 159, 96–106.
48. Synthesis, crystal structure, redox property and theoretical study of a pyrrole containing cobalt(III) Schiff base compound
A. Panja* and T. K. Mandal, *Ind. J. Chem. Sec A*, **2016**, 55A, 137-144.
47. Synthesis, structures, electronic properties and DFT calculations of cobalt(II) complexes with redox-noninnocent naphthoquinone ligand
N. C. Jana, S. Adak, P. Brandão, T. K. Mandal and **A. Panja***, *Polyhedron*, **2016**, 107, 48–56.
46. Valence Tautomerism induced nucleophilic ipso substitution in a coordinated tetrabromocatecholate ligand and diverse catalytic activity mimicking the function of phenoxazinone synthase
A. Panja,* N. C. Jana, M. Patra, P. Brandão, C. E. Moore, D. M. Eichhorn and A. Frontera *J. Mol. Cat A.*, **2016**, 412, 56–66.
45. Novel Cu^{II}-M^{II}-Cu^{II} (M = Cu or Ni) trinuclear and $[Na^{I}_2Cu^{II}_6]$ hexanuclear complexes assembled by bi-compartmental ligands: syntheses, structures, magnetic and catalytic studies
S. Biswas, A. Dutta, M. Dolai, I. Bhowmick, M. Rouzières, R. Clérac, **A. Panja** and M. Ali, *Dalton Trans*, **2015**,44, 9426-9438.
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M. Shyamal, T. K. Mandal, **A. Panja*** and A. Saha, *RSC Advances*, **2014**, 4, 53520–53530.

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A. Panja, *RSC Advances*, **2014**, 4, 37085-37094.
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A. Panja, *Polyhedron*, **2014**, *79*, 258-268.
41. Exclusive selectivity of multidentate ligands independent on the oxidation state of cobalt: influence of steric hindrance on dioxygen binding and phenoxazinone synthase activity
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A. Panja, *Polyhedron*, **2014**, *80*, 81-89 (**Leovac Special Issue**).
39. Methylene bridge regulated geometrical preferences of ligands in cobalt(III) coordination chemistry and phenoxazinone synthase mimicking activity
A. Panja*, M. Shyamal, A. Saha and and T. K. Mandal, *Dalton Trans*, **2014**, *43*, 5443–5452.
38. Synthesis and structural characterization of a cyanide-bound heterodinuclear FeCo complex
A. Panja, *J. Ind. Chem. Soc.* **2014**, *91*, 619-623.
37. Stoichiometry controlled syntheses of cyanide-bound iron(II) and iron(III) complexes and their X-ray crystal structures
A. Panja, *J. Ind. Chem. Soc.* **2014**, *91*, 237-243.
36. Understanding of binding of a bis(imido)-bridged dinuclear cobalt(III) complex with *Calf thymus* DNA
A. Panja, *J. Ind. Chem. Soc.* **2014**, *91*, 195-199.
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M. Shyamal, **A. Panja** and A. Saha, *Polyhedron*, **2014**, *69*, 141.
34. A linear S-bridged trinuclear cobalt(III) complex with 2-aminobenzenethiol: synthesis, crystal structure, and spectroscopic characterization
A. Panja*, C. Moore and D. M. Eichhorn, *J. Coord. Chem*., **2013**, *66*, 3037-3044.
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I-R. Jeon, S. Calancea, **A. Panja**, D. M. Piñero Cruz, E. S. Koumousi, P. Dechambenoit, C. Coulon, A. Wattiaux, P. Rosa, C. Mathonière, and R. Clérac, *Chem. Sci*., **2013**, *4*, 2463-2470.
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A. Panja, *J. Coord. Chem*., **2013**, *66*, 2178-2190.
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A. Panja, *Inorg. Chem. Commun.*, **2013**, *32*, 42-46.
30. Diversity in supramolecular self-assembly through hydrogen-bonding interactions of non-coordinated aliphatic –OH group in a series of heterodinuclear CuIIM (M=NaI, ZnII, HgII, SmIII, BiIII, PbII and CdII)
M. Dolai, T. Mistri, **A. Panja**, M. Ali, *Inorg. Chim. Acta*, **2013**, *399*, 95–104.
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A. Panja, *RSC Advances*, **2013,** *3*, 4954–4963.
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A. Panja* and P. Guionneau, *Dalton Trans.*, **2013**, *42*, 5068–5075.
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A. Panja* and D. M. Eichhorn, *Inorg. Chim. Acta*, **2012,** *391*, 88–92.
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N. Shaikh**, A. Panja**, S. Goswami, P. Banerjee, P. Vojtisek Y.-Z. Zhang, G. Su and S. Gao, *Inorg. Chem.*, **2004,** *43*, 849-851.
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N. Shaikh**, A. Panja**, S. Goswami, P. Banerjee, M. Kubiak, Z. Ciunik, M. Puchalska, J. Legendziewicz, *Ind. J. Chem. Sec-A*, **2004,** *43A*, 1403-1408.

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    S. Gupta, **A. Panja**, N. Shaikh, S. Goswami, R. J. Butcher and P. Banerjee, *Ind. J. Chem., Sec-A*, **2004,** *43(1)*, 63-66.
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    N. Shaikh, **A. Panja**, P. Banerjee, M. Kubiak, Z. Ciunik, M. Puchalska, J. Legendziewicz and P. Vojtíšek, *Inorg. Chim. Acta*, **2004,** *357*, 25-32.
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    A. Panja, N. Shaikh, B. Saha, P. Banerjee, *Int. J. Chem. Kinet.*, ***2004,*** *36(2)*, 119-128.
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    S. Goswami, N. Shaikh**, A. Panja** and P. Banerjee, ***Int. J. Chem. Kinet.,*** **2004,** *36(2)*, 129-137.
7. Synthesis and characterization of new manganese(III) complexes having N_4O_2 donor sets: study of the x-ray crystal structure of [Mn(5-Br-sal-N-1,4,7,10)]ClO_4 and its electron transfer reactivity with sulfur(IV) – an example of mixed order kinetics
    A. Panja, N. Shaikh, Ray J. Butcher and P. Banerjee, *Inorg. Chim. Acta*, **2003**, *351*, 27-33.
6. New mononuclear manganese(III) complexes with hexadentate (N_4O_2) Schiff base ligands: synthesis, crystal structure, electrochemistry and electron transfer reactivity towards hydroxylamine
    A. Panja, N. Shaikh, S. Gupta, Ray J. Butcher and P. Banerjee, *Eur. J. Inorg. Chem.*, **2003**, 1540-1547.
5. Structural characterization of a new manganese(III)– salen complex [H_2salen = N,N'-bis(salicylidene)ethane-1,2-diamine] and study of its electron transfer kinetics with hydroquinone and catechol
    A. Panja, N. Shaikh, M. Ali, P. Vojtíšek and P. Banerjee, *Polyhedron*, **2003,** *22***,** 1191-1198.
4. Oxygenation of 4-*tert*-butylcatechol catalyzed by a manganese(II) complex: implications for extradiol catechol dioxygenases
    N. Shaikh, **A. Panja**, M. Ali and P. Banerjee, *Trans. Met. Chem.*, **2003**, *28 (8)*, 871-880.
3. Kinetic studies on the oxidation of oxalate and malonate by bis(μ-oxo)manganese (III, IV)-cyclam complex
    S. Gupta, N. Shaikh**, A. Panja** and P. Banerjee***, J. Ind. Chem. Soc. (Invited)***, **2003**, *80*, 545-549.
2. Synthesis, crystal structure and magnetic properties of 1D polymeric [Mn^{III}(salen)N_3] and [Mn^{III}(salen)Ag$(CN)_2$] complexes
    A. Panja, N. Shaikh, P. Vojtíšek, S. Gao and P. Banerjee, *New J. Chem.*, **2002**, *26*, 1025.
1. Kinetics of the Oxidation of Some Carboxylates by Tris-(pyridine-2- carboxylato)Manganese(III) in Aqueous Medium
    N. Shaikh, M. Ali, **A. Panja** and P. Banerjee, *Inorg. Reac. Mechanisms*, **2001**, *3*, 117.

c) Course Materials:

d) Seminar/Conference Proceedings:

10. Invited Talk/Special Lecture/Seminar/Conference Presentation:

1. International Symposium in Frontier in Inorganic Chemistry – II (FIC-II), March 08-09, 2018, Organised by Department of Inorganic Chemistry, IACS, Kolkata

11. Other Academic/Official Responsibilities (At College/University Level or for Any Other Body of Higher Education):

12. Awards/Recognitions/Fellowships/Memberships (if any):

* Awarded **JSPS Invitation Fellowship** on 2010
* Awarded **Erasmus Mundus Fellowship** for postdoctoral researcher (2009)
* Awarded **JSPS Postdoctoral Fellowship** on August 2006 (not joined)
* Qualified National Eligibility Test (NET), Council of Scientific and Industrial Research (CSIR) for Lectureship and Fellowship, Govt. of India, 2000
* Qualified Graduate Aptitude test in Engineering (GATE) for Fellowship, 1999
* Member of Indian Chemical Society, India
* Life member of Indian Physical Society
* Life Member of Indian Chemical Society

12. Social Responsibility Initiatives: NA