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## E-LEARNING MODULE

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I am highly interested in using computer aided teaching with PowerPoint presentation (as far as it is possible with available recourses) and I have prepared several such presentations full of textual contents with graphics, drawings, diagrams, etc. I am presently engaged in preparing *e-learning* study materials comprising of course materials, ppt.-presentations, video lectures, assessment papers and other relevant information. Online MCQ is provided to the students on regular basis to facilitate leaning more meaningful and enjoyable.

The contents are available at:

<http://drjhumpamukherjee.wordpress.com>

# CURRICULUM VITAE

## DR. JHUMPA MUKHERJEE

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### DESIGNATION

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Assistant Professor of Chemistry, Dum Dum Motijheel College, Kolkata-700074.

### ACADEMIC BACKGROUND

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- Ph.D. (Chemistry), Indian Institute of Technology–Kanpur, Uttar Pradesh, 2005.
- M.Phil. (Environmental Science), The University of Burdwan, West Bengal, 1999.
- M.Sc. (Chemistry: Specialization in Bioinorganic Chemistry), the University of Burdwan, West Bengal, 1997.

### POSITIONS HELD/ HOLDING

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- 2010–Present : Assistant Professor, Dum Dum Motijheel College
- 2008–2010 : Research Associate, Department of Chemistry, University of Kalyani
- 2006–2007 : Post-Doctoral Fellow, Department of Chemistry, University of California, USA
- 2005–2006 : Post-Doctoral Fellow, Department of Chemistry, University of Kansas, USA
- 2005–2005 : Post-Doctoral Fellow, Department of Chemistry, University of Giessen, Germany
- 2005–2005 : Post-Doctoral Fellow, Department of Chemistry, IIT–Kanpur

### TEACHING INTEREST

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- Co-ordination chemistry, Bioinorganic Chemistry, Synthesis and characterisation of metallic nanoparticles.

**Software Skills:** WINGX, Magnetic data fitting program, Spin quantification program, Chemdraw, Crystal maker, Diamond and Mercury, Kaleidograph.

**Working Knowledge of Instruments:** Electrochemistry (Prinston applied research instrument and BAS instrument), Spectrophotometers (Infrared and UV–visible), NMR and EPR spectrometers, Gas chromatographic instrument.

### RESEARCH PROFILE

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#### Ph.D. Thesis:

*Chemistry of Mono-, Di- and Trimeric Copper (II) Complexes: Inorganic and Bioinorganic Perspectives.*

**Supervisor:** Prof. R. N. Mukherjee, Department of Chemistry, Indian Institute of Technology–Kanpur.

#### PUBLICATIONS:

##### Journal Paper:

1. Lacy, D.C., **Mukherjee, J.**, Lucas, R.L., Day, V.W. and Borovik, A.S. (2013): Metal Complexes with Varying Intramolecular Hydrogen Bonding Networks., *Polyhedron*, 52: 261-267.
2. Mandal, S., **Mukherjee, J.**, Lloret, F. and Mukherjee, R.N. (2012): Modeling Tyrosinase and Catecholase Activity Using New m\_Xylyl-Based Ligands with Bidentate Alkylamine Terminal Coordination, *Inorganic Chemistry*, 51: 13148–13161.
3. Nayak, D., Mukherjee, D., Banerjee, A. and **Mukherjee, J.** (2010): Studies on complexation of cobalt with bioligand, *Journal of Radioanalytical and Nuclear Chemistry*, 283: 477-480.

4. **Mukherjee, J.**, Zart, M.K., Lucas, R.L., Powell, D.R., Day, V.W. and Borovik, A.S. (2008): Synthesis, Structure, and Physical Properties for a Series of Monomeric Iron (III) Hydroxo Complexes with Varying Hydrogen Bond Networks. *Inorganic Chemistry*, 47(13): 5780-5786.
5. Astner, J., Weitzer, M., Foxon, S.P., Schindler, S., Heinemann, F.W., **Mukherjee, J.**, Gupta, R., Mahadevan, V. and Mukherjee, R.N. (2008): Syntheses, Characterization and Reactivity of Copper Complexes with Tridentate N-Donor Ligands, *Inorganica Chimica Acta*, 361(1): 279-292.
6. Balamurugan, V., **Mukherjee, J.**, Hundal, M.S. and Mukherjee, R.N. (2007): Supramolecular Architectures with Ladder and Lamellar Topologies Using Metal-Ligand Coordination Units via C-H Cl and O-H Cl Hydrogen-Bonding, *Structural Chemistry*, 18(2): 133-144.
7. Lucas, R.L., Zart, M.K., **Mukherjee, J.**, Sorrell, T.N., Powell, D.R. and Borovik, A.S. (2006): A Modular Approach Toward Regulating the Secondary Coordination Sphere of Metal Ions: Differential Dioxygen Activation Assisted by Intramolecular Hydrogen Bonds, *Journal of the American Chemical Society*, 128: 15476-15489.
8. **Mukherjee, J.** and Mukherjee, R.N. (2006): Reaction with dioxygen of a Cu (I) complex of 1-benzyl-[3-(2-pyridyl)] pyrazole triggers ethyl acetate hydrolysis: acetato-/pyrazolato-, dihydroxo- and diacetato-bridged Cu (II) complexes, *Dalton Transactions*, 1611-1621.
9. **Mukherjee, J.**, Gupta, R., Mallah, T. and Mukherjee, R.N. (2005): A new ( $\mu^3$ -carbonato) tricopper (II) complex with symmetry related unilateral triangular array of metal centers; structure and magnetism., *Inorganica Chimica Acta*, 358(9): 2711-2717.
10. **Mukherjee, J.**, Balamurugan, V., Hundal, M.S. and Mukherjee, R.N. (2005): Fixation of CO<sub>2</sub> in Air: Synthesis and Crystal Structure of CO<sub>3</sub>-bridged tricopper (II) Compound, *Journal of Chemical Sciences*, 117(2): 111-116.
11. Balamurugan, V., Jacob, W., **Mukherjee, J.** and Mukherjee, R.N. (2004): Designing neutral coordination networks using inorganic supramolecular synthons: Combination of coordination chemistry and C-H Cl hydrogen bond, *Cryst. Eng. Commun.*, 6: 396-400.
12. Foxon, S.P., Utz, D., Astner, J., Schindler, S., Thaler, F., Heinemann, F.W., Liehr, G., **Mukherjee, J.**, Balamurugan, V., Ghosh, D. and Mukherjee, R.N. (2004): Reaction behaviour of dinuclear copper (I) complexes with m-xylyl-based ligands towards dioxygen. *Dalton Transactions*, 2321-2328.
13. Singh, S., Mishra, V., **Mukherjee, J.**, Seethalekshmi, N. and Mukherjee, R.N. (2003): Synthesis and properties of [MII (L<sub>6</sub>)<sub>2</sub>] [ClO<sub>4</sub>]<sub>2</sub> (M = Fe, Co and Ni): Structures of Co and Ni complexes and spin state transition by Fe complex (L<sub>6</sub> = 2-[3-(2'-pyridyl)pyrazol-1-ylmethyl] pyridine. *Dalton Transactions*, 17: 3392-3397.
14. Utz, D., Heinemann, F.W., **Mukherjee, J.**, Mukherjee, R.N. and Schindler, S. (2003): Synthesis and Structural characterization of a new tetranuclear macrocyclic copper(I) complex, *Zeitschrift für anorganische und allgemeine Chemie*, 629: 2211-2215.
15. **Mukherjee, J.**, Balamurugan, V., Gupta, R. and Mukherjee, R.N. (2003): Synthesis and properties of iron(III) and cobalt(III) complexes of an unsymmetrical facially capping ligand. Molecular structures of [(L<sub>2</sub>)FeIII(N<sub>3</sub>)<sub>3</sub>], [(L<sub>2</sub>)<sub>2</sub>FeIII<sub>2</sub>( $\mu$ -O) ( $\mu$ -O<sub>2</sub>CMe)<sub>2</sub>] [ClO<sub>4</sub>]<sub>2</sub>.1/2C<sub>6</sub>H<sub>6</sub>.1.5H<sub>2</sub>O and [(L<sub>2</sub>)<sub>2</sub>CoIII<sub>2</sub> ( $\mu$ -OH)<sub>2</sub>( $\mu$ -O<sub>2</sub>CMe)][ClO<sub>4</sub>]<sub>3</sub>.MeCN [L<sub>2</sub>= methyl [2-(2-pyridyl)ethyl](2-pyridylmethyl)amine], *Dalton Transactions*, 19: 3686-3692.
16. **Mukherjee, J.** and Mukherjee, R.N. (2002): Catecholase activity of binuclear copper (II) complexes with variable endogenous and exogenous bridge., *Inorganica Chimica Acta*, 337(2002): 429-438.

#### Conference Proceedings:

1. Parsell, T., Zinn, P., **Mukherjee, J.** and Borovik, A.S. (2006): Lessons from nature: The effects of hydrogen bonds on metal-mediated transformations, Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, 26-30.

#### **NUMBER OF SEMINAR PRESENTATIONS:**

- International: **3**; National: **6**

#### **NUMBER OF WORKSHOP/ CAPACITY BUILDING COURSE PARTICIPATIONS:**

- International: **1**; National: **9**

#### **MEMBERSHIPS OF LEARNED SOCIETIES**

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- Forum of Scientists and Technologists (FOSET), Kolkata.
- Indian Science News Association (ISNA), Kolkata.

#### **AWARDS**

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- Qualified in the Graduate Aptitude Test for Engineering (GATE) in 1998.
- Awarded 'Junior Research Fellowship (JRF)' and declared eligible for Lectureship (NET) in the subject of *Chemical Sciences* in the Joint CSIR-UGC Test for *Junior Research Fellowship* and *Eligibility for Lectureship (NET)* held in 1999.
- Awarded multiple Post-Doctoral Fellowships in different institutes like Indian Institute of Technology–Kanpur, University of Giessen, University of Kansas and University of California between 2005 and 2007.
- Won Best Presentation Award in the 7<sup>th</sup> National Conference Organized by World Science Congress at Jadavpur University in 2015.