GOVERNMENT GENERAL DEGREE COLLEGE, RANIBANDH

FACULTY PROFILE

DEPARTMENT OF CHEMISTRY

Dr. AMAR HENS

Designation	Assistant Professor (W.B.E.S)
Address	Kanta Buni Tala, Ward No. 11, P.O.- Sonamukhi, Dist- Bankura, Pin -722207, W. B.
Mobile No.	9432373181
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Educational Qualification

Degree	Institution	Year
Ph.D.	Jadavpur University	2016
P.G	Jadavpur University	2010
U.G.	Jadavpur University	2008

Research Areas

The synthesis of various polydentate organic ligands having O, N, S and P donor sites and their transition metal (Zinc, Vanadium, Copper, Cobalt and Rhenium) complexes. The purification of the ligands and metal complexes were done using various chromatographic techniques. The compounds were characterized by Elemental analysis, X-ray diffractometry study and also by various spectroscopic techniques like Mass, IR, NMR, UV-vis absorption, Emission, Life time decay and CD spectroscopic measurements.

Areas of Interest/ Specialization

The electrochemical, magnetic and sensing properties (both cation and anion sensing) and catalytic activity were also done. The reactivity of the functional model complexes was also scrutinized. I have also performed full theoretical calculations (DFT and TDDFT study) for all the compounds in their both ground and excited states to correlate the experimentally observed physicochemical properties and also to explain weak interactions (mainly Hydrogen bonding).

Career Profile

Name of Institutes/ College	From	To	Course	Designation
A.B. N. Seal College, Cooch Behar	11.12.2015	24.07.2016	U.G.	Asst. Professor
Govt. General Degree College, Ranibandh	27/07/2016	Till	U. G.	Asst. Professor (H.O.D)

Publications

INTERNATIONAL JOURNALS

1. A reversible turn-off fluorescence probe (HNAPP) for Zn(II) ion and inorganic phosphate ions (H2P and HP) at physiological pH
   A. Hens, *RSC Adv.,* 2015, **5**, 54352–54363

2. Selective fluorometric detection of F^- and Zn(II) ions by a N, O coordinating sensor and naked eye detection of Cu(II) ions in mixed-aqueous solution
   A. Hens and K. K. Rajak, ***RSC Adv.,*** 2015, **5**, 44764–44777

3. Synthesis, characterization and DFT study of oxorhenium(V) complexes incorporating quinoline based tridentate ligands
   R. Sarkar, **A. Hens** and K. K. Rajak, ***RSC Adv.,*** 2015, **5**, 15084–15095

4. Photophysical property vs. medium: mononuclear, dinuclear and trinuclear Zn(II) complexes
   A.Hens and K. K. Rajak, ***RSC Adv.,*** 2015, 5, 4219–4232

5. Selective $H_2PO_4^-$ anion sensing by two neutral **Zn(II)** complexes and combined theoretical and experimental studies of their structural and spectral properties
   A. Hens, P. Mondal and K. K. Rajak, ***Polyhedron,*** 2015, **85**, 255–266

6. Mononuclear rhenium(I) complexes incorporating 2-(arylazo)phenyl benzyl thioethers: synthesis, structure, spectral, DFT and TDDFT studies
   P. Mondal, R. Sarkar, **A. Hens** and K. K. Rajak, ***RSC Adv.,*** 2014, 4, 38769–38782

7. N, N coordinating schiff base ligand acting as a fluorescence sensor for Zn(II) and colorimetric sensor for copper(II), and zinc(II) in mixed aqueous media

A. Hens, A. Maity and K. K. Rajak, ***Inorg. Chimica Acta***, 2014, **423**,408–420

8. Properties Iso-valence Co(II) and mixed-valence Co(II/III) tetranuclear complexes: synthesis, structure, magnetic and DFT study

P. Mondal, R. Singh, **A. Hens**, J. Cano, E. Colacio, and K. K. Rajak, ***Polyhedron,*** 2013, **65**, 60- 66

9. Synthesis, structure and spectral properties of O, N, N coordinating ligands and their neutral Zn(II) complexes: a combined experimental and theoretical study

A. Hens, P. Mondal, and K. K. Rajak, ***Dalton Trans.*** **2013**, 42, 14905- 14915

10. Dinuclear oxidovanadium(V) complexes incorporating N, N, O, O coordinating ligands: Synthesis, structure, spectral, DFT and TDDFT study

P. Mondal. **A. Hens** and K. K. Rajak, ***Polyhedron,*** 2013,**54**, 228-236

11. Mononuclear and dinuclear Re(I) complexes incorporating 1-(2-pyridylazo)-2-naphtho synthesis, structure, spectral, DFT and TDDFT studies

P. Mondal. **A. Hens**, S. Basak and K. K. Rajak ***Dalton Trans.***, 2013, **42**, 1536

12. Blue emissive ZnII sensor by N_4O_3 heptadentate ligand in mixed aqueous solution at physiological pH 7.4

Amar Hens and K. K. Rajak, ***J. Indian Chem. Soc.***, 2015, **92**, 1805-1815.

Research Paper Presentation in Conferences

1.Chemical Research Society of India 2009 at RKM Residential College, Kol-109

2. National Seminar on Recent Advance in Chemistry, 2012 at Jadavpur University, Kol-32.
3. Lecture Workshop on 'Recent developments in Chemistry', 2012, at Visva Bharati.
4. CSIR National Symposium in Chemistry, 2013 at BHU, Varanasi.
5. International Conference on Structural Chemistry of Molecules and materials, 2014, Calcutta University, Kolkata
6. MTIC-XVI, December 3th-5th, 2015, Department of Chemistry, Jadavpur University, Kol- 32
7. Remedial Coaching Scheme Academic session 2015-16, Govt. of West Bengal, A. B. N. Seal College, Coach Behar, , West Bengal.
8. Entry in Service Coaching Classes Academic session 2015-16, Govt. of West Bengal, A. B. N. Seal College, Coach Behar, West Bengal.
9. Short term Course, UGC sponsored, Equal opportunity Cell, Academic session 2015-16, Govt. of West Bengal, A. B. N. Seal College, Coach Behar,West Bengal.
10. State Level Seminar, North Bengal University Alumni Association, Academic session 2015-16, Govt. of West Bengal, A. B. N. Seal College, Coach Behar,West Bengal.
11. Chemistry today- nanoworld to macroworld, UGC sponsored national Seminar, Department of Chemistry, Sonamukhi College, Bankura, West Bengal, 2016 December 22-23th.
12. National Seminar, Dept of Chemistry, Bidhan nagar Govt College, Academic session 2016-17, Govt. of West Bengal.

Academic Awards:

(i) I am recipient of FFE (Foundation for Excellence) Merit Scholarship at Jadavpur University for the year 2005-2008 for very good results (B. Sc).

(ii) I am recipient of Merit Cum Means Scholarship at Jadavpur University for the year 2008-2010 for very good results (M. Sc).

(iii) I have qualified in Graduate Aptitude Test in Engineering (GATE), 2010 and 2011 in Chemistry. All India GATE Score: 322 and 329.

(iv) I have qualified in National Eligibility Test (NET) in Chemical Science held on December, 2010.

Research Experience:

(*i*) **August, 2013 to December 2015:** UGC Senior Research Fellow, Department of Chemistry, Jadavpur University, Kolkata- 700032.

(***Topic:*** Studies on Some Zinc(II) Chelates with Polydentate Ligands)

(*ii*) **August, 2011 to July, 2013:** UGC Junior Research Fellow, Department of Chemistry, Jadavpur University, Kolkata- 700032.

(***Topic:*** Studies on Some Zn(II) Chelates with Polydentate Ligands)

(*iii*) **December, 2009 to May, 2010:** M.Sc. Project student, Department of Chemistry, Jadavpur University, Kolkata- 700032.

(***Topic:*** Synthesis, Characterization and characterization of Cu(II) complexes using NNS coordinating Schiff Base Ligand)

Technical Skills:

(a) Proficient in the use of Schlenk line for the manipulation of highly air sensitive compounds.

(b) Design and implementation of multi-step organic ligands syntheses.

(c) Catalytic activity study.

(d) Density Functional Theory calculation with Gaussian 03W and 09W program using (both Windows and Linux Version) IBM – Intellestation Z pro – 922892A.

(e) Solved crystal structures of various complexes using WinGX and SHELXTL v.6.14 software packages.

(f) Photophysical studies by using different spectrophotometers such as UV-Vis, CD-spectra, Fluorometer etc.

Academic Qualifications:

Examination	Institute/ University/ Organization	Subjects	Year of Joining	Year of Passing	Marks %/CPI & Division
Madhyamik (10th Standard)	West Bengal Board of Secondary Education (Sonamukhi B. J. High School)	Bengali, English, Geography, History, Physical Science, Life Science, Mathematics	2001	2003	86.37 % & 1ST
Higher Secondary (12th Standard)	West Bengal Council of Higher Secondary Education (Sonamukhi B. J. High School)	Physics, Chemistry Mathematics, Biological Science Bengali, English	2003	2005	88.6 % & 1ST
B.Sc.	Jadavpur University	Chemistry(Honours) Physics, Mathematics and Computer Application (General)	2005	2008	65.0 % (Chemistry), 70.5 % (Physics), 68.83 % (Mathematics) & 1ST
M.Sc.	Jadavpur University	Chemistry (Inorganic)	2008	2010	76.91 % & 1ST
Ph.D.	Jadavpur University	Inorganic Chemistry (**Thesis Title**: *Studies on Some Zinc(II)Chelates with Polydentate Ligands*)	24.8.11	26.10.16	81.0
NET	CSIR-UGC NET	Chemical Science	NA	2010	UGC-JRF
GATE	IIT	Chemistry	NA	2010	Score: 322
GATE	IIT	Chemistry	NA	2011	Score: 329

Declaration

I hereby declare that the information given above is true to the best of my knowledge.

Place: Ranibandh, Bankura

Date: 24/02/2019 **Signature**