Dr. Zia-ur-Rehman (Hafiz-ul-Quran)

Department of Chemistry Quaid-i-Azam University (QAU)

Islamabad-45320, Pakistan

Nationality: Pakistani

Cell # +92-3319371153/ +92-3429427767

Email: hafizqau@yahoo.com/zrehman@qau.edu.pk

Office: +92-51-90642245

Date of Birth: 20-11-1977

Education

Ph.D	2009	QAU Islamabad, Pakistan & McGill University, Montreal, Canada.
M. Phil.	2004	QAU Islamabad
M.Sc.	2002	QAU Islamabad
B.Sc.	1999	University of Peshawar
F.Sc.	1997	Peshawar Board
SSC	1994	Peshawar Board

M.Phil Thesis title: *Synthesis, Spectroscopic Characterization and Biological application of Various Organotin(IV) Complexes of Donor ligands"*

Ph. D Thesis title: "*Synthesis, Spectroscopic Characterization, X-ray Structure and Preliminary Evaluation of DNA Binding Parameters of Organotin(IV) Dithiocarboxylates"*

Ph. D advisor: Professor Saqib Ali (QAU) and Ian S. Butler (McGill, Canada)

Distinctions and Achievements

- Won merit scholarship in M.phil course work.
- Won HEC Indigenous scholarship
- Won HEC, "IRSIP" scholarship

Present position

Tenured Associate Professor, Department of Chemistry, Quaid-i-Azam University Islamabad-45320, Pakistan. May 2017 continuous

Research Interests

- Synthesis and characterization of new metallo-drugs
- Synthesis, characterization and application of surfactants
- Electrochemistry of organic and inorganic compounds of biological significance

- Metal sulfide nanoparticles synthesis from new single source precursors, and their applications in clean energy generation and environmental remediation.
- Synthesis and applications of metal based supramolecules and coordination polymer.

Teaching and Research Experience

Courses I teach on a regular basis. A course (one semester) is defined as 30-35 lectures. Each lecture is 60 minutes in length. I additionally supervise M.Sc inorganic chemistry laboratories.

Inorganic Chemistry I- Course # 331

M. Sc 1st semester

Inorganic Chemistry II- Course # 333

M. Sc 2nd semester

Physical Methods in Inorganic Chemistry CH-625

M.Phil/Ph.D.

Principles and Applications of Molecular Spectroscopy CH-421

M. Sc 4th semester

Chromatographic techniques CH-609

M.Phil/Ph.D.

Kinetics and Mechanisms of Inorganic reactions CH-622

M.Phil/Ph.D

- 7 months teaching experience in Islamabad College for boys G-6 /3, Islamabad.
- 7 month teaching experience in School Education Support Project, QAU Islamabad.
- Six months research experience at University of McGill, Canada.
- Worked as a visiting scientist at McGill University, Canada (20th Feb. 2009 to 30th May 2009).
- Visiting Professor Department of Chemistry QAU, Islamabad-45320 Pakistan (Sep 2009 to July 2010).
- Worked as a visiting scientist in July 2011 (one month) at Jacobs University, Bremen Germany under "Pakistan Program of collaborative Research", HEC.

Membership

- Life time member of The Chemical Society of Pakistan.
- IUPAC Affiliate member for the period of 2011-2012 through the Chemical Society of Pakistan.
- Young Member of the Pakistan Academy of Sciences.
- Member of Board of Study (BOS).

- Member of Board of Faculty (BOF) of Natural Sciences.

Reviewer of the following Journals

- Journal of Coordination Chemistry.
- Inorganic Chimica Acta
- Bioinorganic Chemistry and Applications
- Surfaces and Interfaces
- Applied Organometallic Chemistry
- Journal of Photochemistry and Photobiology B: Biology
- Journal of the Iranian Chemical Society
- Chemosphere

Editorial Board Membership

- Reviews in Nanoscience and Nanotechnology

Supervision

7 M.Phil and 10 Ph.D. students are currently working under my supervision.

Ph.D Students Produced

1. **Dr. Shahan Zeb Khan,** *"New homoleptic and hetroleptic palladium(II) dithiocarbamates: Synthesis, characterization and anticancer screening*". 2014
2. **Mr. Kashif Amir,** *"Evaluation of Anticancer Potential of New Heteroleptic Platinum(II) Dithiocarbamates"* 2017
3. **Mr. Azam Khan,** " *Synthesis, Characterization and Applications of Selected Transition metal Sulfide Nanoparticles" (thesis submitted).*

Ph.D Enrolled:

Supervision

1. **Mr. Muhammad Imran** (thesis write up) degree expected in the start of 2018
2. **Ms. Noor ul Ain,** *"Metal sulfide nanoparticles from single source precursors: Synthesis, Characterization and Applications"*
3. **Ms. Asma Amir,** "*Synthesis, Characterization and Applications of MoS_2 Nanoparticles"*
4. **Ms. Mahewish Arshad,** *"Synthesis, Characterization and Applications of CuS Quantum Dots"*
5. **Mr. Haseeb Ullah, "***Synthesis and Applications of Metal Sulfides-base Near-Infrared Emitting Materials"*
6. **Mr. Abrar,** "*Synthesis, Characterization and Applications of New Microporous Copper(II) complexes"*

7. **Ms. Bushra,** *"Synthesis and Characterization of Metal Sulfide based Sensors"*
8. **Ms.Wagma Ayub,** *"Platinum-based Anticancer Chemotherapeutic Agents"*
9. **Israr Ahmad**

Co-supervision

1. **Mr. Hamid Nawaz,** (foreign referees reports received) , The whole work is done in my lab.
2. **Mr. Faisal Hayat,** "*Synthesis, Characterization and Bioactivity of Homoleptic and Heteroleptic Ruthenium(III) Dithiocarbamates" (Thesis Write up)* The whole work is done in my lab

M.Phil Student

1. **Mr. Mohammad Imran,** *"Structural Characterization And Application of New Mixed Ligands Ni(II) Complexes"* (2012)
2. **Ms. Shaista Ibrahim,** *"Synthesis, Characterization and Application of Zinc(II) Dithiocarbamates"* (2012)
3. **Mr. Sabih-ud-din,** *"Synthesis, Characterization and Biological Activities of Mixed Ligands Copper(II) 4-(4-nitrophenyl)piperazine-1-carbodithioates"* (2012)
4. **Mr. Habibullah (Co-supervision),** *"Synthesis and Characterization of Mixed Ligands Cd(II) Dithiocarbamates"* 2012
5. **Mr. Zafar Ali Khan Khattak,** *"New Mixed Ligands Zinc(II) Dithiocarboxylates and Their Biological Significance"* (2013)
6. **Mr. Sher Ali,** *"Synthesis and X-ray single crystal analysis of new bioactive homobimetallic Organotin (IV) dithiocarbamates"* (2013)
7. **Mr. Rana Faryad Ali,** *"Spectroscopic and X-ray single Crystal Characterization of New Bioactive Sulfur Bridged Homobimetallic Copper(II) Dithiocarbamates"* (2014)
8. **Mr. Syed Niaz Ali Shah,** *"Structural Characterization, TGA Decomposition Kinetics and Bioactivities of New Antimony(III) Dithiocarbamates"* (2014)
9. **Ms.Nabila Rauf Naz,** *"Spectroscopic and X-ray Single Crystal Analysis of New Bioactive Heteroleptic Zn(II) Complexes of Nitrogen and Sulfur Donor Ligands"* (2014)
10. **Ms. Salma Nisar,** *"Evaluation of Anticancer and Anticorrosive Potency of New Heteroleptic Zn(II) complexes"* (2014)
11. **Ms. Noor-ul-ain,** *"Magnetic and Non Magnetic Copper Sulfide Nanoparticles: Synthesis, Characterization and Environmental Application"* (2015).

12. **Ms. Nudrat Mubarak,** *"Solvothermally Synthesized ZnS Nanoparticles from New Single Source Precursors as Effective Agents for the Removal of Congo Red"* (2015).
13. **Mr. Asim Saeed,** "*New Heteroleptic Copper(II) Complexes as Efficient Catalysts for Nitrophenol Reduction"* 2015
14. **Mr. Abrar Ahmad,** *"New Microporous Copper(II) Complexes and their Applications"* 2015
15. **Ms. Shaheen Gul,** "Cadmium Sulfide Nano-catalysts from Single Source Precursors for Detoxification of Industrial Effluents" 2015
16. **Ms. Irsa Naz,** *"Synthesis and Characterization of Environmental Friendly Metal(II) Sulfides Nanoparticles from Single Source Precursors"* 2015
17. **Mr. Jamal Abul Nasir,** *"CdS-based Photocatalysts for the Conversion of Formic Acid to H_2*" 2016
18. **Ms. Hina Ambareen,** *"Synthesis, Characterization and Application of CdS Nanoparicles*" 2016
19. **Ms. Mahwish,** *"CuS Nanoparticles from Copper(II) Dithiocarbamate Precursors: Synthesis, Characterization and Applications"* 2016
20. **Ms. Maria Pervez,** *"Photocatalytic H_2 Generation from Water Splitting on Transition Metals Decorated CdS Nanostructures*" 2016
21. **Ms. Wagma Ayub,** *"Heteroleptic Bimetallic Platinum(II) Dithiocarbamates as Alternative Anticancer Agents to cisplatin"* 2016
22. **Ms. Nafeesa Kanwal,** *"Stratagem to Enhance the Catalytic Performance of CuS Nanostructures for Organic Transformation"* 2016
23. Mr. **Hafiz Abdul Ghafoor,** *"New Strategy for Band Gap Tuning of ZnS Nanostructures for Photocatalytic and Solar Cells Applications"* 2017
24. **Mr. Noor Islam,** *"Synergetic Co-catalysts Supported on g-C_3N_4 for Visible Light driven Photocatalytic Hydrogen Generatio*n" 2017
25. **Mr. Israr Ahmad, "***Structure, Optical, Magnetic and Photocatalytic Properties of $Cu_{1-x}Co_xS$"*2017
26. **Ms. Nazish Dalil, "***Anticancer Applications of New Nickel(II) Complexes with Detoxicant Ligands"* 2017
27. **Ms. Salma Batool, "**Nickel Modified CuS Nanocatalyst of Environmental and Pharmaceutical Significance" 2017

28. Ms. **Hira Fazal, "**Structural Chemistry, DNA Binding Studies and Anticancer Activity of Metal(II) Dithiocarbamates" 2017
29. **Najmul Hussain,** Synthesis, Characterization and Application of Co-catalyst Modified g-C_3N_4/CdS Nanohybrid System" 2017

M.Phil Students (enrolled): Ms. Madiha, Ms.Neelum, Ms. Ujala, Ms. Sanea

Additional responsibilities

- In charge of TGA, DSC, FT-IR, CHNS
- In charge of glass blowing section
- BS coordinator for two years (05-09-2013 to 10-08-2015)
- Student Advisor (Chemistry) since 2011.

Awards

- Dr. Abdus Salam Prize 2011 (Pakistan Academy of Science & TWAS).
- Dr. Atta-ur-Rehman Gold Medal PAS 2017
- CSP Gold Medal 2016-2017
- Research Productivity Allowance, 2009 (PCST).
- Research Productivity Allowance, 2011 (PCST).
- TTS performance based bonus increment 2011 (QAU).
- TTS performance based bonus increment 2012 (QAU).
- Research Productivity Allowance, 2012 (PCST)
- TTS performance based bonus increment 2013 (QAU).
- Research Productivity Allowance, 2013 (PCST), in B-category.
- TTS performance based bonus increment 2014 (QAU).
- Research Productivity Allowance, 2014 (PCST), in c-category.
- Research Productivity Allowance, 2015 (PCST), in c-category.
- TTS performance based bonus increment 2016 (QAU).
- Research Productivity Allowance, 2016 (PCST), in c-category.

Book chapter

- Chapter title: Electrochemical and Spectroscopic Investigations of Metal Based Anticancer Drugs-DNA Binding

Authors: Afzal Shah, **Zia-ur-Rehman**, Saqib Ali, Rumana Qureshi, Amin Bashah Book title: DNA Binding and DNA Extraction: Methods, Applications and LimitationsPublisher: Nova Science Publishers, Inc. New York, 2012.

Conferences/Symposium Attended

- Two conferences held at Department of Chemistry, Quaid-I-Azam University Islamabad, Pakistan.
- Poster presented in the 5th Annual McGill Biophysical Chemistry Symposium 2009 (Poster number 18).
- Presented a lecture on *"Structural properties, antimicrobial and anticancer potency of new organotin(IV) dithiocarboxylates"* in 3rd International Conference on Drug Discovery & Therapy' held in Dubai, UAE from February 7th to 10th, 2011.
- Hexagonal CuS nanoparticles from a new copper(II) dithiocarbamate precursor as an efficient photocatalyst for detoxification of Congo red, TIIKM's 2nd Annual International Conference on Nanoscience and Nanotechnology 02-04 September 2015, Colombo, Sri Lanka (Oral Presentation).
- "Monofunctional Platinum(II) Dithiocarbamates - Anticancer Metallodrugs of the Future" 3rd Iternational Turkic World Conference on Chemical Sciences and Technologies September 10-13-2017 Baku Azerbaijan.
- "Platinum(II)- and Palladium(II) Dithiocarbamates - Anticancer Metallodrugs of the Future?" 3rd International Conference on Recent Trends in Chemistry 23-24 November, 2017, Academic Complex, Allama Iqbal Open University, Islamabad, Pakistan (**Invited lecture**).
- " New Anticancer Metallodrugs of the Future" Department of Pharmacy Quaid-i-Azam University Islamabad-45320, Pakistan.

International Lectures

- Synthesis, Spectroscopic Characterization, X-ray Structure and Preliminary Evaluation of DNA Binding Parameters of Organotin(IV) Dithiocarboxylates (Jacobs University Bremen Germany on 28th September 2010).
- Structural characterization and mechanistic investigation of the antimicrobial and anticancer action of organotins (Jacobs University Bremen Germany, 20th July 2011).
- Structural diversity and DNA binding strength of new organotin(IV) complexes (National University of Singapore 6th September 2011).

Ph.D Examiner

- Ph.D Examiner of Mr. Naveed Umar at Jacobs University Bremen Germany dated 29th September 2010.

Research Projects

NO.	TITLE	Donor Agency	Amount (Rs./)	From	To	Role as
1.	Synthesis, spectroscopic and single-crystal X-ray crystallographic characterization of new organotin(IV) dithiocarboxylates of biological significance	URF	PKR 50,000/	2010	2011	[a]PI
2.	Synthesis, Structural properties of new organotin (IV) derivatives of S, S-donor ligand and their bioactivities.	HEC *Project No: PM-IPFP/HRD/HEC/2011/275362*	PKR 500,000/	2011	2012	PI
3	Synthesis, characterization and Biological Activities of Novel Pyridine Based DNA Minor Groove Binding agents.	HEC *Project No: PM-IPFP/HRD/HEC/2011/381*	PKR 500,000/	2011	2012	Co-PI
4	Comparative Evaluation of the Antimicrobial and Anticancer properties of new Palladium(II) and Platinum(II) Dithiocarboxylates	COMSTECH/TWAS (International Research Project)	15,000 US dollar		2012	PI

5.	Robust protocols for the synthesis of new potent anticancer ferrocenyl guanidine based bimetallic compounds	PSF			2014	Co-PI
6.	New Crescent Shape Heteroleptic and Macrocyclic Homoleptic Pt(II) Dithiocarbamates as Potent Anticancer Chemotherapeutic Agents	HEC	3.4 million			PI

[a]PI = Principal investigator

HEC approved supervisor

ID # 3774

Collaborations

- **Prof. Dr. Ian S. Butler**, Department of Chemistry Otto Maass Building McGill University 801 Sherbrooke Street West Montreal, Quebec Canada H3A 2K6.
- **Drs. A. Meetsma**, Crystal Structure Center, University of Groningen, Nijenborgh 4, NL-9747 AG Groningen, The Netherlands.
- **Prof. Dr. Mohammed Fettouhi** , Chemistry department, PO box: 5048 , KFUPM 31261 Dhahran Saudi Arabia
- **Prof. John M. Pezzuto**, Dean College of Pharmacy University of Hawaii at Hilo 34 Rainbow Drive Hilo, Hawaii 96720.
- **Prof. Wie Chen**, Department of Physics The University of Texas at Arlington Science Hall Room 108 502 Yates Street Box 19059, Arlington, Texas 76019
- **Prof. Dan-Jae Lin**, Associate Professor, Department of Dental Hygiene, China Medical University No.91 Hsueh-Shih Road, Taichung, Taiwan 40402, ROC.

- **Edward R. T. Tiekink**, Research Centre for Crystalline Materials, School of Science and Technology, Sunway University, 47500 Bandar Sunway, Selangor Darul Ehsan, Malaysia.
- **Dr. Tamara Kondratyuk**, College of Pharmacy, University of Hawaii at Hilo, 34 Rainbow Drive, Hilo, HI, 96720, USA.
- **Francine Bélanger-Gariepy**, Département de Chimie, Université de Montréal, Montreal, Canada

Research Publications

Years 2006, 2007

1. **Zia-ur-Rehman**, Saira Shahzadi, Saqib Ali, Guo-Xin Jin, "Preparation, Spectroscopy, Antimicrobial Assay, and X-Ray Structure of Dimethyl bis-(4-methylpiperidinedithiocarbamato-S,S´)-tin(IV)", *Turk. J. Chem.* 31 (2007) 435-442.
2. **Zia-ur-Rehman,** Niaz Muhammad, Saqib Ali, Auke Meetsma, "Dibutylchloro[4-(4-nitrophenyl)piperazine-1-carbodithioato-κ^2 S,S´]tin(IV)", *Acta Cryst.* E63 (2007) m89-m90.
3. **Zia-ur-Rehman,** Niaz Muhammad, Saqib Ali, Auke Meetsma, "Bis(4-benzylpiperidine-1-carbodithioato-κ^2 S,S´)dimethyltin(IV)" *Acta Cryst* E63 (2007) m431-m432.
4. Zia-ur-Rehman, Niaz Muhammad, Saqib Ali, Auke Meetsma, "1,3-Bis(4-bromophenyl)thiourea", *Acta Cryst.* E63 (2007) o632-o633.
5. Niaz Muhammad, **Zia-ur-Rehman,** Saqib Ali, Auke Meetsma, "1,3-Di-o-tolylthiourea", *Acta Cryst.* E63 (2007) o634-o635.
6. Niaz Muhammad, **Zia-ur-Rehman,** Saqib Ali, Auke Meetsma, "3-(4-Bromophenyl)-2-methylacrylic acid", *Acta Cryst.* E63 (2007) o2174-o2175.
7. Niaz Muhammad, **Zia-ur-Rehman**, Saqib Ali, Auke Meetsma, "3-(4-Bromophenyl)-2-ethylacrylic acid", *Acta Cryst.* E63 (2007) o2557-o2558.
8. **Zia-ur-Rehman,** Saira Shahzadi, Saqib Ali, Amin Badshah, Guo-Xin Jin, "Crystal Structure of 1,1-Dibutyl-1,1-bis[(4-methyl-1-piperidinyl)- dithiocarbamato)] Tin(IV)", *J. Iran.Chem. Soc.* 3 (2006) 157-160.
9. **Zia-ur-Rehman,** Niaz Muhammad, Saqib Ali, Auke Meetsma, "Chlorodiethyl[4-(4-nitrophenyl)piperazine-1-carbodithioato]tin(IV)", *Acta Cryst.* E63 (2006) m3560-m-3561.

Year 2008

10. **Zia-ur-Rehman**, Mirela Barsan, I. Wharf, Niaz Muhammad, Saqib Ali, A. Meetsma, Ian S. Butler, "Synthesis, spectroscopic characterization, and crystal structures of two chlorodiorganotin(IV) 4-(2-methoxyphenyl)piperazine-1-carbodithioates",*Inorg. Chim. Acta* 361 (2008) 3322-3236.
11. Niaz Muhammad, Muhammad Nawaz Tahir, **Zia-ur-Rehman**, Saqib Ali, Farkhanda Shaheen, "3-(4-Chlorophenyl)-2-methylacrylic acid", *Acta Cryst.* E64 (2008) o1542.
12. Niaz Muhammad, M. Nawaz Tahir, Zia-ur-Rehman, Saqib Ali, "2-(4-Ethoxybenzylidene)butanoic acid", *Acta Cryst.* E64 (2008) o1458. `
13. Niaz Muhammad, M. Nawaz Tahir, Saqib Ali, **Zia-ur-Rehman**, Muhammad Akram Kashmiri,"2-(4-Isopropylbenzylidene)propanoic acid" *Acta Cryst.* E64 (2008) o1456.
14. Niaz Muhammad, Saqib Ali, M. Nawaz Tahir, **Zia-ur-Rehman, "**2-Methyl-3-(3-methylphenyl)acrylic acid" *Acta Cryst.* E64 (2008) o1373.
15. Niaz Muhammad, M. Nawaz Tahir, Saqib Ali, **Zia-ur-Rehman**, "catena-Poly[[trimethyltin(IV)]-μ-[(E)-2-methyl-3-(3-methylphenyl)acrylato-κ^2O:O´]]", *Acta. Cryst.* E64 (2008) m978.
16. Niaz Muhammad, M. Nawaz Tahir, Saqib Ali, **Zia-ur-Rehman, "**Bis[2-(3-chlorobenzylidene)propanoato-κ^2O,O´]diethyltin(IV)", *Acta. Cryst.* E64 (2008) m946-m947.
17. Niaz Muhammad, M. Nawaz Tahir, **Zia-ur-rehman**, Saqib Ali, Islam Ullah Khan, "(*E*)-2-(2-Fluorobenzylidene)butanoic acid", *Acta Cryst.* E64 (2008) o733.
18. Niaz Muhammad, M. Nawaz Tahir, **Zia-ur-rehman**, Saqib Ali, "2-Methyl-3-(4-nitrophenyl)acrylic acid", *Acta Cryst.* E64 (2008) o1717-o1718.

Year 2009

19. **Zia-ur-Rehman**, M. Nawaz Tahir, Muhammad Danish, Niaz Muhammada, Saqib Ali, "4-(4-Methoxyphenyl)piperazin-1-ium chloride", *Acta Cryst.* E65 (2009) o503.
20. **Zia-ur-Rehman**, Afzal Shah, Niaz Muhammad, Saqib Ali, Rumana Qureshi, Ian Sydney Butler, "Synthesis, characterization and DNA binding studies of penta- and hexa-coordinated diorganotin(IV) 4-(4-nitrophenyl)piperazine-1-carbodithioates", *J. Organomet. Chem.* 694 (2009) 1998-2004.
21. Niaz Muhammad, **Zia-ur-Rehman**, Saqib Ali, Auke Meetsma, Farkhanda Shaheen, "Organotin(IV) 4-methoxyphenylethanoates: Synthesis, spectroscopic characterization, X-ray structures and in vitro anticancer activity against human prostate cell lines (PC-3)", *Inorg. Chim. Acta* 362 (2009) 2842-2848.

22. **Zia-ur-Rehman**, Afzal Shah, Niaz Muhammad, Saqib Ali, Rumana Qureshi, Ian Sydney Butler, "Synthesis, spectroscopic characterization, X-ray structure and evaluation of binding parameters of new triorganotin(IV) dithiocarboxylates with DNA", *Eur. J. Med. Chem.* 44 (2009) 3986-3993.

23. Niaz Muhammad, Afzal Shah, **Zia-ur-Rehman**, Shaukat Shuja, Saqib Ali, Rumana Qureshi, Auke Meetsma, Muhammad Nawaz Tahir, "Organotin(IV) 4-nitrophenylethanoates: Synthesis, structural characteristics and intercalative mode of interaction with DNA", *J. Organomet. Chem.* 694 (2009) 3431-3437.

24. **Zia-ur-Rehman**, Niaz Muhammad, Saqib Ali, Ian S. Butler, Auke Meetsma, Momin Khan, "New dimeric, trimeric and supramolecular organotin(IV) dithiocarboxylates: Synthesis, structural characterization and biocidal activities", *Polyhedron* 28 (2009) 3439-3448.

Year 2010

25. Aziz-ur-Rehman, Mukhtiar Hussain, **Zia-ur-Rehman**, Abdul Rauf, Faiz-ul-Hassan Nasim, Asif Ali Tahir, Saqib Ali, "New tetrahedral, square-pyramidal, trigonal-bipyramidal and octahedral organotin(IV) 4-ethoxycarbonyl- piperazine-1-carbodithioates: Synthesis, structural properties and biological applications", *J. Organomet. Chem.* 695 (2010) 1526–1532.

26. Shaukat Shuja, Afzal Shah, **Zia-ur-Rehman**, Niaz Muhammad, Saqib Ali, Rumana Qureshi, Nasir Khalid, Auke Meetsma, "Diorganotin(IV) derivatives of ONO tridentate Schiff base: Synthesis, crystal structure, in vitro antimicrobial, anti-leishmanial and DNA binding studies", *Eur. J. Med. Chem.* 45 (2010) 2902-2911.

Year 2011

27 Aziz-ur-Rehman, Mukhtiar Hussain, **Zia-ur-Rehman**, Saqib Ali, Abdul Rauf, Faiz ul Hassan Nasim, Madeleine Helliwell, Self-assembled pentagonal bipyramidal and skew trapezoidal organotin(IV) complexes of substituted benzoic acids: Their antibacterial, antifungal, cytotoxic, insecticidal and urease inhibition activities, *Inorg. Chim. Acta* 370 (2011) 27–35.

28. **Zia-ur-Rehman**, Niaz Muhammad, Saqib Ali, Ian S. Butler, A. Meetsma, "New mononuclear organotin(IV) 4-benzhydrylpiperazine-1-carbodithioates: Synthesis, spectroscopic characterization, X-ray structures and *in vitro* antimicrobial activities", *Inorg. Chim. Acta.* 373 (2011) 187-194.

29. Mukhtiar Hussain, **Zia-ur-Rehman**, Muhammad Hanif, Muhammad Altaf, Aziz-ur-Rehman , SaqibAli, Kingsley J. Cavell, "Structural studies of diethyltin(IV) derivatives and their

biological aspects as potential antitumor agents against *Agrobacterium tumefacien cells" Appl. Organomet. Chem.* 25 (2011) 412-419.

30. **Zia-ur-Rehman**, Niaz Muhammad, Shaukat Shuja, Saqib Ali, Ian S. Butler, Auke Meetsma, "Synthesis, spectroscopic properties, X-ray single crystal analysis and antimicrobial activities of organotin(IV) 4-(4-methoxyphenyl)piperazine-1-carbodithioates", *Inorg. Chim. Acta* 376 (2011) 381–388.
31. Shaukat Shuja, **Zia-ur-Rehman**, Niaz Muhammad, Saqib Ali, Nasir Khalid, Muhammad Nawaz Tahir, "New dimeric and supramolecular organotin(IV) complexes with a tridentate Schiff base as potential biocidal agents" *J. Organomet. Chem.* 696 (2011) 2772-2781.
32. Hizbullah Khan, Amin Badshah, Ghulam Murtaz, Muhammad Said, **Zia-ur-Rehman,** Christine Neuhausen, Margarita Todorova, Bertrand J. Jean- Claude, Ian S. Butler, "Synthesis, characterization and anticancer studies of mixed ligand dithiocarbamate palladium(II) complexes" *Eur. J. Med. Chem.* 46 (2011) 4071-4077.
33. Afzal Shah, Erum Nosheen, Rumana Qureshi, Muhammad Masoom Yasinzai, Suzanne K. Lunsford, Dionysios D. Dionysiou, **Zia ur Rehman**, Muhammad Siddiq, Amin Badshah, Saqib Ali, "Electrochemical Characterization, Detoxification and Anticancer activity of Didodecyldimethylammonium Bromide" *International Journal of Organic Chemistry* 1 (2011) 183-190.

Year 2012

34. Farzana Shaheen, **Zia-ur-Rehman**, Saqib Ali, Auke Meetsma, "Structural properties and antibacterial potency of new supramolecular organotin(IV) dithiocarboxylates", *Polyhedron* 31(2012) 697–703.
35. F. Javed , A. A. Altaf, A. Badshah, B. lal , M. Siddiq , **Zia-ur-Rehman** , A. Shah , M. N. Tahir, "New supramolecular ferrocenyl amides: synthesis, characterization, and preliminary DNA-binding studies" *J. Coord. Chem.* 65 (2012) 969-979.

36R. Afzal Shah, Latif-ur-Rahman, Rumana Qureshi, **Zia-ur-Rehman** "Synthesis, characterization and applications of bimetallic (Au-Ag, Au-Pt,Au-Ru) alloy nanoparticles" Rev. Adv. Mater. Sci. 30 (2012) 133-149.

37. Hizbullah Khan, **Zia-ur-Rehman**, Afzal Shah, Muhammad Said, Ghulam Murtaza, Ian S. Butler, Safeer Ahmed, Frédéric-Georges Fontaine, Amin Badshah, "New dimeric and supramolecular mixed ligand Palladium(II) dithiocarbamates as potent DNA binders" *polyhedron* 39 (2012) 1–8.

38. **Zia-ur-Rehman**, N. Muhammad, A. Shah, S. Ali, A. Meetsma, " Supramolecular organotin(IV) dithiocarboxylates as potential antimicrobial agents" *J. Coord. Chem.* 65 (2012) 3238–3253.

39. E. Nosheen, A. Shah, A. Badshah, **Zia-ur-Rehman**, H. Hussain, R. Qureshi, S. Ali, M. Siddiq, A. M. Khan " Electrochemical oxidation of hydantoins at glassy carbon electrode" *Electrochimica Acta,* 80 (2012**)** 108-117**.**

40R. G. S. Khan, A. Shah, **Zia-ur-Rehman**, David Barker, "Chemistry of DNA Minor Groove Binding Agents" *J. Photochem. Photobiol. B-Biol.* 115 (2012) 105-118.

41. S. Munir, A. Shah, F. Zafar, A. Badshah, X. Wang, **Zia-ur-Rehman**, H. Hussain, S. K. Lunsford, " Redox behavior of a derivative of vitamin K at a glassy carbon electrode" *Journal of the Electrochemical Society* 159 (2012) G112-G116.

42. F. Asghar, A. Badshah, A. Shah, M. K. Rauf, M. I. Ali, M. N. Tahir, E. Nosheen, **Zia-ur-Rehman**, R. Qureshi "Synthesis, characterization and DNA binding studies of organoantimony(V) ferrocenyl benzoates" *J. Organomet. Chem.* 717 (2012) 1-8.

43. N. Muhammad, **Zia-ur-Rehman**, S. Shujah, A. Shah, S. Ali, A. Meetsma, Z. Hussain, "Synthesis, structural characteristics and antimicrobial activities of new organotin(IV) 3-(4-bromophenyl)-2-ethylacrylates" *J. Coord. Chem.* 65 (2012) 3766–3775.

44. H. Shabbeer, A. Khan, A. Shah, **Zia-ur-Rehman**, S. M. Shah, A. Khan, S. S. Shah, " Effect of Acidic and Basic Conditions on the Plasmon Band of Colloidal Silver" Walailak J Sci & Tech; 9 (2012) 229-237.

45. **Zia-ur-Rehman**, Niaz Muhammad, Afzal Shah, Saqib Ali, Ezzat Khan, "New supramolecular triorganotin(IV) dithiocarboxylates as potential antibacterial agents" *Heteroatom Chemistry* 23 (2012) 560–567.

46. Afzal Shah, Erum Nosheen, Fateen Zafar, Syed Noman uddin, Dionysios D. Dionysiou, Amin Badshah, **Zia-ur-Rehman**, Gul Shehzada Khan, "Photochemistry and electrochemistry of anticancer Uracils" *J. Photochem. Photobiol. B-Biol.* 117 (2012) 269–277.

Year 2013

47. Shamsa Munir, Afzal Shah, Abdur Rauf, Amin Badshah, Suzanne K. Lunsford, **Zia-ur-Rehman**, Hidayat Hussain, Gul Shahzada Khan, "Redox behavior of a novel menadiol derivative at glassy carbon electrode" *Electrochim. Acta* 88 (2013) 858-864.

48. Afzal Shah, Abdur Rauf , Asad Ullah, Azeema Munir, Rumana Qureshi, Iftikhar Ahmad, Muhammad Tahir Soomro, **Zia-ur-Rehman** "Electrochemical investigations of unexplored anthraquinones and their DNA binding" *Journal of Electrochemical Science and Engineering* 31 (2013) 19-27.

49. Mukhtiar Hussain, **Zia-ur-Rehman**, M. Sheeraz Ahmad, M. Altaf, S. Ali, "Structural and biological studies of new monomeric, tetrameric and polymeric organotin(IV) esters of 3-(benzo[d][1,3]dioxol-4-yl)propanoic acid" *J. Coord. Chem.* 66 (2013) 868-880.

50. Afzal Shah, Erum Nosheen, Shamsa Munir, Amin Badshah, Rumana Qureshi, **Zia-ur-Rehman**, Niaz Muhammad, Anwar-ul-Haq Ali Shah, "Characterization and DNA binding studies of unexplored imidazolidines by electronic absorption spectroscopy and cyclic voltammetry" *J. Photochem. Photobiol. B-Biol.* 120 (2013) 90–97.

51. Shaukat Shujah, Saqib Ali, **Zia-ur-Rehman**, M. Nawaz Tahir, Auke Meetsma "6-[(2,4-Dimethylanilino)methylidene]-2-hydroxycyclohexa-2,4-dienone" Acta Cryst. E69 (2013) o871.

52. Afzal Shah, Azhar Hussain Shah, Shams-ul-Mahmood, Imdad ullah, **Zia-ur-Rehman** "Cost effective procedures for extremely efficient synthesis of environmental friendly surfactant" Tenside Surf. Det. 50 (2013) 160 -168.

53. Nasir Khan, Bhajan Lal, Amin Badshah, Ataf Ali Altaf, Shafqat Ali, Saqib Kamal , **Zia-ur-Rehman**, "DNA Binding Studies of New Ferrocene based Bimetallics" J. Chem. Soc. Pak. 35 (2013) 916-921.

54. Shaukat Shujah, **Zia-ur-Rehman**, Niaz Muhammad, Afzal Shah, Saqib Ali, Nasir Khalid, Auke Meetsma "Bioactive hepta- and penta-coordinated supramolecular diorganotin(IV) Schiff bases" *J. Organomet. Chem.* 741-724 (2013) 59-66.

55. Afzal Shah, Asad Ullah, Abdur Rauf, **Zia-ur- Rehman**, Shaukat Shujah, Syed Mujtaba Shah, Amir Waseem "Detailed electrochemical probing of a biologically active isoquinoline" Journal of The Electrochemical Society 160 (2013) H597-H603.

56. Rukhsana Gul, Azim Khan, Amin Badshah, Muhammad Khawar Rauf, Afzal Shah, **Zia-ur-Rehman**, Asghari Bano, Rabia Naz, Muhammad Nawaz Tahir, "New supramolecular ferrocenyl phenylguanidines as potent antimicrobial and DNA-binding agents" *J. Coord. Chem.* 66 (2013)1959-1973.

57. Shamsa Munir, Afzal Shah, Abdur Rauf, Amin Badshah, Hidayat Hussain, **Zia-ur-Rehman,** Zahoor Ahmad "Redox behavior of juglone in buffered aq.: Ethanol media**"** C. R. Chimie 16 (2013) 1140–1146.
58. Afzal Shah, Asad Ullah, Erum Nosheen, Usman Ali Rana, Imran Shakir, Amin Badshah, Zia-ur Rehman, Hidayat Hussain "Detailed Electrochemical Probing of the pH Dependent Redox Behavior of 1-methoxyphenazine" *Journal of The Electrochemical Society* 160 (2013) H765-H769.

Year 2014

59. Imdad Ullah, Ahmad Naveed, Afzal Shah, Amin Badshah, **Zia-ur-Rehman**, Gul Shahzada Khan, Arif Nadeem "High Yield Synthesis, Detailed Spectroscopic Characterization and Electrochemical Fate of Novel Cationic Surfactants" J. Surfact. Deterg. 17 (2014) 243-251.
60. Shamsa Munir , Afzal Shah, Usman Ali Rana , Imran Shakir , Zia-ur-Rehman, Syed Mujtaba Shah "Probing of the pH-Dependent Redox Mechanism of a Biologically Active Compound, 5,8-Dihydroxynaphthalene-1,4-dione" Aust. J. Chem. 67 (2014) 206-212.
61. Shaukat Shujah, **Zia-ur-Rehman**, Niaz Muhammad, Afzal Shah, Saqib Ali, Auke Meetsm, Zahid Hussain "Homobimetallic organotin(IV) complexes with hexadentate Schiff base: Synthesis, crystal structure and antimicrobial studies" *J. Organomet. Chem.* 759 (2014) 19-26.
62. Niaz Muhammad, **Zia-ur-Rehman**[*], Saqib Ali, Afzal Shah, Auke Meetsma "Synthesis and structural characterization of monomeric and polymeric supramolecular organotin(IV) 4-chlorophenylethanoates" *J. Coord. Chem.* 67 (2014) 1110–1120.
63. Zafar Ali Khan Khattak, Azam Khan, **Zia-ur-Rehman**[*], Afzal Shah, Waqar Zaib, Mohammd Fettouhi, Atif Fazal "Self-assembled heteroleptic Zn(II) dithiocarbamate-based 2D-interwoven supramolecular giant macrocycles and their redox properties" Heteroatom Chem. 25 (2014) 238-244.
64. Muhammad Iqbal, Saqib Ali, **Zia-Ur-Rehman**, Niaz Muhammad, Manzar Sohail, Vedapriya Pandarinathan, Synthesis, crystal structure description, electrochemical and DNA binding studies of 'paddlewheel' copper(II) carboxylate, *J. Coord. Chem.* 67 (2014) 1731–1745.
65. Imdad Ullah, Khurshid Ahmad, Afzal Shah, Amin Badshah, Usman Ali Rana, Imran Shakir, **Zia-ur-Rehman**, Shahan Zeb Khan "Synthesis, Characterization and Effect of a Solvent Mixture on the CMC of a Thio-Based Novel Cationic Surfactant Using a UV–Visible Spectroscopic Technique" J. Surfact. Deterg. 17 (2014) 501-507.
66. Imdad Ullah, Afzal Shah, Amin Badshah, Usman Ali Rana, Imran Shakir, Asad Muhammad Khan, Shahan Zeb Khan, Zia-ur-Rehman "Synthesis, Characterization and Investigation of

Different Properties of Three Novel Thiourea-Based Non-ionic Surfactants" J. Surfact. Deterg. 17 (2014) 1013-1019.

67R. Muhammad Kashif Amir, Shahanzeb Khan, **Zia-ur-Rehman**[*], Afzal Shah, Ian S. Butler **"**Anticancer activity of organotin(IV) carboxylates" *Inorg. Chim. Acta* 423 (2014) 14-25.

68. Sher Ali, **Zia-ur-Rehman**[*], Munb-ur-Rehman, Imran Khan, Syed Niaz Ali Shah, Afzal Shah, Amin Badshah, Kamran Akbar, Francine Bélanger "New homobimetallic organotin(IV) dithiocarbamates as potent antileishmanial agents" *J. Coord. Chem.* 67 (2014) 3414–3430.

69. Faiza Anum, Asghar Abbas, Kong Mun Lo, **Zia-ur-Rehman**, Shahid Hameed, Muhammad Moazzam Naseer " Homologous 1,3,5-triarylpyrazolines: synthesis, CH…π interactions guided self-assembly and effect of alkyloxy chain length on DNA binding properties" New J. Chem. 38 (2014) 5617-5625.

70. Zulfiqar and Muneeb Ur Rahman, M. Usman and Syed Khurshid Hasanain, **Zia-ur-Rahman**[*], Amir Ullah, Ill Won Kim, "Static Magnetic Properties of Maghemite Nanoparticles" J. Korean Chem. Soc. 65 (2014) 1925-1929.

Year 2015

71. Nazia Parveen, Afzal Shah, Shahan Zeb Khan, Salah Ud-Din Khan, Usman Ali Rana, Farkhondeh Fathi, Aamir Hassan Shah, Muhammad Naeem Ashiq, Abdur Rauf,Rumana Qureshi, **Zia-ur-Rehman**, Heinz-Bernhard Kraatz, "Synthesis, Spectroscopic Characterization, pH Dependent Electrochemistry and Computational Studies of Piperazinic Compounds" *J. Electrochem. Soc.*, **162** (2015) H32-H39.

72. Abdur Rauf, Afzal Shah, Saghir Abbas, Usman Ali Rana, Salah Ud-Din Khan, Saqib Ali, **Zia-ur-Rehman**, Rumana Qureshi, , Heinz-Bernhard Kraatz, Francine Belanger-Gariepy "Synthesis, spectroscopic characterization and pH dependent photometric and electrochemical fate of Schiff bases" *Spectrochim. Acta A: Molecular and Biomolecular Spectroscopy* 138 (2015) 58–66.

73. Muneeb-ur-Rehman, Muhammad Imran, **Zia-ur-Rehman**[*], Afzal Shah, Muhammad Nawaz Tahir, Ghani Shah, "Humidity sensing and DNA binding ability of Bis(4-benzylpiperazine-1-carbodithioato)nickel(II)" J. Coord. Chem. 68 (2015) 295–307.

74. **Zia-ur-Rehman**[*], Muhammad Moazzam Naseer, Afzal Shah, Saqib Ali, Auke Meetsma, "Steric and electronic influence on the coordination aptitude of 4-formylpiperazine-1-carbodithioate towards triorganotin(IV) moieties" *Heteroatom* Chem. 26 (2015) 123-133.

75. Amir Ullah, Ata ur Rahman, Chang Won Ahn, Muneeb-ur-Rahman, Aman Ullah, **Zia-ur-Rehman**, Mohammad Javid Iqbal, Ill Won Kim, "Enhancement of dielectric and energy

density properties in the PVDF- based copolymer/terpolymer blends" Polymer Engineering & Science 55 (2015) 1396-1402.

76. Shahan Zeb Khan, Muhammad Kashif Amir, Muhammad Moazzam Naseer, Rashda Abbasi, Kehkashan Mazhar, Muhammad Nawaz Tahir, Iqra Zubair Awan, **Zia-ur-Rehman**, "Heteroleptic Pd(II) dithiocarbamates: Synthesis, characterization, packing and *in vitro* anticancer activity against Hela cell lines" *J. Coord. Chem.* 68 (2015) 2539–2551.
77. Muhammad Nawaz Tahir, Zahid Shafiq, Hazoor Ahmad Shad, **Zia-ur-Rehman**, Abdul Karim, Muhammad Moazzam Naseer "Polymorphism in a Sulfamethoxazole Derivative: Coexistence of Five Polymorphs in Methanol at Room Temperature" Cryst. Growth Des. 15 (2015) 4750−4755.
78. Imdad Ullah, Afzal Shah, Musharaf Khan, Shahan Zeb Khan, **Zia-ur-Rehman**, Amin Badshah, "Synthesis and Spectrophotometric Study of Toxic Metals Extraction by Novel Thio-Based Non-Ionic Surfactant" Tenside Surf. Det. 52 (2015) 406-413.

Year 2016

79. Syed Mustansar Abbas; **Zia-ur-Rehman**; Usman Ali Rana; Salah Ud-Din Khan; Zafar Iqbal; Nisar Ahmad, "MoN-decorated nitrogen doped carbon nanotubes anode with high lithium storage performance" Electrochim. Acta 190 (2016) 988–996.
80. Shahan Zeb Khan, Muhammad Kashif Amir, Imdad Ullah, Asma Aamir, John M. Pezzuto, Tamara Kondratyuk, Francine Bélanger-Gariepy, Akbar Ali, Sajid Khan, **Zia-ur-Rehman** "New heteroleptic palladium(II) dithiocarbamates: synthesis, characterization, packing and anticancer activity against five different cancer cell lines" App. Organomet. Chem. 30 (2016) 392-398.
81. **Zia-ur-Rehman**, Shaista Ibrahim, Azam Khan, Muhammad Imran, Muhammad Moazzam Naseer, Imran Khan, Afzal Shah, Muhammad Nawaz Tahir, Muneeb-ur-Rehman, Iqra Zubair Awan "Homobimetallic zinc(II) dithiocarbamates: Synthesis, characterization and *in vivo* antihyperglycemic activity" J. Coord. Chem. 69 (2016) 551–561.
82. Muhammad Kashif Amir, Shahan Zeb Khan, Faisal Hayat, Abbas Hassan, Ian S. Butler, **Zia-ur-Rehman*** "Anticancer activity, DNA-binding and DNA-denaturing aptitudeof palladium(II) dithiocarbamates", *Inorganica Chimica Acta* 451 (2016) 31–40.
83. Azam Khan, Zia-ur-Rehman, Muneeb-ur-Rehman, Rajwali Khan, Zulfiqar, Amir Waseem, Azhar Iqbal, Zawar Hussain Shah "CdS nanocapsules and nanospheres as

efficient solar light-driven photocatalysts for degradation of Congo red dye" Inorganic Chemistry communication 72 (2016) 33–41.

84. Shahan Zeb Khan, Muhammad Kashif Amir, Rashda Abbasi, Muhammad Nawaz Tahir, **Zia-ur-Rehman**, "New 3D and 2D supramolecular heteroleptic palladium(II) dithiocarbamates as potent anticancer agents" Journal of Coordination Chemistry 69 (2016) 2999–3009.
85. Rajwali Khan, Zulfiqar, Muneeb-Ur Rahman, **Zia-ur Rehman**, Simbarashe Fashu "Effect of air annealing on the structure, dielectric and magnetic properties of (Co, Ni) co-doped SnO_2 nanoparticles" Journal of Materials Science: Materials in Electronics 27 (2016) 10532–10540.
86. Afzal Shah; Nazia Parveen; Zia-ur Rehman; Shahan Zeb Khan; Usman Ali Rana; Salah Ud-Din Khan; Jan Nisar; Aref Lashin; Rumana Qureshi, Aamir Hassan Shah, "Synthesis and electrochemical investigations of piperazines" Electrochimica Acta 220 (2016) 705–711.
87. Muhammad Kashif Amir, **Zia-ur-Rehman**, Faisal Hayat, Shahan Zeb Khan, Graeme Hogarth, Tamara Kondratyuk, John M. Pezzuto, Muhammad Nawaz Tahir, "Monofunctional Platinum(II) dithiocarbamate complexes: Synthesis, characterization and anticancer activity" RSC advances 6 (2016) 110517–110524.
88. Rukhsana Gul, Ataf Ali Altaf, Azim Khan, Amin Badshah, Afzal Shah, **Zia-ur-Rehman**, Rabia Naz, Muhammad Nawaz Tahir, Asif Junaid "Biologically Active New N, N', N''-Tri-Substituted Ferrocenyl Phenylguanidines and their Characterization" Medicinal Chemistry 12 (2016) 1-15.

2017

89. Rajwali Khan, Simbarashe Fashu, Zia Ur Rehman, "Structural, dielectric and magnetic properties of (Al, Ni) co-doped ZnO Nanoparticles", Journal of Materials Science: Materials in Electronics 28 (2017) 4333-4339.
90. Faisal Hayat, **Zia-ur-Rehman**, Muhammad Haleem Khan "Two new heteroleptic Ruthenium(II) dithiocarbamates: Synthesis, characterization, DFT calculation and DNA binding" Journal of Coordination Chemistry 70 (2017) 279–295.
91. Azam Khan, **Zia-ur-Rehman**, Abdullah Khan, Hina Ambareen , Haseeb Ullah , Syed Mustansar Abbas, Yaqoob Khan , Rajwali Khan "Solar-light driven photocatalytic conversion of *p*-nitrophenol to *p*-aminophenol on CdS nanosheets and nanorods" Inorg. Chem. Comm. 79 (2017) 99–103.

92. Rajwali Khan, Zulfiqar, Muneeb Ur Rahman, Simbarashe Fashu, **Zia-ur-Rahman**, "Effect of annealing on Ni-doped ZnO nanoparticles synthesized by the co-precipitation method" Journal of Materials Science: Materials in Electronics 28 (2017) 10122–10130.
93. Abdur Rauf, Afzal Shah, Khurram Shahzad Munawar, Abdul Aziz Khan , Rashda Abbasi, Muhammad Arfat Yameen, Asad Muhammad Khan, Abdur Rahman Khan, Irfan Zia Qureshi, Heinz-Bernhard Kraatz, **Zia-ur-Rehman**, "Synthesis, spectroscopic characterization, DFT optimization and biological activities of Schiff bases and their metal (II) complexes" Journal of Molecular Structure 1145 (2017) 132-140.
94. Azam Khan, Haseeb Ullah, Jamal Abdul Nasir, Suzanne Shuda, Wei Chen, Abdullah Khan, **Zia-ur-Rehman**, "Metal- and Carbon-Based Materials as Heterogeneous Electrocatalysts for CO_2 Reduction" Reviews in Nanoscience and Nanotechnology 6 (2017) 1-20.
95. Hamid Nawaz, Amir Waseem, **Zia-ur-Rehman**, Muhammad Nafees, Muhammad Nadeem Arshad, Umer Rashid, "Synthesis, characterization, cytotoxicity and computational studies of new phosphine- and carbodithioate-based palladium(II) complexes" App. Organomet. Chem. (online).
96. Shahan Zeb Khan, **Zia-ur-Rehman***, Muhammad Kashif Amir, Imdad Ullah, M. S. Akhtar[c], Francine Bélanger-Gariepy "Heteroleptic Palladium(II) dithiocarbamates: Synthesis, characterization and *in vitro* biological screening" Journal of Molecular Structure (Online).
97. Rajwali Khan, Zulfiqar, Simbarashe Fashu, **Zia Ur Rehman**, Aurangzeb Aurangzeb Khan, Muneeb Ur Rahman, Structure and magnetic properties of (Co, Mn) co-doped ZnO diluted magnetic semiconductor nanoparticles, Journal of Materials Science: Materials in Electronics (online). DOI: https://doi.org/10.1007/s1085
98. Farzana Shaheen, Muhammad Sirajuddin, Saqib Ali, Zia-ur-Rehman, Paul J Dysond, Muhammad N Tahir, "Synthesis, Structural Elucidation, DNA Binding, Antimicrobial and Anticancer Activity of Organotin(IV) Derivatives of 4-(benzo[d][1,3]dioxol-5-ylmethyl)piperazine-1-carbodithioate)" Journal of Organometallic Chemistry (revised).

99. Jamal Abdul Nasir, Muhammad Hafeez, Muhammad Arshad, Ivo F. Teixieira, Ian McPherson, Naveed Zafar, **Zia-ur-Rehman**, M. Abdullah Khan, "Photocatalytic H_2 production from formic acid on CdS nanorods through Ni and Co redox mediation under mild conditions" ACS Catalysis (submitted).
100. Jamal Abdul Nasir, Hina Ambareen, Haseeb Ullah, Zulfiqar, **Zia-ur-Rehman** "Single source precursor derived CdS nanorods as an efficient photocatalyst for the reduction of 4-nitrophenol to 4-aminophenol, Journal of Materials Science in Semiconductor Processing " (submitted).
101. **Zia-ur-Rehman**, Faisal Hayat, Syed Niaz Ali Shah, Muhammad Haleem Khan, Muhammad Moazzam Naseer, Francine Bélanger-Gariepy "Turning-on of Sb···S associations with bulky ligands, and occurrence criteria for rare Sb···Sb interaction in binary antimony(III) dithiocarbamates" Cryst. Growth Des. (submitted).
102. Muhammad Imran, Nazish Dalil, Ian S. Butler, **Zia-ur-Rehman** "Photoactivated Platinum-based Anticancer Drugs" Journal of Photochemistry and Photobiology C: Photochemistry Reviews (get permission from the editor-in chief).
103. **Zia-ur-Rehman**, Muhammad Kashif Amir,a Shahan Zeb Khana,b, Tamara Kondratyukc, Francine Bélanger-Gariepyd and Safdar Abbas, "New highly potent anticancer heteroleptic platinum(II) dithiocarbamates: Synthesis, characterization, anticancer activity and DNA binding mechanism" Dalton Transactions (submitted).
104. Shahan Zeb Khan, **Zia-ur-Rehman**, Faisal Hayat, Muhammad Kashif Amir, Tamara Kondratyuk, Francine Bélanger-Gariepy, "Correlation between hydrogen bond formation aptitude and anticancer activity of new heteroleptic palladium(II) dithiocarbamates" Inorganic Chimica acta (submitted).
105. Noor ul Ain, **Zia-ur-Rehman**, Yaqoob Khan, Muneeb-ur-Rehman, Dan-Jae Lin, Wei Chen, "Catalytic and photocatalytic efficacy of copper(II) dithiocarbamate derived hexagonal CuS nanoplates for Congo Red degradation" Materials Chemistry and Physics (submitted).
106. Muneeb Ur Rahman, Falak Niaz, Amir Ullah, Zulfiqar, Rajwali Khan, **Zia-ur-Rahman**, Tariq Saeed, Fazal Ahmed Khalid, "Humidity and Temperature Sensors Based on Organic Semiconducting Material" Journal Physica Status Solidi B: Basic Solid State Physics (submitted).

107. Muneeb ur Rahman, Rajwali Khan; Syed Zulfiqar; Simbarashe Fashu, **Zia-ur-Rehman**, "Observation of Co-Doped Diluted Magnetic Semiconductor, High Dielectric and Electric Behavior in (Al, Ni) Co-Doped ZnO Nanostructures" Journal of Materials Science: Materials in Electronics (submitted).

108. Faisal Hayat, **Zia-ur-Rehman**, Francine Bélanger-Gariepy, Investigation of unusual Copper(II) geometrical preferences towards dithiocarbamates: Single crystal XRD and computational approach" Crystal Engineering Communication (submitted).

109. **Zia-ur-Rehman**, Faisal Hayat, Syed Niaz Ali Shah, Muhammad Haleem Khan, Muhammad Moazzam Naseer, Francine Bélanger-Gariepy, Turning-on of Sb···S associations with bulky ligands, and occurrence criteria for rare Sb···Sb interaction in binary antimony(III) dithiocarbamates Crystal Engineering Communication (submitted).

110. Abrar Ahmad[a], Francine Bélanger-Gariepy[b], Edward R.T. Tiekink[c], Zia-ur-Rehman "A copper diimine-based honeycomb-like porous network as an efficient reduction catalyst" Crystal Growth & Design (Submitted).