

DR. MUHAMMAD ALTAF

ASSOCIATE PROFESSOR

CORRESPONDENCE

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RESEARCH INTERESTS

INORGANIC CHEMISTRY, BIOINORGANIC CHEMISTRY, MATERIALS CHEMISTRY, X-RAY CRYSTALLOGRAPHY

EDUCATION

PH.D. (INORGANIC CHEMISTRY), UNIVERSITY OF NEUCHÂTEL, SWITZERLAND
Advisor: Prof. Dr. Helen Stoeckli-Evans

M.PHIL. (INORGANIC/ANALYTICAL CHEMISTRY), QUAID-E-AZAM UNIVERSITY, PAKISTAN
Advisor: Prof. Dr. Saqib Ali

PROFESSIONAL EXPERIENCE

ASSOCIATE PROFESSOR, DEPARTMENT OF CHEMISTRY, GC UNIVERSITY, LAHORE (GCU)
PAKISTAN
2018-till date
Teaching and leading research group.

RESEARCH SCIENTIST III/ASSISTANT PROFESSOR, CENTRE OF EXCELLENCE IN NANOTECHNOLOGY, KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS (KFUPM), KSA
2015-2018
Leading research and development activities in synthesis of metal organic frameworks (MOFs).

POSTDOC FELLOW, KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS (KFUPM), KSA
2012-2014
Synthesis and characterization of anti-cancer drug molecules.

POSTDOC FELLOW, UNIVERSITY OF FRIBOURG, SWITZERLAND

2009-2010

Synthesis and characterization of metal-organic hybrid materials.

POSTDOC FELLOW, UNIVERSITY OF NEUCHÂTEL, SWITZERLAND

2008-2009

Synthesis and characterization of silver based anti-bacterial drug molecules.

TEACHING EXPERIENCE

GOVERNMENT COLLEGE UNIVERSITY LAHORE (GCU), PAKISTAN

2018-till date

Teaching graduate and postgraduate courses involving BS, M.Phil, and Ph.D students. Successfully supervised 25 M. Phil/MS, 20 BS/M.Sc and one Ph.D research students.

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS (KFUPM), KSA

2012-2018

Teaching of General Chemistry Course (**CHEM 101**) & Freshman Chemistry Lab (**CHEM 325**). The class size for these courses is 80 and 15 respectively.

UNIVERSITY OF FRIBOURG, SWITZERLAND

2009-2010

Postdoctoral Fellow at University of Fribourg in Dr. Peter Belser's (post-doc supervisor) class Fall Semester (**September 15, 2009**) and Winter Semester (**February 18, 2010**), Single crystal X-ray crystallography for structure determination.

Mentored 2 graduate and 2 undergraduate students in Dr. Peter Belser's (post-doc supervisor) lab to achieve their research goals - (From project selection to final report), co-authored 8 peer reviewed publications with them.

University of Neuchâtel, Switzerland

2005-2009

General chemistry and Inorganic chemistry lab courses for undergraduate students (class size varies from 8-17 students with one lab class per week), **1 course each semester**.

Chemical crystallography and Nano-porous material lab and associated instruments including **FTIR, NMR, GC-MS, UV-Vis, and X-ray diffractometer devices** (Group of 5 students each semester – 1 week assignment)

Mentored 5 Ph.D students to complete their first projects in the lab, worked to improve their presentation and paper writing skills. Co-authored 15 peer reviewed publications with them. Most of them are now serving as assistant professor of chemistry in different universities of Pakistan. Dr. Farooq is serving as Assistant Prof. in HEJ, University of Karachi.

SKILLS & HANDS ON EXPERIENCE

- Experience in multi-step synthesis of inorganic and organic materials
- Work experience of handling air and moisture sensitive compounds using inert gases like Nitrogen and Argon and vacuum glass line techniques
- Single Crystal X-ray and XRD powder diffraction analysis
- X-ray data measurement on R-axis IIC (Rigaku), a CCD (Siemens), and solution/refinement with SHELX or NRCVAX Software
- Computer based analytical methods in organic synthesis and interpretation of data: NMR, Spectroscopy, GC-MS, HPLC, MS, IR, and UV-Vis
- Application software: Proficient with PC, Mac, Word, Excel, PowerPoint, Scifinder,
- Languages: Fully proficient and written and oral English; Basic knowledge of Arabic and French

AWARDS AND HONORS

- Best poster presentation award 2010, Swiss Union of Chemical Crystallography
- Best Paper presentation award 2008, Swiss Chemical Society

US PATENTS

1. WATER STABLE ZINC-BASED METAL ORGANIC FRAMEWORK AND METHOD OF USE, M. Sohail, **Muhammad Altaf**; US Patent (Application Number) 16394389 (**2020**).
2. PHARMACEUTICAL COMPOSITION CONTAINING A CISPLATIN AND PLATINUM THIOCYANATE COMBINATION, A.A. Isab, **Muhammad Altaf**, M.A. Ehsan, K. Omer; US Patent 10562928 (**2020**).
3. METHOD FOR ADMINISTERING CISPLATIN AND A THIOCYANATE COMPLEX TO TREAT OVARIAN CANCER, A.A. Isab, **Muhammad Altaf**, M.A. Ehsan, K. Omer; US Patent 10538544 (**2020**).
4. ANTICANCER TRANS-DIAMINOPLATINUM (II) COMPLEXES OF SELENONES, A.A. Isab, A.A.A. Sulaiman, A. Alhoshani, **Muhammad Altaf**; US Patent 10533029 (**2020**).
5. METHOD FOR TREATING CANCER USING A SELENOUREA-COORDINATED GOLD(I)-CARBENE COMPLEX, A.A.A. Sulaiman, **Muhammad Altaf**, A.A. Isab; US Patent 10507213 (**2019**).
6. SYNTHESIS, X-RAY STRUCTURES AND CYTOTOXIC BEHAVIOR OF PLATINUM (II) COMPLEXES OF DITHIOCARBAMATES, A.A. Isab, **Muhammad Altaf**, M.A. Ehsan, K. Omer; US Patent 10494394 (**2019**).
7. METHOD OF TREATING CANCER WITH A TWO-COMPONENT ANTI-CANCER COMPOSITION, A.A. Isab, **Muhammad Altaf**, A.A.A. Seliman; US Patent 10494392 (**2019**).
8. TWO-COMPONENT ANTI-CANCER COMPOSITION, A.A. Isab, **Muhammad Altaf**, A.A.A. Seliman; US Patent 10494391 (**2019**).
9. GOLD(III) COMPLEXES AS ANTICANCER AGENTS AND A METHOD OF TREATING CANCER, A.A. Isab, **Muhammad Altaf**; US Patent 10385072 (**2019**).
10. PLATINUM (II) COMPLEXES WITH SELONE LIGANDS AND METHOD OF USE, A.A. Isab, **Muhammad Altaf**, A. Alhoshani, A.O. Altoum, M.Y. Jomaa; US Patent 10358456 (**2019**).
11. GOLD (I) COMPLEXES, PHARMACEUTICAL COMPOSITIONS THEREOF, AND METHODS OF TREATING CANCER, A.A. Isab, **Muhammad Altaf**, A.A.A. Seliman; US Patent 10336779 (**2019**).

12. GOLD COMPLEX-CONTAINING CANCER ACTIVITY COMPOSITION, S.S. Al-Jaroudi, A. Alhoshani, **Muhammad Altaf**, A.A. Isab; US Patent 10301315 **(2019)**.
13. DNA/DITHIOCARBAMATO PHOSPHINE METAL COMPLEX, S.S. Al-Jaroudi, A. Alhoshani, **Muhammad Altaf**, A.A. Isab; US Patent 10294254 **(2019)**.
14. MONONUCLEOTIDE-DITHIOCARBAMATE COMPLEX, S.S. Al-Jaroudi, A. Alhoshani, **Muhammad Altaf**, A.A. Isab; US Patent 10280187 **(2019)**.
15. CANCER CELL-CONTAINING COMPOSITION, S.S. Al-Jaroudi, A. Alhoshani, **Muhammad Altaf**, A.A. Isab; US Patent 10273257 **(2019)**.
16. GOLD(I) COMPLEXES, PHARMACEUTICAL COMPOSITIONS THEREOF, AND METHODS OF TREATING PROLIFERATIVE DISORDERS, A.A.A. Sulaiman, **Muhammad Altaf**, A.A. Isab; US Patent 10189865 **(2019)**.
17. METHOD FOR INHIBITING CANCER CELL GROWTH WITH A TRANSPLATIN COMPLEX, M.Y. Jomaa, **Muhammad Altaf**, A.A. Isab; US Patent 10172823 **(2019)**.
18. GOLD COMPLEXES OF ALKYLATED PHOSPHINES, S.S. Al-Jaroudi, A. Alhoshani, **Muhammad Altaf**, A.A. Isab; US Patent 10144749 **(2018)**.
19. COMPOSITION CONTAINING A GOLD(I) COMPLEX AND CANCER CELLS, S.S. Al-Jaroudi, A. ALHOSHANI, **Muhammad Altaf**, A.A. Isab; US Patent 10093689 **(2018)**.
20. GOLD(I) COMPLEXES WITH ANTICANCER PROPERTIES AND METHODS OF USE THEREOF, **Muhammad Altaf**, M. Monim-ul-Mehboob, A.A. Isab, S. Altuwajiri; US Patent 10092579 **(2018)**.
21. MIXED LIGAND GOLD(I) COMPLEXES AS ANTI-CANCER AGENTS, S.S. Al-Jaroudi, A. ALHOSHANI, **Muhammad Altaf**, A.A. Isab; US Patent 10077280 **(2018)**.
22. ANTICANCER ACTIVITY OF GOLD(III) COMPLEXES OF MESO-1, 2-DI (1-NAPHTHYL)-1, 2-DIAMINOETHANE, A.A. Isab, **Muhammad Altaf**; US Patent 9994592 **(2018)**.
23. TRANSPLATIN DERIVATIVES AS ANTICANCER AGENTS, M.Y. Jomaa, **Muhammad Altaf**, A.A. Isab; US Patent 9974765 **(2018)**.
24. GLUTATHIONE/GOLD (III) PHARMACEUTICAL COMPOSITION, A.A. Isab, **Muhammad Altaf**; US Patent 9880170 **(2018)**.
25. THIONE-PLATINUM (II) COMPLEXES AND PHARMACEUTICAL COMPOSITIONS THEREOF, **Muhammad Altaf**, A.A. Isab; US Patent 9840528 **(2017)**.
26. GOLD (III) ANTI-CANCER AGENTS, A.A. Isab, **Muhammad Altaf**; US Patent 9796734 **(2017)**.
27. METHOD FOR TREATING OVARIAN CANCER AND/OR HODGKIN LYMPHOMIA WITH A GOLD (III) COMPLEX, A.A. Isab, **Muhammad Altaf**; US Patent 9782380 **(2017)**.
28. A METHOD OF TREATING CANCER AND GOLD(III) COMPLEXES AS ANTICANCER AGENTS, A.A. Isab, **Muhammad Altaf**; US Patent 9657035 **(2017)**.
29. METHOD FOR TREATING PROSTATE CANCER AND/OR GASTROINTESTINAL CANCER, S. Al-Jaroudi, Muhammad Altaf, A. Al-Saadi, A.A. Isab; US Patent 9649292 **(2017)**.
30. METHOD FOR TREATING A CANCER WITH A MIXED LIGAND GOLD(III) COMPLEXES AS ANTI-CANCER AGENTS, S. Al-Jaroudi, Muhammad Altaf, A. Al-Saadi, A.A. Isab; US Patent 9585861 **(2017)**.
31. N-HETEROCYCLIC CARBENE GOLD COMPLEXES WITH ANTICANCER PROPERTIES AND METHODS OF USE THEREOF, **Muhammad Altaf**, A.A. Isab; US Patent 9573967 **(2017)**.
32. TREATMENT OF CERVICAL CANCER WITH GOLD(I) COMPLEXES, A.A. Isab, **Muhammad Altaf**, M. Monim-ul-mehboob, A.A.A. Seliman, M.I. Wazeer; US Patent 9572822 **(2017)**.
33. BIS-(TRIETHYLPHOSPHINE) PLATINUM(II) COMPLEXES WITH THIONES AS ANTI-CANCER AGENTS, A.A. Isab, **Muhammad Altaf**; US Patent 9561237 **(2017)**.
34. GOLD (I) COMPLEXES WITH T-BUTYL PHOSPHINE AND DIALKYL DITHIOCARBAMATE LIGANDS, A.A. Isab, **Muhammad Altaf**, M. Monim-ul-Mehboob, A.A.A. Seliman, M.I. Wazeer; US Patent 9492465 **(2016)**.

35. MIXED LIGAND GOLD (III) COMPLEXES AND METHODS THEREOF, S. Al-Jaroudi, **Muhammad Altaf**, A. Al-Saadi, A.A. Isab; US Patent 9487542 (2016).
36. PLATINUM(II) COMPLEXES WITH THIONE LIGANDS AND METHODS THEREOF, **Muhammad Altaf**, A.A. Isab; US Patent 9481699 (2016).
37. MIXED LIGAND GOLD(III) COMPLEXES AS ANTI-CANCER AGENTS, S. Al-Jaroudi, **Muhammad Altaf**, A. Al-Saadi, A.A. Isab; US Patent 9481693 (2016).

BOOKS

1. Photoelectrochemical Bioanalysis: Fundamentals and Emerging Applications

1st Edition 23 August 2023

Editors: Muhammad Altaf, Raja Shahid Ashraf, Manzar Sohail

RESEARCH PUBLICATIONS

89. Synthesis, characterization, and in vitro antimicrobial studies of heteroleptic silver(I) polymers, Asima Munawar, Helen Stoeckli-Evans, Anvarhusein A Isab, Imran Rashid, Raja Shahid Ashraf, **Muhammad Altaf**; *Polyhedron*, (2023) 240, 116448.
88. Synthesis, characterization and in vitro cytotoxicity of Au (I) carbene complexes, Sughra Gulzar, Zeeshan Abid, Raja Shahid Ashraf, Muhammad Sher, Anvarhusein A. Isab, **Muhammad Altaf**; *Inorg. Chem. Commun.*, (2023) 148, 110323.
87. Design, Synthesis, and Preclinical Activity in Ovarian Cancer Models of New Phosphanegold(I)-N-heterocyclic Carbene Complexes, Adam A. A. Sulaiman, Naike Casagrande, Cinzia Borghese, Giuseppe Corona, Anvarhusein A. Isab, Saeed Ahmad, Donatella Aldinucci, **Muhammad Altaf**; *J. Med. Chem.* (2022) 65, 14424–14440.
86. Synthesis, in vitro anticancer activity and reactions with biomolecule of gold (I)-NHC carbene complexes, Sughra Gulzar, Umme Ammara, Zeeshan Abid, Munazza Shahid, Raja Shahid Ashraf, Nadeem Baig, Abdel-Nasser Kawde, Gaurav Bhatia, Anvarhusein A Isab, **Muhammad Altaf**; *Journal of Molecular Structure*, (2022) 1255, 132482.
85. Heavy metals contamination in water, sediments and fish of freshwater ecosystems in Pakistan, Muhammad Afzaal, Saman Hameed, Iram Liaqat, Amir Amanat Ali Khan, Hafiz Abdul Manan, Raja Shahid, **Muhammad Altaf**; *Water Practice & Technology*, (2022) 17, 1253-1272.
84. Histological Changes in Renal, Hepatic and Cardiac Tissues of Wistar Rats after 6 Weeks Treatment with Bipyridine Gold (III) Complex with Dithiocarbamate Ligands, Ahmed Badar, Ayesha Ahmed, Dalal M Al-Tamimi, Anvarhusein A Isab, **Muhammad Altaf**, Sania Ahmed; *Pharmaceutics*. (2021) 13, 1530.
83. Covalent organic frameworks: Advances in synthesis and applications, Amna Altaf, Nadeem Baig, Manzar Sohail, Muhammad Sher, Anwar Ul-Hamid, and **Muhammad Altaf**; *Materials Today Communications*. (2021) 102612.

82. MOF derived novel zero-valent iron@ graphitic carbon-based nanoreactors for selective reduction of hazardous 4-nitrophenol, Asif, Iqra, Nadeem Baig, Muhammad Sher, Anwar Ul-Hamid, **Muhammad Altaf**, Asad Mumtaz, and Manzar Sohail. *Cleaner Engineering and Technology*. (2021) 2, 100081.

81. NiRu_{0.3}Se Nanoparticles In Situ Grown on Reduced Graphene: Synthesis and Electrocatalytic Activity in the Oxygen Evolution Reaction, Adeel Mehmood, Zia Ur-Rehman, **Muhammad Altaf**, Raja Shahid Ashraf, Manzar Sohail, Anvarhusein A Isab; *ChemistrySelect*. (2021) 6, 502-510.

80. HfO₂-CoO nanoparticles for electrochemical dopamine sensing, Abdul Samad Butt, Nadeem Baig, Munezza Khan, Anwar Ul-Hamid, Muhammad Sher, **Muhammad Altaf**, and Manzar Sohail. *Electrochemical Science Advances*. (2021) e2100013.

79. Ruthenium Nanoparticles Intercalated in Montmorillonite (nano-Ru@ MMT) is Highly Efficient Catalyst for the Selective Hydrogenation of 2-Furaldehyde in Benign Aqueous Medium, Farooq-Ahmad Khan, Sana Yaqoob, Nourina Nasim, Yan Wang, Muhammad Usman, Anvarhusein A Isab, **Muhammad Altaf**, Bing Sun, Islam H El Azab, Hesham R El-Seedi; *Catalysts*. (2021) 11, 66.

78. *Withania somnifera* L.: Insights into the phytochemical profile, therapeutic potential, clinical trials, and future prospective, Sumaira Saleem, Gulzar Muhammad, Muhammad Ajaz Hussain, **Muhammad Altaf**, Syed Nasir Abbas Bukhari; *Iranian Journal of Basic Medical Sciences*. (2020) 23, 1501-1526.

77. Anticancer activity and X-ray structure determination of gold (I) complexes of 2-(diphenylphosphanyl)-1-aminocyclohexane, Adam A Sulaiman, Ali Alhoshani, Homood M As Sobeai, Meshal Alghanem, Ahmed K Abogosh, Saeed Ahmad, **Muhammad Altaf**, Muhammad Monim-ul-Mehboob, Helen Stoeckli-Evans, Anvarhusein A Isab; *Polyhedron*. (2020) 183, 114532.

76. A Novel Tin-Doped Titanium Oxide Nanocomposite for Efficient Photo-Anodic Water Splitting, Manzar Sohail, Nadeem Baig, Muhammad Sher, Rabia Jamil, **Muhammad Altaf**, Sultan Akhtar, Muhammad Sharif; *ACS Omega*. (2020) 5, 6405-6413.

75. Highly cytotoxic gold(I)-phosphane dithiocarbamate complexes trigger an ER stress-dependent immune response in ovarian cancer cells, Hai Van Le, Maria V Babak, Muhammad Ali Ehsan, **Muhammad Altaf**, Lisa Reichert, Artem L Gushchin, Wee Han Ang, Anvarhusein A Isab; *Dalton Transactions*. (2020) 49, 7355-7363.

74. Cytotoxic effects of gold(I) complexes against colon, cervical and osteo carcinoma cell lines: a mechanistic approach, Adam AA Sulaiman, Namarta Kalia, Gaurav Bhatia, Manpreet Kaur, Mohammed Fettouhi, **Muhammad Altaf**, Nadeem Baig, Abdel-Nasser Kawde, Anvarhusein A Isab; *New Journal of Chemistry*. (2019) 43, 14565-14574.

73. Synthesis and utilization of Platinum(II) dialkyldithiocarbamate precursors in aerosol assisted chemical vapor deposition of platinum thin films as counter electrodes for dye-sensitized solar cells, Muhammad Ali Ehsan, Muhammad Younas, Abdul Rehman,

Muhammad Altaf, Mohd Yusuf Khan, Amir Al-Ahmed, Saeed Ahmad, Anvarhusein A Isab; *Polyhedron*. (2019) 166, 186-195.

72. Potent In Vitro and In Vivo Anticancer Activity of New Bipyridine and Bipyrimidine Gold (III) Dithiocarbamate Derivatives, **Muhammad Altaf**, Naike Casagrande, Elena Mariotto, Nadeem Baig, Abdel-Nasser Kawde, Giuseppe Corona, Roberto Larcher, Cinzia Borghese, Claudia Pavan, Adam A Seliman, Donatella Aldinucci, Anvarhusein A Isab; *Cancers*. (2019) 11, 474.

71. Synthesis, X-ray structure and in vitro cytotoxicity of trans-diammineplatinum (II) complexes of some selenones, trans-[Pt(NH₃)₂(Selenone)₂](NO₃)₂, Ali Alhoshani, Adam AA Seliman, Ali Osman Altoum, Hatem A Abuelizz, Saeed Ahmad, **Muhammad Altaf**, Khalid H Omer, Manzar Sohail, Anvarhusein A Isab; *Polyhedron*. (2019) 158, 234-240.

70. Gold-Containing Compound BDG-I Inhibits the Growth of A549 Lung Cancer Cells through the Deregulation of miRNA Expression, Ali Alhoshani, A Alrashdi, Khaled Alhosaini, Fawaz E Alanazi, Nehad M Alajez, **Muhammad Altaf**, Anvarhusein A Isab, Hesham M Korashy; *Saudi Pharmaceutical Journal*. (2018) 26, 1035-1043.

69. A New Water Stable Zinc Metal Organic Framework as an Electrode Material for Hydrazine Sensing, Manzar Sohail, **Muhammad Altaf**, Nadeem Baig, Rabia Jamil, Muhammad Sher, Atif Fazal; *New Journal of Chemistry*. (2018) 42, 12486-12491.

68. Synthesis, X-ray structure and cytotoxicity evaluation of carbene-based gold (I) complexes of selenones, Adam AA Seliman, **Muhammad Altaf**, Abdulmujeeb T Onawole, Abdulaziz Al-Saadi, Saeed Ahmad, Ali Alhoshani, Gaurav Bhatia, Anvarhusein A Isab; *Inorganica Chimica Acta*. (2018) 476, 46-53.

67. Synthesis, Characterization, and DFT Investigation of a Zinc (II)–Silver (I) Bimetallic Complex, [Zn (Dmen) 2 {Ag (CN) 2} 2][Zn (Dmen) 2 (H 2 O) 2]{Ag (CN) 2} 2 (Dmen= N, N'-Dimethylethylenediamine), M Monim-ul-Mehboob, M Ramzan, W Zierkiewicz, M Michalczyk, R Mahmood, **Muhammad Altaf**, S Nadeem, M Akhtar, S Ahmad; *Russian Journal of Coordination Chemistry*. (2018) 44, 198-206.

66. Spectroscopic and Electrochemical Studies of the Interaction of Some Gold (III) Complexes with Biologically Relevant Thiones, Adam A A. Sulaiman, Khalid H Omer, Abdel-Nasser Kawde, MI M. Wazeer, **Muhammad Altaf**, Musa M Musa, Saeed Ahmad, Anvarhusein A Isab; *International Journal of Chemical Kinetics*. (2018) 50, 178-187.

65. Synthesis, characterization and anticancer evaluation of transplatin derivatives with heterocyclic thiones, Mohammed Y Jomaa, **Muhammad Altaf**, Saeed Ahmad, Ali Alhoshani, Nadeem Baig, Abdel-Nasser Kawde, Gaurav Bhatia, Jatinder Singh, Anvarhusein A Isab; *Polyhedron*. (2018) 141, 360–368.

64. Synthesis, Characterization and Photoelectrochemical-Catalytic Studies of a Water Stable Zinc-based Metal-organic Framework, **Muhammad Altaf**, Manzar Sohail, Muhammad Mansha, Naseer Iqbal, Muhammad Sher, Atif Fazal, Nisar Ullah, Anverhusein A Isab; *ChemSusChem*. (2018) 11, 542–546.

63. Synthesis, crystal structure and anticancer activity of tetrakis (N-isopropylimidazolidine-2-selenone) platinum (II) chloride, S. Ahmad, A.O.S. Altoum, J. Vančo, R. Křikavová, Z. Trávníček, Z. Dvořák, **Muhammad Altaf**, M. Sohail, A.A. Isab; *J Mol Struct.* **(2018)** 1152, 232–236.
62. Synthesis, X-ray structure, DFT calculations and anticancer activity of a selenourea coordinated gold (I)-carbene complex, A.A.A. Seliman, **Muhammad Altaf**, N.A. Odewunmi, A-N. Kawde, W. Zierkiewicz, S. Ahmad, S. Altuwaijri, A.A. Isab; *Polyhedron.* **(2017)** 137, 197–206.
61. Synthesis, X-ray structures and anticancer activity of gold(I)-carbene complexes with selenones as co-ligands and their molecular docking studies with thioredoxin reductase, A.A.A. Sulaiman, **Muhammad Altaf**, A.T. Onawole, S. Ahmad, M.Y. Ahmed, A.A. Al-Saadi, S. Altuwaijri, G. Bhatia, J. Singh, A.A. Isab; *J. Organomet. Chem.* **(2017)** 848, 175–183.
60. In vitro cytotoxicity and DNA interaction study of phosphane-gold(I) complexes with dithiocarbamate ligands, Said S Al-Jaroudi, Muhammad Altaf, A.A. Seliman, S. Yadav, F. Arjmand, A. Alhoshani, H.M. Korashy, S. Ahmad, A.A. Isab; *Inorg. Chim. Acta.* **(2017)** 464, 37–48.
59. Study of the Interaction of Some Potential Anticancer Gold(III) Complexes with Biologically Important Thiols Using NMR, UV–Vis, and Electrochemistry, K.H. Omer, A.A.A. Seliman, H.A. Al-Mohsin, A-N. Kawde, **Muhammad Altaf**, M.I.M. Wazeer, S. Ahmad, M.M. Musa, A.A. Isab; *Int. J. Chem. Kinet.* **(2017)** 49, 387–397.
58. Synthesis, structures and Photoluminescence properties of mixed ligand divalent metal-organic frameworks, **Muhammad Altaf**, M. Mansha, M. Sohail, A.A. Isab, N. Ullah, S.A. Khan, M. Sher, H. Stoeckli-Evans; *New. J. Chem.* **(2017)** 41, 2980—2986.
57. Synthesis, structural characterization and cytotoxicity evaluation of platinum(II) complexes of heterocyclic selenones, A.O.S. Altoum, J. Vančo, R. Křikavová, Z. Trávníček, Z. Dvořák, **Muhammad Altaf**, S. Ahmad, A.A.A. Sulaiman, A.A. Isab; *Polyhedron.* **(2017)** 128, 2–8.
56. New bipyridine gold(III) dithiocarbamate-containing complexes exerted a potent anticancer activity against cisplatin-resistant cancer cells independent of p53 status, **Muhammad Altaf**, M. Monim-Ul-Mehboob, A.N. Kawde, G. Corona, R. Larcher, M. Ogasawara, N. Casagrande, M. Celegato, C. Borghese, Z.H. Siddik, D. Aldinucci, A.A. Isab; *Oncotarget.* **(2017)** 8, 490-505.
55. Zinc halide complexes of thionicotinamide; crystal structure of dichlorido bis(thionicotinamide-κN)zinc(II), M. Akhtar, M. R. Malik, M. N. Tahir, S. Nadeem, **Muhammad Altaf**, M. Sohail, S. Ali, S. Ahmad; *J. Struct. Chem.* **(2017)** 58, 178-182.
54. Synthesis, characterization and in vitro cytotoxicity of platinum(II) complexes of selenones [Pt(selenone)₂Cl₂], A.O.S. Altoum, A. Alhoshani, K. Alhosaini, **Muhammad Altaf**, S. Ahmad, S.A. Popoola, A.A. Al-Saadi, A.A. Sulaiman, A.A. Isab; *J. Coord. Chem.* **(2017)** 70, 1020-1031.

53. Synthesis, Characterization, and in vitro Cytotoxicity of Gold(I) Complexes of 2-(Diphenylphosphanyl)ethylamine and Dithiocarbamates, A.A.A. Sulaiman, **Muhammad Altaf**, A.A. Isab, A. Alawad, S. Altuwajri, S. Ahmad; *Z. Anorg. Allg. Chem.* (2016) 642, 1454–1459.
52. Synthesis, Structural Characterization, Electrochemical Behavior and Anticancer Activity of Gold(III) Complexes of meso-1,2-di(1-naphthyl)-1,2-diaminoethane and tetraphenylporphyrin, **Muhammad Altaf**, S. Ahmad, A.-N. Kawde, N. Baig, S. Altuwajri, A. Alawad, H. Stoeckli-Evans, A.A. Isab; *New J. Chem.* (2016) 40, 8288-8295.
51. Crystal structures of dual dopamine D2 and serotonin 5-HT1A active arylpiperidiny-2(1H)-3, 4-dihydroquinolinones, N. Ullah, **Muhammad Altaf**, M. Mansha, A.O. Ba-Salem; *J. Struct. Chem.* (2015) 56, 1441–1445.
50. Synthesis, characterization and anticancer activity of gold(III) complexes with (1*R*,2*R*)-(-)-1,2-diaminocyclohexane, K.H. Omer, A.A. Seliman, **Muhammad Altaf**, N. Casagrande, D. Aldinucci, S. Altuwajrid, A.A. Isab; *Polyhedron*. (2015) 102, 773–781.
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CONFERENCE/WORKSHOP

- 3rd International Conference NUST (Pakistan) 16-18 August 2023 (IC-WEES 22-23)
- 2nd International Conference NUST (Pakistan) 24, 25 August 2022 (NUST-SNS)
- The 4th Saudi International Nanotechnology Conference (Saudi Arab) 26 October 2016 (SINC 2016)
- 3rd European Chemistry Congress Nürnberg (Germany), 29 August- 2 September 2010
- European Chemical Crystallography Meeting Fribourg (Switzerland) 2009
- 2nd European Chemistry Congress Torino (Italy), 16-20 September 2008
- 2nd European Chemistry Conference for Life Sciences Wroclaw (Poland), 4-8 September 2007
- Swiss Chemical Society Fall meeting Zurich 12-13 October 2006
- 1st European Chemistry Congress Budapest (Hungary), 27-31 August 2006
- Swiss Chemical Society Fall meeting Lausanne 13th October 2005

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