Prof. in molecular and structural physical chemistry
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## *Education*

***2022-Present:*** **Prof. Dr. in molecular and structural physical chemistry** at Department of Chemistry, College of Science, University of Thi-Qar.

***2018-2022:*** **Ass. Prof. Dr. in molecular and structural physical chemistry** at Department of Chemistry, College of Science, University of Thi-Qar.

***2014-2018:*** **Ph.D Student in Chemistry** at Redox Inorganic Chemistry Laboratory, Department of molecular chemistry, Grenoble Alpes University, Grenoble, France (defense date 14$^{th}$ February 2018).

***2004-2013:*** **Senior Lecturer in physical chemistry** at Chemistry Department, College of Science, University of Thi-Qar. **Ass. Prof. in physical chemistry** since 29/11/2012.

***2003:*** **Master degree in Physical/Inorganic Chemistry** from Chemistry Department, College of Education for Pure Science, Basra University, Basra, Iraq.

***1999:*** **Bachelor degree in Chemistry** from Chemistry Department, College of Education for Pure Science, Basra University, Basra, Iraq.

## *Research Activity*

Molecular and structural physical chemistry (Molecular machines, Molecular switches, redox-responsive coordination polymers, electrochemistry….voltammetry, spectroelectrochemistry, photochemistry, viscosity, column and TLC chromatographies, transition metal complexes, DC conductivity, solution conductivity, NMR, ESR, Mass , UV-Visible and IR spectroscopies, elemental analysis, Kinetics, thermodynamics, organic and inorganic syntheses).

***2018-Present:*** Design new molecular machines based on multi-responsive coordination polymers incorporating viologen units and beta-diketone derivatives.

***2014-2018:*** Ph.D at Redox Inorganic Chemistry Laboratory, Department of molecular chemistry, Grenoble Alpes University, Grenoble, France (Electron-responsive molecular materials and organized assemblies based on elementary pi-dimer bricks).

- Ability to generate Intramolecular π-dimers for cyclophanes containing two viologen units.
- Redox-activated inclusion complexes.
- Redox-responsive coordination polymers based on π-dimers of viologen radicals.

**Supervisors:** Prof. Eric Saint-Aman and Prof. Guy Royal
Eric.saint-aman@univ-grenoble-alpes.fr and guy.royal@univ-grenoble-alpes.fr

***2004-2014:*** Research at Chemistry Department, College of Science, University of Thi-Qar, Nasiriya, Iraq (Preparation and spectroscopic, thermal and electrical studies of some copper, nickel and cobalt complexes by using tetradentate chelates).

***2000-2002:*** Master degree research at Chemistry Department, College of Education for Pure Science, University of Basra, Basrah, Iraq (Preparation and spectroscopic, thermal and electrical studies of some copper, nickel and cobalt complexes by using tetradentate chelates).

**Supervisors:** Prof. Nazar A. Hussein and Prof. Bahjat A. Saeed
naz_hus140@yahoo.com and bahjat.saeed@yahoo.com

## *Teaching Experience*

***2004-2006:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Second year-class in theoretical and practical physical chemistry.
- Third year-class in theoretical and practical physical chemistry.
- Fourth-year class in quantum chemistry and molecular spectroscopy.

***2004-2005:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Fourth year-class in practical organic characterization.

***2006:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Third year-class in radiation and nuclear chemistry.

***2007-2013:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Second year-class in practical physical chemistry.
- Third year-class in practical physical chemistry.

***2018-2020:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Second year-class in practical physical chemistry.
- Fourth-year class in quantum chemistry and molecular spectroscopy.
- Higher studies (Master, 1$^{st}$ course) in quantum chemistry.
- Higher studies (Master, 2$^{nd}$ course) in molecular electrochemistry.

***2020-Present:*** Teaching at Chemistry Department, College of Science, University of Thi-Qar for:

- Higher studies (Doctorate, 1$^{st}$ course) in nuclear magnetic resonance spectrometry.
- Higher studies (Doctorate, 2$^{nd}$ course) in molecular electrochemistry and switches.
- Fourth-year class in quantum chemistry and molecular spectroscopy.

## *Supervision on higher studies students*

- Supervision on four master and three doctoral students.

## *Languages*

Arabic (native), English (good), French (primary)

***Publications***

Novel molecular switches based on viologen ligand and its transition metal complexes
Israa A. Jassem, Wathiq S. Abdul-Hassan, Ibrahim A. Flafel
*Eurasian Chemical Communications* **2023**, 5 (9), 758-775.

Viologen molecular switches incorporating bis(acetylacetonato) Cobalt(II) and bis(3 chloroacetylacetonato) Cobalt (II) complexes
Haider Hussain Ali, Wathiq S. Abdul-Hassan
*Eurasian Chemical Communications* **2023**, 5 (7), 616-641.

Iron (II), Cobalt (II) and Nickel (II) complexes of bis- (3-chloroacetylacetonate) ethylenediimine and bis-(acetylacetonate) ethylenediimine and their viologen molecular switches
Akram Muhamed Musa, Wathiq S. Abdul-Hassan
*Eurasian Chemical Communications* **2023**, 5 (6), 492-521.

Axial ligation for copper (II) complexes of bis (acetylacetonato) ethylenediimine and bis (3-chloroacetylacetonato) ethylenediimine.extraction of copper by 3-chloro-2,4-pentanedione as complexing reagent
Israa A. Jassem, Wathiq S. Abdul-Hassan, Ibrahim A. Flafel, Hussein. O. Jghebil
*Eurasian Chemical Communications* **2023**, 5 (2), 173-203.

Ligand adduct Ligand Adducts of Bis(acetylacetonato) Copper(II), Bis(3-chloroacetylacetonato) Copper(II) with 4,4'-bipyridine, and Propylene Spacered Bis-viologen
Azhar H. Gatea, W. S. Abdul-Hassan Saher A. Ali, Zahraa M. Mahdi
*Journal of Medicinal and Chemistry Sciences* **2023**, 6 (2), 280-303.

Comparison study of cloud point and solvent extraction of copper by 3-chloro-2,4-pentanedione as complexing reagent
Israa A. Jassem, Wathiq Sattar Abdul-Hassan, Ibrahim A. Flafel, Saher A. Ali, Zahraa M. Mahdi
*Journal of Medicinal and Chemistry Sciences* **2022**, 5 (6), 988-1000.

Comparison study of cloud point and solvent extraction of copper by 3-chloro-2,4-pentanedione as complexing reagent
Azhar Hameed Gatea, Saher A. Ali Alshamkhawy, Wathiq Sattar Abdul-Hassan
*Journal of Medicinal and Chemistry Sciences* **2022**, 5 (5), 743-752.

Novel Redox-Triggered Molecular Switches of Bis (acetylacetone) ethylenediimine-functionalized Viologen
Hussein Oudah Jghebil and Wathiq Sattar Abdul-Hassan
It has been accepted for publishing as a full-length paper in the forthcoming issue of Indian Journal of Heterocyclic Chemistry-Vol.31 # 01 (March 2021).

Redox-Responsive Colloidal Particles based on metallopolymers incorporating Viologen Units
Jérémie Courtois, Bin Wang, Wathiq Sattar Abdul-Hassan, László Almásy, Minhao Yan and Guy Royal
*Inorganic Chemistry* **2020**, 59 (6), 3856-3873.

Synthesis of the (4, 4′-bipyridine)(5, 10, 15, 20-tetratolylphenylporphyrinato) zinc (II) bis (4, 4-bipyridine) disolvate dehydrate and evaluation of its interaction with organic dyes
Raoudha Soury, Mahjoub Jabli, Tawfik A Saleh, Wathiq Sattar Abdul-Hassan, Frédérique Loiseau, Christian Philouze, Anna Bujacz, Habib Nasri
*Journal of Molecular Liquids* **2018**, 264, 134-142.

Redox-Triggered Folding of Self-Assembled Coordination Polymers incorporating Viologen Units.
Wathiq Sattar Abdul-Hassan, Denis Roux, Christophe Bucher, Saioa Cobo, Florian Molton, Eric Saint-Aman, Guy Royal
*Chemistry–A European Journal* **2018**, 24 (49), 12961-12969.

Tetrakis (ethyl-4 (4-butyryl) oxyphenyl) porphyrinato zinc complexes with 4, 4′-bpyridin: synthesis, characterization, and its catalytic degradation of Calmagite.
Raoudha Soury, Mahjoub Jabli, Tawfik A Saleh, Wathiq Sattar Abdul-Hassan, Eric Saint-Aman, Frédérique Loiseau, Christian Philouze, Habib Nasri
*RSC advances* **2018**, 8 (36), 20143-20156.

Electron-responsive molecular materials and organized assemblies based on Pi-radicals as building blocks.
Wathiq Sattar Abdul-Hassan
Thesis 2018, Université Grenoble Alpes.

Molécules et Matériaux Moléculaires Rédox- et Photo-Stimulables
Wathiq Sattar ABDUL-HASSAN, Éric SAINTAMAN, Guy ROYAL, Christophe KAHLFUSS
*L'ACTUALITÉ CHIMIQUE* **2018**, N° 430-431 79-84.

Redox responsive coordination polymers based on the viologen units
Guy ROYAL Wathiq Sattar ABDUL-HASSAN, Denis ROUX, Saioa COBO, Eric SAINT-AMAN, Christophe BUCHER, Florian MOLTON
ISMEC 2017 International Symposium on Metal Complexes 7, Symposium Edition: XXVIII, page 55.

Molecular Structures and Spectral Properties of some Substituted (pyrazol-1-yl)phenylmethanone Derivatives and their Palladium Complexes Derived from Quantum Calculations
WS Abdul-Hassan
*Journal of College of Education for Pure Science* **2013**, 3 (1), 130-158.

Ab initio calculations and structure of three acyclic bis (acetyl acetone) imine derivatives
Wathiq Sattar Abdul-Hassan, Huda Majid Hasan, Athraa Hameed Mekky
*JOURNAL OF THI-QAR SCIENCE* **2012**, 3 (3), 149-157.

Synthesis and characterization of 4'-nitro-4-(-2-hydroxy-3-methoxy benzillidene-1-naphthylamino) azobenzene and its complexes with Cu (II), Ni (II) and Co (II) metal ions
Saher A Ali, Sajed H Gzar, Wathiq S Abdul-Hassan
*JOURNAL OF THI-QAR SCIENCE* **2012**, 3 (3), 117-128.

Study the anticancer activity of plant phenolic compounds
Haider R. Maleh Ali I. Obied, Raad M. Hanaon, Nahi Y. Yaseen, Wathq S. Abdul-Hassan
*Iraqi Journal of Cancer and Medical Genetics* **2011**, 4 (2), 66-71.

Preliminary Biochemical study of Aqueous, Ethanolic and Alkaloids Extracts of Xanthium spinosum L.
Wathiq Sattar Abdul-Hassan
*Journal of Thi-Qar Science* **2009**, 1 (3), 46-63.

Preliminary Biochemical Study of Hot Aqueous and Ethanolic Extracts of Phoenix Dactylifera
Wathiq Sattar Abdul-Hassan
*University of Thi-Qar* **2008**, 3 (4), 31-44.

Isolation and Identification of two active components from Calendula officinalis L. and Apium graveolens L. and tested their activity against some of human pathogenic fungi.
Wathiq Sattar Abdul-Hassan and Najaw Mohammed Jameel Ali Abu-Mejdad Abdul-Ridha Akbar Alwan Al-Meyah, Abdullah Hmoud Al-Saadoon
*Basrah Journal of Science* **2006**, 24 (1), 70-87