COORDINATION CHEMISTRY GROUP (CCG)

MEMBERSHIP

1. **Prof. Dr. Hadariah Bahron**  
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2. **Dr. Yong Soon Kong**  
   Member  
   Ph.D. (University of South Australia) Faculty of Applied Sciences

3. **Dr. Amalina Mohd Tajuddin**  
   Member  
   Ph.D. (Universiti Teknologi MARA) Faculty of Applied Sciences

4. **Dr. Mohd Shihabuddin Ahmad Noorden**  
   Member  
   Ph.D. (Kyushu University, Japan) Faculty of Pharmacy

5. **Mrs. Shadatul Hanom Rashid**  
   Member
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RESEARCH WORK

The work by CCG members can be categorized into 4 main areas:

a) Synthesis and characterization of novel ligands and metal complexes.

b) Biological activities of the ligands and complexes.
   - Antimicrobial (antibacterial dan antifungal) activities
   - Antioxidant potential
   - DNA cleavage ability
   - Cytotoxicity on healthy cells

c) Corrosion inhibition properties of the ligands.

d) Catalytic activity of the complexes.

The synopsis of each area is as outlined below:
a) Novel Schiff base and hydroxamic acid ligands and their metal complexes

For academic curiosity and development of the field of fundamental research, ligands with new architecture and their various metal complexes are designed, synthesized and characterized in the laboratory. The structural, physical and chemical data obtained from these novel compounds are useful in providing clues and guides for researchers interested to investigate the applications of these compounds in various fields.

b) Biological activity of ligands and metal complexes

Biological activity such as antibacterial, antifungal, antiviral, antioxidant, antitumour, antidiabetic and cytotoxicity can be investigated for the various compounds synthesized in as a small initial step itowards developing new drugs in combating the diseases that are compromising the quality of human life.

c) Corrosion inhibition potential of compounds containing heteroatoms and p-electron systems

Compounds that have anchoring points through lone pair of electrons and p-electrons can be designed and synthesized in an attempt to produce corrosion inhibitors for various metals such as mild steel, copper and zinc. These compounds can be used as alternative to commercially available inorganic corrosion inhibitors which have the drawback of being toxic and harmful to human and the environment.

d) Catalytic properties of palladium and titanium Schiff base complexes

Novel homogeneous and heterogeneous catalytic system can be developed using the compounds synthesized in the laboratory to increase the efficiency, recoverability and ease of use of the catalyst for various chemical reactions such as Suzuki and Heck reactions of C-C cross coupling and oxidation reactions. The heterogeneity is achieved by mounting the catalytic
compounds on inert vehicles such as MCM-41 and carbon nanotubes (CNT).

CURRENT POST-GRADUATES

a) Miss Noorlaila Ramlee (PhD)

*Tetradentate Schiff Bases As Ionic Scavengers In Polymeric Coatings Towards Corrosion Inhibition Of Mild Steel*

b) Mrs Zailelah Zainoldin (PhD)

*Synthesis And Characterization Of Schiff Bases For Corrosion Inhibition Study*

c) Miss Aliyin Abdul Gani (PhD)

*Benzenoid Polycyclic Schiff Bases As Corrosion Inhibitors*

d) Miss Nur Amina Zainal (PhD)
Synthesis and Bioactivity of Self-Assembly Macromolecular Coordination Complexes

e) Mr Shahrul Nizam Ahmad (PhD)

Catalytic Properties Of Palladium(II)Azomethine Complexes In C-C Bond Formation

CURRENT UNDERGRADUATES - FINAL YEAR PROJECTS

a) Nurul Nabila Binti Mahmad Shukri (AS202)

Synthesis And Characterization Of Cu(II), Co(II) And Ni(II) Complexes Of TetradequateAzomethines For Catalysis Of Oxidation Reaction

b) Mohammad Amirrul Rashid Bin Anuar (AS202)

Corrosion Inhibition Properties Of Schiff Bases Derived From O-Vanillin And Salicylaldehyde For Mild Steel In 1M Hydrochloric Acid
c) Latifah Robbaniyyah Binti Hassan (AS202)

*Antibacterial Activity Of Ni(II), Cu(II), Co(II) Complexes Of Bidentate Schiff Bases*

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**COMPLETED POST-GRADUATES**

a) **Dr. Karimah Kassim (PhD)**

*Synthesis and Characterization of New Macrocyclic and Acyclic Schiff Base Ligands and Metal Complexes*

b) **Dr. Amalina Mohd Tajuddin (PhD)**

*Synthesis And Characterization Of Palladium(II) And Nickel(II) Complexes Of Schiff Bases And The Potential Of The Palladium(II) Complexes As Catalysts For C-C Bond Formation*
c) Mr. Ahmad Shalabi Md Sauri (MSc)

Synthesis, characterization of Schiff Base ligands and the investigation on effects of substituents towards the corrosion inhibition on copper and steel

d) Miss Fatimatuzzahraa Mohd Fadzel (MSc)

Tetradentate Schiff Bases Derived From 2,6-Diaminopyridine: Complexation And Neurotoxicity Screening

e) Mr Ahmad Fauzi Abu Bakar (MSc)

Synthesis, Characterization And Neurotoxicity Screening Of Schiff Base Ligands Derived From 1,8-Diaminonaphthalene And Their Cu(II), Co(II), Ni(II) and Zn(II) Complexes

f) Mrs. Siti Noriah Mohd Shotor (MSc)

Hydroxamic Acid Series And Their Metal Complexes: Synthesis, Characterization, Cytotoxicity
And Neurotoxicity Study

COMPLETED UNDERGRADUATE FINAL YEAR PROJECTS

a) Shadatul Hanom Rashid

Synthesis and Characterization of Cu(II) Complex With Bidentate Schiff Bases Derived from Ethylenediamine and 4-Chlorobenzaldehyde or 4-chloroacetophenone

b) Izyan Abdul Wahab
Synthesis and Characterization of Schiff Bases and Their Copper(II) and Zinc(II) Complexes

c) Eizuan Mueizany Abd Aziz

Synthesis and Characterization of Nickel(II) and Cobalt(II) Complexes with Tetradeutate Schiff Base Ligands Derived from Ethylenediamine, Salicylaldehyde, Diaminomaleonitrile and 2,4-dihydroxyacetophenone.

d) Nor Roziani Azmi

Synthesis and Characterization of Transition Metal Complexes of Bis(bidentate) Schiff Base Ligands.

e) Nor Azimah Zubit

Complexation of Nickel(II) with Bidentate Schiff Bases: Synthesis and Spectral Characterization.

f) Musaini Musban

Synthesis and Characterization of Bidentate Schiff Base Ligands derived from 4-Methylbenzaldenyde.

g) Amirullah Hamering
Salicylaldehyde derived Schiff Bases and Their Metal Complexes: Synthesis, Characterization and Biological Activity.

h) Nur Hafina Husin

Isoniazid Schiff Bases and Their Metal Complexes: Synthesis, Characterisation and Biological Studies.

i) Suhaili Zainal Abidin

Complexation of Schiff base Ligands: Synthesis, Characterization and Antimicrobial Studies

j) Ruzy Mohammad

Complexation of Schiff base Ligands: Synthesis, Characterization and Antimicrobial Studies

k) Siti Noriah Mohd Shotor

Synthesis of Schiff Bases derived from 2,4-dihydroxyacetophenone with o-phenylenediamine and propane-1,3-diamine and Their Complexes: Application as antimicrobial agents

l) Nazeeya Tajuddin (AS225)

Corrosion inhibition of Bidentate Schiff Bases in $H_2SO_4$ solution.
m) Norhidayah Jamaluddin (AS225)

_Ethylendiamine derived Schiff Bases as Corrosion Inhibitors._

n) Shazana Zawani Aziz Jaafar

_Hydroxamic Acids and their Cu(II) and Zn(II) Complexes – Synthesis, Characterization and Antibacterial Activities._

o) Suhainiza Bahari

_Synthesis, Characterization and Antioxidation Application of hydroxamic acids and their Co(II), Ni(II) and Cr(III) complexes._

p) Amalina Mohd Tajuddin

_Vanadium Complexes of Hydroxamic Acids: Synthesis, Characterization and Cytotoxicity Investigation_

q) Nurhazira Sabri

_Cell Viability and Antioxidant Studies of Salicylhydroxamic Acid and its Cr(III) and Co(II) Complexes_

r) Nor Haslini Wahid
Cytotoxicity and DNA Cleavage Studies of Salicylhydroxamic Acid and Its Ni(II), Cu(II) and Zn(II) Complexes

s) Azlan Shah Mustafa

Antioxidant activity of Hydroxamic Acids and Metal Complexes

t) Indra Totoh (AS225)

Investigation of Schiff Bases as Corrosion Inhibitor for Mild Steel in 1M Sulfuric Acid

u) Mohd Shahril Anoar (AS225)

Inhibitive Effect of Schiff Bases on Corrosion of Mild Steel in Hydrochloric Acid Solution

v) Illuni Hayaty Ahmad (AS225)

Synthesis, Characterization and Antioxidat Studies of Copper(II) Complex with Schiff Bases derived from 4-hydroxybenzaldehyde

w) Norhafizah Zakaria (AS225)

Synthesis, Characterization and Biological Application of Schiff Base Ligand and its Copper(II) and Iron(III) complexes derived from 2,4-dihydroxybenzaldehyde and...
1,3-diaminopropane

x) Mohd Azli Yahya (AS225)

*Synthesis, Characterization and DNA Cleavage Evaluation of Schiff Base derived from N-Phenyl-1,4-Phenylenediamine*

y) Mohamed Firdaus bin Mohamed Hussain (AS225)

*Schiff Bases Derived from Melamine as Corrosion Inhibitors*

z) Mohd Akmal bin Ahmad Tiis (AS225)

*Tetradentate Schiff Bases as Corrosion Inhibitors*

aa) Nurul Farhana Najib (AS202)

*Corrosion Inhibition of Azomethine Compounds for Mild Steel in 1M Sulfuric Acid*

bb) Nurhadilah Che Harun (AS202)

*Schiff Bases as Corrosion Inhibitors for Copper in Hydrochloric Acid*

cc) Masitah Mohamad Puzi (AS202)
Copper(II) Complexes of Analogous Bidentate Schiff Bases

dd) Erma Shakila Md Isa (AS202)

Non-Symmetrical Schiff Bases as Corrosion Inhibitors of Mild Steel in Acidic Solution

ee) Mohammad Ashrafulanuar Bin Mohd Masadi (AS202)

Hydrazide-Derived Schiff Base and Its Metal Complexes: Synthesis and Characterization

ff) Norsyakila Mohd Limin (AS202)

Synthesis And Characterization Of Schiff Bases Derived From Ortho-Phenylenediamine For Corrosion Inhibition Of Mild Steel In 1M Hydrochloric Acid

gg) Siti Ruqaiyah Binti Nuruddin (AS202)

Synthesis And Characterization Of Bidentate Schiff Bases Derived From Benzalamine Derivatives For Corrosion Inhibition Of Mild Steel In 1M Hydrochloric Acid


