

**Shukri Khalaf**  
**Associate professor**  
**Chemistry Department**  
**An-Najah National University**

**Education:**

1. Doctor of Philosophy (Ph.D.) 1982 University of Manchester. Institute of Science and Technology/ Manchester/ England  
  
Thesis: The polymerization of vinylidene chloride By Ziegler-Natta catalysts
2. Master of Science (M.Sc.) 1979  
By examination and Dissertation in petrochemicals and hydrocarbon chemistry.  
Dissertation: Effect of Electron Donors on Ziegler-Natta Polymerization
3. Bachelor of Science (B.Sc.) 1978 Bir- Zeit University / Bir Zeit / West Bank  
Principal subject, chemistry

**Research Experience**

1. Areas of Research Done  
The Ph.D. and M.Sc. work was concerned with kinetic studies using homogeneous and heterogeneous Ziegler-Natta polymerization catalyst systems.  
Part of my research at An-Najah N. University was concerned with Hydro-silylation Reactions and O- Silylation Reactions using different Catalysts. The other part of research done at An-Najah N. University was related to the determination of metal ions spectrophotometrically.
2. Areas of current interests:  
At the time being I am interested in Kinetics and Catalysis in General. But I prefer supported Ziegler- Natta Catalysts.
3. Lab. Techniques:  
Dilatometry was used to follow the rates of polymerization in Ziegler-Natta polymerization.  
A liquid Scintillation Counter was used to detect the activities of tritiated polymers.  
A constant – pressure gas burette was used in the O-Silylation reactions and. A pye - Unicam gas chromatogram with a F. I. D., equipped with a 1.5 m column was used for the hydrosilylation reactions.  
A Pye Unicam SP8 100 Ultraviolet Spectrophotometer was used for the determination of metal ions in mixtures.

### **Courses Taught:**

- General Chemistry Courses.
- Analytical Chemistry.
- Physical Chemistry (1) (Chemical Thermodynamics).
- Physical chemistry (2) (Chemical Kinetics).
- Engineering Thermodynamics.
- Experimental Physical Chemistry (1).
- Experimental Physical Chemistry (2).
- Seminar.
- Advanced Physical Chemistry (Thermodynamics).
- Advanced Physical Chemistry for graduate Students (Kinetics & catalysis).

### **Awards and Grants**

1. British Council grant 1980-1981.
2. Student Aid International 1980-1982.

### **Proposal Research Goals**

The general objective of the proposed project is the use of a new class of supported catalysts ( V, Ti, Zr) in the stereospecific polymerization of – olefins.

### **Personal:**

Sex: Male  
Married  
Date of Birth: August 1st , 1955  
Place of Birth: Jerusalem  
Nationality: Jordanian

### **Publications:**

1. Hydrosilylation Reactions Catalysed by Decarbonyl dimanganese (O), J. Mol. Catal.,39 (1987),1.
2. Homogenous Catalysis of Reaction of Silanes with Alcohols Using Dimanganese Decarbonyl, J. Mol. Catal., 35 (1986)137.
3. Some Recent Studies on Catalyst Activity in Vanadium-Based Ziegler-Natta Catalysts. Proc. IUPAC, Macromol. Symp., 28<sup>th</sup> 1982, 256.
4. A new Method for supporting Platinum Complexes on silica and using them as Catalysts for O-Silylation Reactions, Abstract accepted, Catalysis Conference, Qatar University, December 20-22, 1986

5. Spectrophotometric Determination of Cobalt with Di-2-Pyridyl ketone Benzoylhydrazone, *Spectroscopy letters*, 24(9), 1145-1152 (1991).
6. Spectrophotometric Determination of Uranium In Ores Using Di-2Pyridyl Ketone Hydrazone Derivatives, *Spectroscopy Letters*, 25(4) 585-592 (1992)
7. Effects on Growth And Uptake of Broad Beans ( *Vicia Fabae L.*)By Root And Foliar Treatments of Plant With Lead And Cadmium, *J. Environ, Sci. Health*, A27(7), 1619-1642 (1992).
8. Spectrophotometric Determination of Cobalt In Aqueous Solution Using Di-2-Pyridyl Ketone Derivatives, *Analytica Chemica Acta*, 259, 175, (1992).
9. Olefin Hydrogenation and Isomerization Catalysed by  $Ru_3(CO)_{12}$  and its Derivatives: Cluster vs. Non- Cluster Catalysis, *J. Organometal. Chem.* 452, 161-165 (1992).
10. Cluster vs. Non-Cluster Catalysis in Olefin Thermal Isomerization And Hydrosilylation in the presence of  $Ru_3(CO)_{12}$ , *J. Organometal. Chem.* 452, 167-173, 1993.
11. On the Mechanism of Olefin Hydrosilylation and Isomerization Reactions Using  $Ru_2(CO)_{12}$ , *An-Najah J. Res.*, II(8), 175 – 183 (1994).
12. A role for Decaying Leaves In Mitigating The Harmful Effects of Acid Rain, *J. Env. Sci. And Health, Part A-Env. Sci. and Eng.* A29 (1) 115-127 (1994).
13. Cluster Catalysis of Olefin Hydrosilylation and Isomerization. Thermal Reactions Using  $Co_4(CO)_{10}(PPh)_2$ , *An-Najah .J. Res.* ( 1996) 4 (10),42-70.
14. A role for Decaying leaves in Mitigating the Harmful Effects of Acid Rain: Effects of Acidity , Foreign Ions, Concentration of Leaves and Location. *J.Environ Sci. Health*, A29(3), 467-457 (1994).
15. Spectrophotometric Determination of Uranium with Di-2-Pyridyl Ketone Benzoylhydrazone, *An-Najah J. Res.* II(8) (1994).

16. "Polysiloxane)- supported metalloporphyrin catalysts: the effect of the support on the catalyst activity and selectivity, J. Mol. Catal., 113.(1996)35.
17. Terminal olefin Isomerization Reactions catalyzed by poly (siloxane)-supported  $\text{Ru}_3(\text{CO})_{12}$ : The effect of the support on the catalyst selectivity, Activity and stability, J, Al-Azhar University – Gaza, 1 (1) 1-21 (1999).
18. Poly (siloxane)-supported decarbonyl dimanganese (O) catalyst for terminal olefin hydrosilylation reactions: the effect of the support on the catalyst selectivity, activity and stability, J. Mol . catal .A,144 (1998) 47-59.