

## AHMED GALAL HELMY, PROFESSOR OF CHEMISTRY

Vita revised November 6, 2010

Birthdate: September 27, 1957

Birthplace: Cairo, Egypt

Graduate Faculty

Department of Chemistry

University of Cairo/University of Cincinnati

### EDUCATION

- B.Sc. (Chemistry), University of Cairo, 1979.
- M.Sc. (Chemistry), University of Cairo, 1984.
- M.Sc. (Chemistry), University of Cincinnati, 1989.
- Ph.D. (Chemistry), University of Cincinnati, 1992.

### EXPERIENCE

- Research Assistant, Department of Chemistry, University of Cairo, 1979 - 85.
- Lecturer Assistant, Department of Chemistry, University of Cairo, 1979 - 85.
- Research Assistant, Department of Chemistry, University of Cincinnati, 1986 - 1992.
- Teaching Assistant, Department of Chemistry, University of Cincinnati, 1987 - 1992.
- Postdoctoral Research Associate, University of Cincinnati, 1992 - 1994.
- Assistant Professor, University of Cairo, 1992 - 1998.
- Associate Professor, University of Cairo, 1999 - 2006.
- Professor, University of Cairo, 2007 - present.
- Assistant Professor, University of United Arab Emirates, 1996 - 2002.
- Visiting Professor: University of Cincinnati, Departments of Chemistry, Environmental Engineering and Materials Science, 1994 - present.
- Research & Development Manager, American Micro Products, Inc., 1991-1994.
- **Ministry of Higher Education & State Ministry for Scientific Research, the Minister Office, Cairo – Egypt. Minister Advisor, 2007 – present,**
- **Ministry of Higher Education & State Ministry for Scientific Research, Cairo – Egypt. Member of Strategic Planning and Technical Support Centre, 2007 – present.**
- **Academy of Scientific Research and Technology (ASRT – Egypt). Academy President Assistant and Director of Invention & Innovation Sector and Centre of Scientific Equipments, 2007 – present.**
- **Ministry of Higher Education & State Ministry for Scientific Research, Cairo – Egypt. Member of Board of Research, Development and Innovation Program, a Program funded by the European Union, 2007 – present.**
- **Dean of Faculty of Science, University of Cairo, August 2008-present.**

### HONORS

- University of Cairo first class graduation award for the best achievement in chemistry, 1980.
- Graduate Fellowship, University of Cincinnati, 1987.
- Graduate Fellowship Award, Quantum Chemical Corporation, 1989 - 1990.

- Visiting Scholar, University of Cincinnati, 1986 - 1988.
- Plenary Lecture, Central Regional Meeting of the ACS, Cincinnati, Ohio, 1992.
- Visiting Professor, The Free University of Berlin, Germany, 1993.
- Plenary Lecture, 42<sup>nd</sup> ISE Meeting, Berlin, Germany, 1993.
- Plenary Lecture, ACS National Meeting, Washington DC., 1994.
- Invited Speaker at the ACS National Meeting, Florida, 1996.
- Fellowship award of the "Alexander von Humboldt Stiftung," 1996 - 1998.
- Invited Speaker at the ACS National Meeting, San Francisco, 2000.
- Session Chairman at the ACS National Meeting, San Francisco, 2000 (by invitation).
- Organizing committee/Invited Speaker, United Arab Emirates University 2<sup>nd</sup> Symposium on Materials Science and Engineering, Al Ain, UAE, 1998.
- Invited speaker at "Sheikh Zayed' Stands and Accomplishments" Symposium, Abu Dhabi, UAE, 2000.
- Invited Jury at the "Environmental Design Contest," Al Ain, UAEU, 2000.
- Consultant, Criminal Court, Al Ain, UAE, 1999.
- Invited speaker, Ministry of Education, Abu Dhabi, UAEU, 1998, 1999, 2001, 2002.
- Coordinator/Instructor, Intensive Training Workshop, Ministry of Defense, Abu Dhabi, UAEU, 2002.
- Participant/Organizer, UNESCO Workshop on Internet Use in Teaching, Al Ain, UAEU, 1998, 1999.
- Member, Opening Ceremony of "Smart Class Rooms," Al Ain, UAEU, 1997.
- Invited Speaker, Department of Chemistry, University of Liverpool, Liverpool, England, 2005.
- Invited Speaker, Institute of materials science, University of Erlangen, Erlangen, Germany, 2005.
- Invited Speaker, Institute of Physics, University of Ilmenau, Ilmenau, Germany, 2005.
- Invited Speaker, American University of Beirut / Arab Academy of Sciences, Beirut, Lebanon, 2005.
- Member in National Committee on New and Advanced Materials, Egypt, 2006-present.
- Invited Speaker, International School on Surfaces, Thin Films, Nanostructures and Applications, Lahore, Pakistan. International Symposium on Nano Science & Technology, Islamabad, Pakistan, 2006.
- Invited Speaker, Institute of Micro- and Nano-materials, University of Ulm, Germany, 2007.
- Invited Speaker, Institute of Solar Energy, Ulm, Germany, 2007.
- Secretary General Assistant, Fourth International Conference for Research, University of Cairo, 2008.
- **Egyptian delegate to International Science Technology and Innovation Centre for South-south Cooperation under the Auspices of UNESCO, Kuala Lumpur, Malaysia, 2008.**
- **Egyptian delegate to the inauguration of the Euro-Mediterranean University (EMUNI) in Slovenia, 2008.**
- **Egyptian delegate to the Centre for Science and Technology of the Non-Aligned and other Developing Countries (NAM S&T), Cochin - India, 2008.**
- **Egyptian delegate to the RussNano Forum, Moscow-Russia, 2008.**
- Invited speaker, KCC2010 at Kuwait City (Kuwait Chemical Society Conference), 2010.

- Invited speaker, US-Egypt Advanced Studies Institute, Cairo – Egypt, March 2010.

### **ACTIVITIES**

- Research Associate, Shell Co., Cairo, 1975 - 1979.
- Internship, Quantum Chemical, Co., Cincinnati, Ohio, 1989 - 1990.
- Reviewer, Royal Society of Chemistry, England, 1990 - present.
- Consultant, Waite, Schneider, Bayless & Chesley Co., L.P.A., Cincinnati, Ohio, 1993 - 94.
- Consultant, Fairfield Police Department, Cincinnati, Ohio, 1994.
- Consultant, American Micro Products, Inc., Cincinnati, Ohio, 1990 - 1993.
- Consultant, Al-Ezz Industrial Group, Inc., Cairo, Egypt, 1994 - 1996.
- Member, Graduate Committee, Materials Science, UAEU, Al Ain, 1998 - 2002.
- Member, Active Faculty Group for Research and Teaching, UAEU, Al Ain, 1998 - present.
- Coordinator/Member, Teaching Innovation Committee, UAEU, Al Ain, 1999 - present.
- Coordinator/Member, Assessment of Learning, UAEU, Al Ain, 2000 - present.
- Member, Teaching Research Projects Evaluation Committee, UAEU, Al Ain, 1999 - present.
- Coordinator, Instruction Books Purchasing Committee, UAEU, Al Ain, 1997- present.
- Coordinator, Lab Furniture Purchase Committee, UAEU, Al Ain, 2000 - present.
- Member, Academic Use of Computer Facilities, UAEU, Al Ain, 1998 - 2000.
- Science Advisor, “Creativity Club,” UAEU, Al Ain, 1999 - 2001.
- Member National Committee for Advanced Materials, Cairo, Egypt, 2005 - present.
- Advisor, Minister of Higher Education & State Minister for Scientific Research, 2007-present.
- Member of Strategic Planning and Technical Support Center, State Ministry for Scientific Research, 2007-present.
- Member of Research & Development Innovation Committee of the European Union Commission in Egypt, 2008-present.
- National Focal Point/FP7 of the EU in Egypt for Advanced Materials, 2007-present.

### **EDITING AND REVIEWING ACTIVITIES**

- Member of editorial board: Physical Chemistry Letters.
- Reviewer: Royal Society of Chemistry, Applied Polymer Science, European Polymer Journal, Electrochimica Acta, Talanta.

### **PROFESSIONAL SOCIETIES**

- American Chemical Society.
- International Society of Electrochemistry.
- Egyptian polymer Society.
- Society of Electroanalytical Chemistry.
- Electrochemical Society.

## RESEARCH INTERESTS

Our research interests are in the areas of **Electrochemical Sensors, Nano-materials, Conducting Polymers, Corrosion and Passivity of Metals and Alloys** and **Environmental Chemistry**. The application of conducting polymers as *modified electrodes in sensor technology* is our main focus. *Molecular imprinting* and *drug/surfactant* interactions are currently investigated. We are also studying the *corrosion inhibition* of metals and alloys using *organic molecules* and *polymer films*. We are using *surface and spectroscopic techniques* to evaluate polymer and metallic surfaces. On the other hand, we are interested in developing new *electrochemical treatment methods* for *cleaning the environment* from potential pollutants.

## GRANTS

- Development of Conducting Polymer Ion Selective Microelectrodes for Use in Environmental and Biomedical Analyses, National Science Foundation, 1995 - 1997, funded, \$35,000 (with P. L. Bishop and H. B. Mark, Jr.).
- Conducting Polymers Sensors, Research Council, UAEU, Al Ain, UAE, 1997, funded, Dhs. 10,000.
- Corrosion of Metal Implants, Research Council, UAEU, Al Ain, UAE, 1999, funded, Dhs., Dhs. 14,000.
- Inhibition of Cold Rolled Steel, Research Council, UAEU, Al Ain, UAE, 2000, funded, Dhs. 18,000.
- Development of Interactive Learning in Chemistry Curriculum, Teaching Innovation Research Program. UAEU, Al Ain, UAE, 2001, funded, time-share.
- Corrosion Protection by Plasma Deposited Polymers over Metal and Alloys, National Science Foundation, 2003, pending.
- Conducting Polymers/Metal Hybrid Nano-structures, University of Cairo, 2004, 50,000 EGP.
- Graduate Program in Materials Chemistry with Emphasis on Nano-technology. European Union, first phase approved for funding, 6,000 EU. 2004/2005. Second phase (pending) 500,000 EU.
- Nanomaterials for energy conversion, University of Cairo, 200,000 LE, 2009.

## LIST OF COURSES TAUGHT

- **University of Cincinnati, Cincinnati, Ohio, USA, 1989-present:**
  - 1- General Chemistry I, II & III.
  - 2- General Chemistry Laboratory.
  - 3- Technical Chemistry.
  - 4- **Chemical Applications for Engineers.**
  - 5- **Instrumental Analysis (Graduate).**
  - 6- Organic Chemistry I.

- 7- Organic Chemistry II.
- **University of Cairo, Cairo, Egypt, 1994-1996, 2002-present:**
  - 1- **Physical Chemistry of Polymers.**
  - 2- **Bioenergetics** (Graduate).
  - 3- **Physical Chemistry** (1<sup>st</sup> year students).
  - 4- Irreversible Electrochemistry (4<sup>th</sup> year students).
  - 5- Physical Chemistry Laboratory (4<sup>th</sup> year students).
  - 6- Analytical/Physical Chemistry Laboratory (2<sup>nd</sup> year students).
  - 7- General Chemistry Laboratory (1<sup>st</sup> year students).
  - 8- Physical Chemistry II, BIOC 209, (2<sup>nd</sup> year students of biotechnology program).
- **University of United Arab Emirates University, Al Ain, UAE, 1996-2002:**
  - 1- General Chemistry I.
  - 2- General Chemistry II.
  - 3- General Chemistry for Family Education.
  - 4- General Chemistry and Engineering Applications (Co-teaching).
  - 5- Chemistry in our Life (General Education Course).
  - 6- Chemistry Computer Laboratory.
  - 7- **Physical Chemistry I.**
  - 8- **Physical Chemistry II.**
  - 9- Polymer Chemistry.
  - 10- Instrumental Analysis (Graduate Course).
  - 11- **Structure and Properties I** (Graduate Course).
  - 12- **Characterization of Materials** (Graduate Course).
  - 13- Biomaterials (Graduate Course).
  - 14- **Surface and Corrosion Science** (Graduate Course).
  - 15- **Special Topics in Metals and Alloys** (Graduate Course).
  - 16- **Independent Studies in Metals and Alloys** (Graduate Course).
  - 17- Synthesis of Polymers (Graduate Course).
  - 18- **Special Topics in Polymers** (Graduate Course).
  - 19- Independent Studies in Polymers (Graduate Course).
  - 20- Seminar (Graduate Course).

#### **SPECIAL SKILLS**

- Knowledge of variety of computer applications including special modeling software.
- Language fluency: Arabic, English, French and some knowledge of German.
- High interpersonal communication skills.
- Team work spirit and leadership capability.
- Writing and oral professional reports presentation skills.
- Participated in a variety of professional and informal seminars and presentation that includes, and not limited to: technical, teaching, sale, consultation, leadership.
- Sport championships: Swimming, Football, Racquet Ball, Chess.

#### **REFERENCES**

- Available upon request from all previous working places.

## CONFERENCE PAPERS

- 1- The Effect of Surface Preparations of Solid Substrates on The Properties of Polymer Films, with Harry B. Mark, Jr., Hans Zimmer, David D. Cunningham and Laarni Laguren-Davidson, presented at The Federation of Analytical Chemistry and Spectroscopy Societies FACSS, Fourteenth Annual Meeting, Detroit, MI., **(1987)**.
- 2- Effect of Supporting Electrolyte on the Properties of Conducting Polyheterolene Films. with O. Yavuz Ataman, Edmund T. Lewis, Laarni Laguren-Davidson, David D. Cunningham, C. V. Pham, Hans Zimmer and Harry B. Mark, Jr., presented at the Pittsburgh Conference & Exposition on Analytical Chemistry and Applied Spectroscopy, New Orleans, LA, **(1988)**.
- 3- Spectroelectrochemical Analysis of Some Polyheterolenes, with O.Y. Ataman, Laarni Laguren-Davidson, Edmund T. Lewis, David D. Cunningham, C.V. Pham, Armin Burkhardt, Hans Zimmer, and Harry B. Mark, presented at the Pittsburgh Conference & Exposition on Analytical Chemistry and Applied Spectroscopy, New Orleans, LA, **(1988)**.
- 4- Copper Containing Conducting Polymer Electrochemical Anion Detector For Ion Chromatography, with Z.L.Xue, O.Y. Ataman, R. Shabana, A. Amer, H. Zimmer and H.B. Mark, Jr., presented at The Pittsburgh Conference, Atlanta, GA., **(1989)**.
- 5- Electrochemical Anion Detection Using An Electrochemically Polymerized Conducting Polymer Modified Electrode, with G.C. Russell, I.C. Lee, O.Y. Ataman, H. Zimmer, and H.B. Mark, Jr., presented at the Pittsburgh Conference, Atlanta, GA., **(1989)**.
- 6- Electrochemical Polymerization and Characterization of Some Mixed Oligomers Containing Thiophene And Selenophene Units, with O.Y. Ataman, A. Burkhardt, R. Shabana, H. Zimmer and H.B. Mark, Jr., presented at the Pittsburgh conference, Atlanta, Ga., **(1989)**.
- 7- Synthesis and characterization of highly conducting polymers, presented at the FACSS Meeting, Chicago, IL., **(1989)**.
- 8- Electrochemical Synthesis, Characterization and Spectroelectrochemical Studies of Some Conducting Polyheteroarylenes, with D.D. Cunningham, Ali E. Karagozler, Edmund T. Lewis, Asare Nkansah, Armin Burkhardt, O.Y. Ataman, Hans Zimmer and Harry B. Mark, Jr., presented at the 176th Electrochemical Society Meeting, Hollywood, FL., **(1989)**.
- 9- Electrochemistry and Detection of Organic and Biological Molecules at Conducting Polymer Modified Electrodes, with Nada F. Atta, A. Ersin Karagozler, George C. Russell, Hans Zimmer, and Harry B. Mark, Jr. The first World Congress on Biosensors, Singapore 2-4 May **(1990)**.
- 10- Synthesis, Spectral Properties of some Novel Oligo-5-Membered Heteroarylenes and Oligomeric thiophene derived Crown Ethers, with Arthur T. Hubbard, Bruce E. Kahn, Harry

B. Mark, Jr., Rashad S. Omar, and Hans Zimmer, GBCH-Meeting, BONN, Germany, Sept., 24-28, **(1989)**.

- 11- Electrochemical Deposition of Mercury Films on Organic Conducting Polymer, a New Modified Electrode for Stripping Analyses, with Zhi Wang, Hans Zimmer and Harry B. Mark, Jr. Presented at the 42nd Meeting of the International Society of Electrochemistry, Montreux, Switzerland, August 25-30, **(1991)**.
- 12- Electrochemical Studies of Some Organic and Biological Molecules at Conducting Polymer Electrodes, with H. B. Mark, Jr., N. F. Atta, and H. Zimmer. Presented in the 201st National Meeting of the ACS, April 14-19, Atlanta, GA, **(1991)**.
- 13- Electrochemical Analysis of Some Organic and Biological Molecules at Conducting Polymer Electrodes. A Comparative Study, with N. F. Atta, H. Zimmer, and H. B. Mark, Jr. Presented at the FACSS/Pacific Conference 27th Western Regional ACS Meeting, Anaheim, California, October 6-11, **(1991)**.
- 14- Simultaneous Determination of Catecholamines Levels By HPLC with Electrochemical Detection using Conducting Polymer Electrodes, with N. F. Atta, H. Zimmer, H. B. Mark, Jr., and G. A. Paroz. Presented at the Pittsburgh Conference, New Orleans, Louisiana, **(1992)**.
- 15- The Electrochemistry and Characterization of Conducting Polymer Films at "Active" Metal Substrates. The Protection of Metal Surfaces Against Corrosion, with H. Zimmer, and H. B. Mark, Jr. Presented at the Pittsburgh Conference, New Orleans, Louisiana, **(1992)**.
- 16- Conducting Polymers-Based Ion-Selective Electrodes, with H. Zimmer, H. B. Mark, Jr., and G. A. Paroz. Presented at the Pittsburgh Conference, New Orleans, Louisiana, **(1992)**.
- 17- The Application of Conducting Polymers as Chemical Sensors, with H. B. Mark, Jr. Presented at the Central Regional Meeting of the ACS, Cincinnati, Ohio, **(1992)**.
- 18- Electrochemical Detection of some Biological Compounds at Conducting Polymer Electrodes, with H. B. Mark, Jr., N. F. Atta and H. Zimmer. Presented at the International Society of Electrochemistry Meeting, Berlin, Germany, **(1993)**.
- 19- Electropolymerized Films for the Construction of Ion-Selective electrodes, with N. F. Atta, H. Zimmer and H. B. Mark, Jr. Presented at the International Society of Electrochemistry Meeting, Berlin, Germany, **(1993)**.
- 20- Conducting Polymer Sensor Electrodes for the Detection of some Organic and Biological Molecules. Presented at the Freie Universität Berlin, Berlin, Germany, **(1993)**.
- 21- Conducting Polymers-Based Chemical Sensors, with H. B. Mark, Jr. and P. L. Bishop, Presented at the ACS Meeting, Transducer-Active Polymers, Washington DC, **(1994)**.

- 22- Novel Sensor Electrode for the Determination of Hydrogen sulfide in Environmental Samples, with T. Yu, P. L. Bishop and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Chicago, IL, **(1996)**.
- 23- Conducting Polymer Ferrocene-Modified Electrochemical Sensor for the Determination of Organic and Biological Compounds, with N. F. Atta, S. A. Darwish and A. M. A. Ismail, Presented in the Pittsburgh Conference, Chicago, IL **(1996)**.
- 24- Stainless Steel Conducting Polymer Modified Electrodes. I: Electrochemical and Structural Characterization, with S. A. Darwish, N. F. Atta, H. B. Mark, Jr., P. L. Bishop and N. A. Abdel Ghani, Presented in the Pittsburgh Conference, Chicago, IL **(1996)**.
- 25- Conducting Polymer-Based Electrochemical Sensors, with Nada F. Atta and Harry B. Mark, Jr., Presented in the ACS National Meeting, Florida, **(1996)**.
- 26- Electrochemical Synthesis and Properties of Conducting Polymeric Films Under Ultrasonic Conditions, with Nada F. Atta, Presented in the Pittsburgh Conference, Atlanta, GA **(1997)**.
- 27- Conducting Polymer Ion Selective Electrode – II- Conducting Polymer Sulfate Electrode, with Nada F. Atta, H. B. Mark, Jr., and Paul L. Bishop, Presented in the Pittsburgh Conference, Atlanta, GA **(1997)**.
- 28- Electrochemical Detection of Catechol Using Conducting Polymer Modified Dual Working Electrode I: Optimization of the Dual Applied Potentials and Electrode Separation, with H. Zhang, I. Marawi, J. F. Rubinson, T. H. Ridgway and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Atlanta, GA **(1997)**.
- 29- Electroanalytical Chemistry and Surface Characterization of Poly(3-methylthiophene) Modified Electrodes, with A. Khaskelis, I. Marawi, J. F. Rubinson, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Atlanta, GA **(1997)**.
- 30- Electrochemical Detection of Catechol Using Conducting Polymer Modified Dual Working Electrode. II: Flow Injection Analysis Employed to Detect Catecholamines in the Presence of Common Interferents, with S. K. Lunsford, H. Zhang, J. F. Rubinson, I. Marawi, T. H. Ridgway, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Atlanta, GA **(1997)**.
- 31- Color Removal and “other” contaminants of different dyes using electrochemistry at regular and polymer electrodes. A Spectroelectrochemical Approach, A. Galal, N. F. Atta, M. J. Kupferle, P. L. Bishop and H. B. Mark, Jr., Presented in the Pittsburgh Conference, New Orleans, LA **(1998)**.
- 32- Electrochemical Characterization of Conducting Polymers, A. Galal, N. F. Atta, Presented at the 2<sup>nd</sup> Symposium on Materials Science and Engineering, Al Ain, UAE, **(1998)**.



- 33- Corrosion Inhibition of Stainless Steel in Acid Medium with Heteroarylenes, A. Galal, N. F. Atta, Presented at the 2<sup>nd</sup> Symposium on Materials Science and Engineering, Al Ain, UAE, **(1998)**.
- 34- Surface Chemistry and Corrosion Properties of Different Crown Ethers, with A. Khaskelis, W. van Ooij, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, New Orleans, LA **(1998)**.
- 35- Corrosion Properties of Crown Ethers and Azacyclo Compounds, with A. Khaskelis, W. van Ooij, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Orlando, FL., **(1999)**.
- 36- Monomer Structural and Preparative Effects on the Properties of Conducting Polymers - An Electrochemical Study, with N. F. Atta, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Orlando, FL., **(1999)**.
- 37- In Situ Solid Phase Ionic Extraction Using Conducting Polymer Microelectrode in the Injection System for Flow Injection ICP-MS, with O. Ceylan, T. Gbatu, K. Sutton, J. F. Rubinson, J. Caruso, and H. B. Mark, Jr., Presented in the Pittsburgh Conference, Orlando, FL., **(1999)**.
- 38- Electrochemistry of Ion-Selective Conducting Poly(3-methylthiophene), Presented at the ACS National Meeting, San Francisco, California, USA, **(2000)**.
- 39- Hybrid Polymer/Inorganic composites, electrochemistry and characterization, Presented at the Pittsburgh Conference, Orlando, FL., **(2003)**.
- 40- Hybrid Organic-Inorganic Materials, Towards Organic Conducting Polymers Modified With Sub-Micro-Scale Particles. Presented at the Biannual Conference on Chemistry, Cairo, Egypt, **(2004)**.
- 41- Electrodeposited Platinum at Conducting Polymer Electrodes. I. Towards sub-micro particles with controlled size and distribution. Presented at the International Conference on Crystallization and Electro-crystallization: Fundamentals and Applications. Sponsored by the Alexander von Humboldt Foundation, Germany. Varna, Bulgaria, **(2005)**.
- 42- Surface Modification of Electrodes and Their Application in Chemical Analysis. (Key Note Speaker). Presented at the 3<sup>rd</sup> Black Sea Basin Conference on Analytical Chemistry, Constanta, Romania, **(2005)**.
- 43- Electrodeposited Platinum at Conducting Polymer Electrodes. II. Application in the Oxidation of Methanol. Presented at the Workshop on Synthesis, Characterization and Industrial Applications of Nanoparticles and Nanostructure Materials, Borg Al Arab, Alexandria, Egypt, **(2005)**.

- 44- Electrodeposited Sub-micro-inorganic Particles at Conducting Polymer Electrodes: Electrocatalytic Applications in Sensors and Methanol Oxidation. Presented at the International Conference on “Nanoscience and Its Impact in Renewable Energy and Medicine,” (Invited Speaker), Beirut, Lebanon (2005).
- 45- Conducting polymers-inorganic hybrid sub micro structured materials; towards sensors and energy conversion applications. Presented at the 1<sup>st</sup> Workshop of the AMNTG-Nobel Project, National Research Center, Cairo, Egypt, November 26-27, (2006).
- 46- Controlled deposition of sub-micro metal particles in conducting polymer matrices for sensor and energy conversion applications, Middle East Frontiers of Science and Engineering, FOSE07, Seville, Spain, (2007).
- 47- Improvement of electrochemical determination of some drugs at surface modified electrodes, Sayed E. Khalil, Nada F. Atta, Ahmed Galal, Presented in the Pittsburgh Conference, New Orleans, LA., (2008).
- 48- Electrochemical Sensing at Conducting Polymer Films Modified with Platinum/Palladium Submicro-particles, Nada F. Atta, Maher F. El-Kady, Ahmed Galal, Presented in the Pittsburgh Conference, New Orleans, LA., (2008).
- 49- Egyptian National STI Policy for Development, Ahmed Galal, Presented in “International Science Technology and Innovation Centre for South-South Launch Meeting,” Kuala Lumpur, Malaysia, May 22-24 2008.
- 50- “Energy; Needs and Impacts; The Challenge to Science and Technology,” Ahmed Galal, Presented in Centre for Science and Technology of the Non-Aligned and other Developing Countries, International Workshop on Cleaner Production and Energy Conservation for Sustainability, June 2008, Cochin, India, 2008.
- 51- “Nano-structured perovskites for clean and facile production of hydrogen,” Nada F. Atta, Maher F. El-Kady, Shima M. Ali, Ali M. Abdel Mageed, Ahmed Galal, presented at the Kuwait Conference of Chemistry (KCC 2010) at Kuwait City (Kuwait Chemical Society Conference), 2010.
- 52- “Nano-structured surfaces for sensing and catalysis applications,” Ahmed Galal, presented at US-Egypt Advanced Studies Institute, Cairo – Egypt, March 2010.

## PUBLICATIONS

- 53- Electrochemical Polarization and Passivation of Tin in Neutral Solutions of Chloride, Bromide and Iodide Ions, I.A. Ammar, S. Darwish, M.W. Khalil, A. Galal, *Z. Werkstofftech.* 13,376-385,(1982).

- 54- The Anodic Behavior and Passivity of Tin in Sulfate Solutions, I.A. Ammar, S. Darwish, M.W. Khalil, and A. Galal, *Z.Werkstofftech.* 14,330-336, (1983).
- 55- Potentiodynamic and Cyclic Voltammetric Studies on the Passivity of Tin in Neutral Phosphate Buffer, I.A. Ammar, S. Darwish, M.W. Khalil, A. Galal, *Z. Werkstofftech.*,16,194-203, (1985).
- 56- Investigation of the Passivity of Tin in Neutral Media by Cyclic Galvanostatic Polarization, I.A. Ammar, S. Darwish, M.W. Khalil, A. Galal, *Z.Werkstofftech.*,16, 413-421, (1985).
- 57- Evidence for the Activation-Controlled Galvanostatic Growth of Thin Anode Films on Tin in Some Neutral Media, I.A. Ammar, S. Darwish, M.W. Khalil, A. Galal, *Z.Werkstofftech.*,17, 174-183, (1986).
- 58- Some X-Ray Photoelectron Spectroscopic Measurements on Passivated Tin in Some Neutral Media, I.A. Ammar, S. Darwish, M.W. Khalil, A. Galal, *Z.Werkstofftech.*, 19, 294-301, (1988).
- 59- The Spectroelectrochemical Determination of "Formal Potentials and n-Values" of Some Electrochemically Formed Conducting Polyheterolene Films, David D. Cunningham, Ahmed Galal, AC.V. Pham, Edmund T. Lewis, Armin Burkhardt, Laarni Laguren-Davidson, Asare Nkansah, O.Y. Ataman, Hans Zimmer and Harry B. Mark,Jr, *J.Electrochem. Soc.*, 135,11, 2750-54, (1988).
- 60- Synthesis of Mixed Oligomeric Heteroarylenes Containing Furan, Thiophene, And Selenophene Rings; Their UV Spectra And Oxidation Potentials, Hans Zimmer, R. Shabana, A. Galal, and H.B. Mark,Jr., *Phosphorus, Sulfur and Silicon*, 42,171-176, (1989).
- 61- Synthesis of Mixed Oligomeric Heteroarylenes Containing Thiophene and Selenophene Rings; their U.V. Spectra and Oxidation Potentials, R. Shabana, A. Galal, Harry B. Mark,Jr., Hans Zimmer, Salo Gronowitz and A.B. Hornfeldt, *J. Chem. Soc., Chem. Comm.*, 988-989, (1988).
- 62- Studies of Some Hindered 2,2"-Bithienyl and 3,3"-Bridged 2,2" - Bithienyls with Special Reference to their UV Spectra and Oxidation Potentials, A. Amer, A. Burkhardt, A. Nakansah, R. Shabana, A. Galal, H.B. Mark,Jr. and Hans Zimmer, *Phosphorus, Sulfur and Silicon*, 42, 63-71, (1989).
- 63- Electrochemical Synthesis of Conducting Polymers From Oligomers Containing Thiophene and Furan Rings, Ahmed Galal, Edmund T. Lewis, O.Y. Ataman, Hans Zimmer and Harry B. Mark,Jr., *J. Poly. Sc., Poly. Chem.*,27, 1891-1896, (1989).
- 64- Conductivity Monitoring By An Amperometric Detector With A Cu(II) Containing Poly(3-Methylthiophene) Electrode, Z.L.Xue, A. Ersin Karagozler,O.Y. Ataman, Ahmed Galal, A. Amer, Hans Zimmer and H.B. Mark,Jr., *Electroanalysis*, 2, 1-7, (1990).

- 65- Electrochemical Synthesis, Characterization and Spectroelectrochemical Studies of Some Conducting Polyheteroarylenes, Ahmed Galal, D.D. Cunningham, Ali E. Karagozler, Edmund T. Lewis, Asare Nkansah, Armin Burkhardt, O.Y. Ataman, Hans Zimmer and Harry B. Mark, Jr., *Proceedings of the Electrochemical Society*, Vols. 90-92, 179-191, (1990).
- 66- Synthesis of Mixed Oligomeric Heteroarylenes Containing Unsubstituted Furan, Thiophene, and Selenophene Rings; Their UV Spectra and Oxidation Potentials, R. Shabana, A. Galal, H.B. Mark, Jr., and Hans Zimmer, *Phosphorus, Sulfur and Silicon*, 48, 239-244, (1990).
- 67- Voltammetric Studies of the Oxidation of Reduced Nicotinamide Adenine Dinucleotide at a Conducting Polymer-Modified Electrode, Nada F. Atta, Ahmed Galal, Ali E. Karagozler, Hans Zimmer and Harry B. Mark, Jr., *J. Chem. Soc., Chem. Commun.*, 19, 1347-1349, (1990).
- 68- Electrochemistry and Detection of Organic and Biological Molecules at Conducting Polymer Modified Electrodes, Nada F. Atta, Ahmed Galal, Ersin A. Karagozler, Hans Zimmer and Harry B. Mark, Jr., *Biosensors & Bioelectronics*, 6, 333-341, (1991).
- 69- A Potentiometric Iodide Sensor Based on a Conducting Poly(3- Methylthiophene) Polymer Film Electrode, A.E. Karagozler, O.Y. Ataman, Ahmed Galal, Zhi-Lun Xue, H. Zimmer and H. B. Mark, Jr., *Anal. Chim. Acta*, 248, 163-172, (1991).
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