

## Curriculum Vitae

Dr: Hanaa Barakat Hassan

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### Summary of Qualifications

#### Education

- 1- Degree of Bachelor in chemistry, Faculty of science, Cairo University (1992).
- 2- M.Sc in electrochemistry (amino acids as corrosion inhibitors for mild steel in acid solutions)(1996).
- 3- Ph.D. in electrochemistry (Direct methanol fuel cells, electrocatalytic oxidation of methanol) (2001).

#### Occupations:

- 1- Instructor at chemistry department, Faculty of science, Cairo University from 1993-1996.
- 2- Teacher assistant at Faculty of science, Cairo University from 1996-2001
- 3- Lecturer in physical chemistry at Faculty of science, Cairo University from 2001-2009.
- 4- Assistant professor in physical chemistry at faculty of science, Cairo University from 2009 -2014.
- 5- Professor from 2014 till now

#### Research Experience

Electrochemistry including, corrosion studies, oxide films studies, electropolymerization, electrooxidation processes, electro-synthesis, Fuel cells and related areas.

#### Teaching experience:

Practical general chemistry, analytical chemistry (qualitative and quantitative), physical chemistry and electrochemistry for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> year students, vet, pre-dental and diploma students.

Teaching general chemistry C101, PTC101, C102, chemical kinetics C317, physical polymer chem. C318, electrochemistry C215 and electrodynamic C317.

List of publications:-

- 1- Naturally occurring organic substances as corrosion inhibitors for mild steel in acid medium, M. A Abdel Rahim, Hanaa B. Hassan M. W. Khalil, Mat. Wiss. U. Werkstofftech. 28 (1997) 98.
- 2- Naturally occurring organic substances as corrosion inhibitors for mild steel in acid medium, concentration and temperature effects, M. A Abdel Rahim, Hanaa B. Hassan, M. W. Khalil, Mat. Wiss. U. Werkstofftech. 28 (1997) 198.
- 3- Platinum-Tin alloy electrodes for direct methanol fuel cells, M. A. Abdel Rahim, M.W. Khalil and Hanaa B. Hassan, J. Appl. Electrochem.vol. 30 (2000) 1151.
- 4- Nickel impregnated silicalite-1 as electrocatalyst for methanol electrooxidation, M.W. Kalil, M.A Abdel Rahim, A. Zimmer, Hanaa B. Hassan, Randa M Abdel Hameed, J. of Power sources 144 (2005) 35.
- 5- A systematic study of the effect of OH<sup>-</sup> and Ni<sup>2+</sup> on electrocatalytic oxidation of methanol at Ni-s1 electrode, M. A Abdel Rahim, Hanaa B. Hassan, Randa M Abdel Hameed, J. of Power sources 154 (2006) 59
- 6- Graphite electrodes modified with nickel nanoparticles for methanol electrooxidation, M. A Abdel Rahim, Hanaa B. Hassan, Randa M Abdel Hameed, Fuel cells 4 (2007) 298
- 7- Nanostructured Ni-P-TiO<sub>2</sub> composite coating for electrocatalytic oxidation of small organic molecules, A. A. Aal, Hanaa B. Hassan , M A Abdel Rahim, J. electroanalytical chemistry 619/620 (2008) 17.
- 8- Synthesis and characteristic of electroless deposited Co-W-P thin film as diffusion barrier layer, A.Aal, H. Barakat, Z. Abdel Hamid, surface and coatings technology 202 (2008) 4591.
- 9- Titanium and platinum modified titanium electrodes as catalysts for methanol electro-oxidation, M. A. Abdel Rahim and H. B. Hassan, Thin Solid Films 517 (2009) 3362.
- 10- Electrodeposited nanocomposite coatings for fuel cell application , A. Abdel Aal and H. B. Hassan, Journal of Alloys and Compounds, 477 (2009) 652.
- 11- Electrodeposited Pt and Pt-Sn nanoparticles on Ti as anodes for direct methanol fuel cells, Hanaa B. Hassan, J. Fuel chemistry and technology 37 (2009) 346.

- 12- Electro-oxidation of Ethanol and Propanol at Pt and Ti Modified Nanoparticles Substrates for Direct Alcohols Fuel Cells (DAFCS), Hanaa B. Hassan, J. open electrochemistry 1 (2009) 19.
  - 13- Electrodeposition of CoMoP thin film as diffusion barrier layer for ULSI applications, Z Abdel Hamid, A. Abdel Aal, Ali Shaaban, H. B. Hassan, Surface & Coatings Technology, 203 (2009)3692.
  - 14- Process and performance of hot dip zinc coatings containing ZnO and Ni–P under layers as barrier protection Z. Abdel Hamid, A. Abdel Aal, H. B. Hassan, A. Shaaban, , Applied Surface Science 256 (2010) 4166.
  - 15- Influence of Deposition Temperature and Heat Treatment on the Performance of Electroless Ni-B Films, Z. Abdel Hamid, H. B. Hassan, A. M. Attyia. Surface and Coatings Technology 2010. Surface & Coatings Technology 205 (2010) 2348–2354
  - 16- Electroless Ni-B supported on carbon for direct alcohol fuel cell applications, H. B. Hassan, Z. Abdel Hamid. International Journal of Hydrogen energy, 36 (2011) 849-856.
  - 17- Electrodeposited Ni-Cr<sub>2</sub>O<sub>3</sub> nanocomposite anodes for ethanol Electrooxidation, H. B. Hassan , Z. Abdel Hamid, international journal of hydrogen energy 36 (2011) 5117-5127.
  - 18- Synthesis and protection of AM50 magnesium alloy and its composites using environmentally pretreatment electrolyte, Z. Abdel Hamid , M.T. Abou El-khair, H.B. Hassan, Surface & Coatings Technology 206 (2011) 1041–1050.
  - 19- Electrodeposited Cu–CuO Composite Films for Electrochemical Detection of Glucose, H. B. Hassan, Z. Abdel Hamid. Int. J. Electrochem. Sci., 6 (2011) 5741 – 5758.
  - 20- Influence of electrodeposition parameters on the characteristics of NiMoP film, Z. Abdel Hamid, H.B. Hassan, Surface & Coatings Technology 212 (2012) 37-45.
  - 21- The Electrocatalytic Behavior of Electrodeposited Ni-Mo-P Alloy Films towards Ethanol Electrooxidation, H. B. Hassan and Z. Abdel Hamid, accepted for publication in Interface and surface Analysis 45 (2013) 1135-1143.
  - 22- Impact of composition and fabrication method on the corrosion behavior of tungsten heavy alloys in aqueous solutions, Z. Abdel Hamid and H. B. Hassan, Surf. Interface Anal. 45 (2013) 1830–1837.
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- 23- Ni Modified MCM-41 as a Catalyst for Direct Methanol Fuel Cells, H.B. Hassan, M.A. Abdel Rahim, M.W. Khalil and R.F. Mohammed, Int. J. Electrochem. Sci., 9 (2014) 760 – 777.
- 24- H. B. Hassan, Z. Abdel Hamid, M. Hassan. Synthesis and performance of electroless Ni–P–TiCN composite coatings on Al substrate. Surf. Interface Anal., xx (2014) xx–xx, (wileyonlinelibrary.com) DOI 10.1002/sia.5329.

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Supervision experience

- 1-M.Sc thesis on (Electrochemical studies on the corrosion of al and al alloys (2006).
- 2-M.Sc thesis on (Utilization of modified Ni-MCM-41 as a catalyst for direct alcohol fuel (DAFC`S) (2012).
- 3-M.Sc thesis on (Electrochemical studies on the corrosion and the corrosion inhibition of mild and printed steel in different media).(2013).
- 4-M.Sc thesis on (Synthesis and Characterization of Graphene Modified Nano-Composite Coatings as Anticorrosion Material for Agricultural Applications) (2014).
- 5-Ph.D thesis on (Modified electrochemical catalysts for direct methanol fuel cells, preparation and electrochemical studies (2005)

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Scientific conferences

- Biannual conference on chemistry 02, Faculty of science, Cairo university 4-7 march 2002 (Modified carbon anodes for methanol oxidation in acid medium).
- Biannual conference on chemistry, Faculty of science, Cairo University 2008.  
(nanoparticles valve metal modified anodes for methanol electrooxidation).
- International Conference on Nanomaterials Synthesis, Fabrication and Applications, (Nanotech Challenges 2014); 14-17 April 2014, Cairo, Egypt (Ni–P–TiCN Composite Coatings as Anodes for Methanol Electrooxidation).

Referee in some international journals:-

- 1- International journal of hydrogen energy
- 2- Journal of applied electrochemistry
- 3- Journal of electroanalytical chemistry
- 4- Journal of Applied Surface Science

- 5- Open corrosion journal
- 4- Chinese journal of catalysis
- 5- Surface coatings and technology journal.
- 6- Materials chemistry and physics journal.

Language skills:

- Arabic : native language-English: Very good command of both written and spoken English
- French: Good command of both written and spoken French